MC1490

RF/IF/Audio Amplifier

The MC1490 is an integrated circuit featuring wide–range AGC for use in RF/IF amplifiers and audio amplifiers over the temperature range, -40° to $+85^{\circ}$ C.

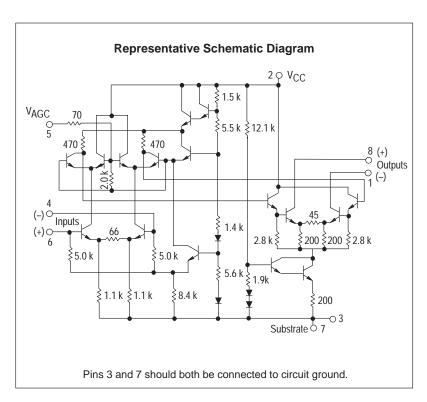
- High Power Gain: 50 dB Typ at 10 MHz
 45 dB Typ at 60 MHz
 35 dB Typ at 100 MHz
- Wide Range AGC: 60 dB Min, DC to 60 MHz
- 6.0 V to 15 V Operation, Single Polarity Supply
- See MC1350D for Surface Mount

MAXIMUM RATINGS (T_A = +25°C, unless otherwise noted.)

Rating	Symbol	Value	Unit
Power Supply Voltage	Vcc	+18	Vdc
AGC Supply	VAGC	Vcc	Vdc
Input Differential Voltage	V _{ID}	5.0	Vdc
Operating Temperature Range	TA	-40 to +85	°C
Storage Temperature Range	T _{stg}	-65 to +150	°C
Junction Temperature	TJ	+150	°C

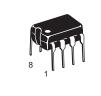
ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC1490P	$T_A = -40^{\circ} \text{ to } +85^{\circ}\text{C}$	Plastic

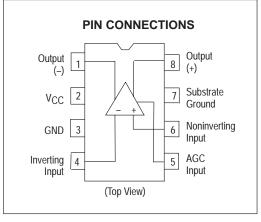


WIDEBAND AMPLIFIER WITH AGC

SEMICONDUCTOR TECHNICAL DATA



P SUFFIX PLASTIC PACKAGE CASE 626



SCATTERING PARAMETERS (V_{CC} = +12 V_{dc} , T_A = +25°C, Z_0 = 50 Ω)					
		f = I Ty			
Parameter	Symbol	30	60	Unit	
Input Reflection Coefficient	S ₁₁ #11	0.95 -7.3	0.93 -16	_ deg	
Output Reflection Coefficient	S ₂₂ #22	0.99 -3.0	0.98 -5.5	_ deg	
Forward Transmission Coefficient	S ₂₁ #21	16.8 128	14.7 64.3	_ deg	
Reverse Transmission Coefficient	S ₁₂ θ12	0.00048 84.9	0.00092 79.2	_ deg	

ELECTRICAL CHARACTERISTICS (V_{CC} = 12 Vdc, f = 60 MHz, BW = 1.0 MHz, T_A = 25°C)

Characteristic	Figure	Symbol	Min	Тур	Max	Unit
Power Supply Current Drain	-	ICC	_	_	17	mA
AGC Range (AGC) 5.0 V Min to 7.0 V Max	19	MAGC	-60	_	_	dB
Output Stage Current (Sum of Pins 1 and 8)	_	lo	4.0	_	7.5	mA
Single–Ended Power Gain R _S = R _L = 50 Ω	19	Gp	40	_	_	dB
Noise Figure R _S = 50 Ohms	19	NF	_	6.0	_	dB
Power Dissipation	_	PD	_	168	204	mW

Figure 1. Unneutralized Power Gain versus Frequency (Tuned Amplifier, See Figure 19)

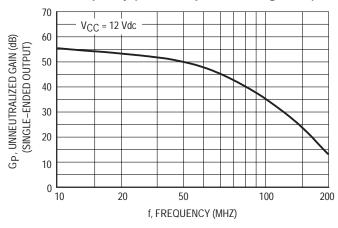


Figure 2. Voltage Gain versus Frequency (Video Amplifier, See Figure 20)

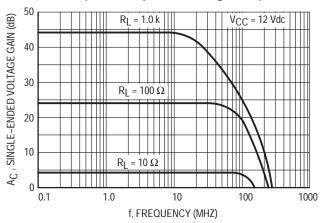


Figure 3. Dynamic Range: Output Voltage versus Input Voltage (Video Amplifier, See Figure 20)

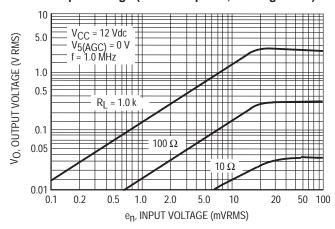


Figure 4. Voltage Gain versus Frequency (Video Amplifier, See Figure 20)

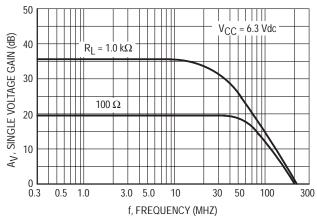


Figure 5. Voltage Gain and Supply Current versus Supply Voltage (Video Amplifier, See Figure 20)

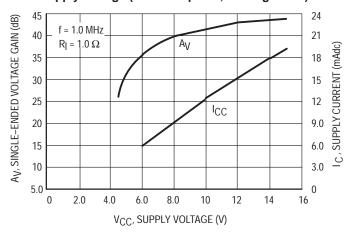


Figure 6. Typical Gain Reduction versus AGC Voltage

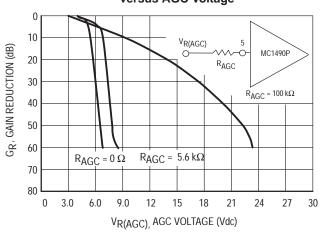


Figure 7. Typical Gain Reduction versus AGC Current

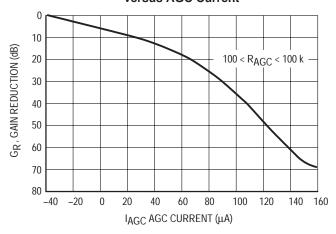


Figure 8. Fixed Tuned Power Gain Reduction versus Temperature (See Test Circuit, Figure 19)

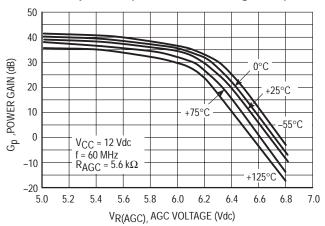


Figure 9. Power Gain versus Supply Voltage (See Test Circuit, Figure 19)

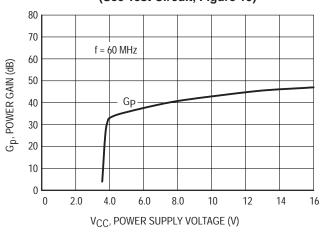


Figure 10. Noise Figure versus Frequency

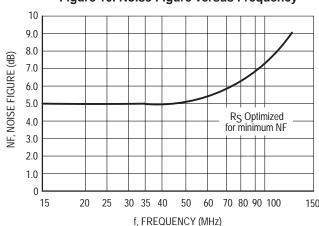


Figure 11. Noise Figure versus Source Resistance

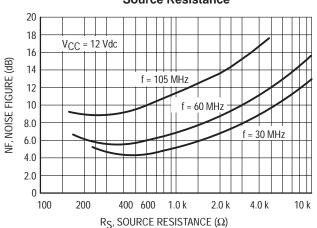


Figure 12. Noise Figure versus AGC Gain Reduction

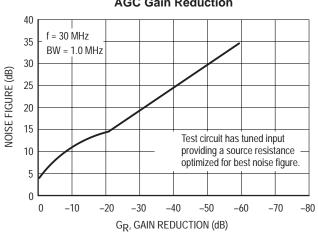


Figure 13. Harmonic Distortion versus AGC Gain Reduction for AM Carrier (For Test Circuit, See Figure 14)

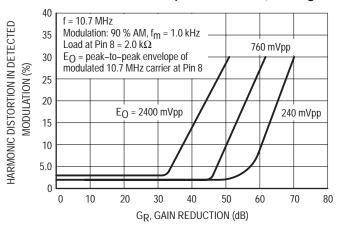
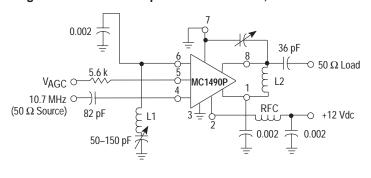


Figure 14. 10.7 MHz Amplifier Gain \simeq 55 dB, BW \simeq 100 kHz



L1 = 24 turns, #22 AWG wire on a T12–44 micro metal Toroid core (–124 pF) L2 = 20 turns, #22 AWG wire on a T12–44 micro metal Toroid core (–100 pF)

Figure 15. S₁₁ and S₂₂, Input and Output Reflection Coefficient

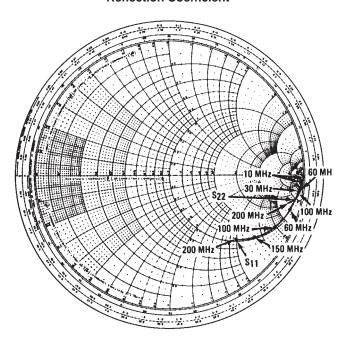


Figure 16. S₁₁ and S₂₂, Input and Output Reflection Coefficient

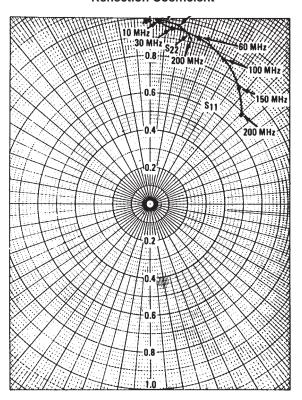


Figure 17. S₂₁, Forward Transmission Coefficient (Gain)

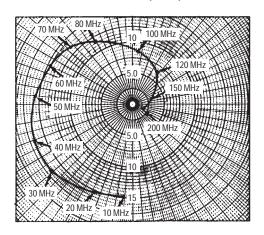


Figure 18. S₁₂, Reverse Transmission Coefficient (Feedback)

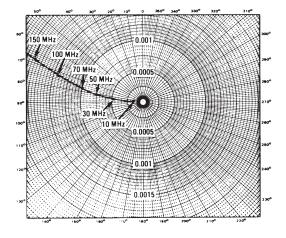
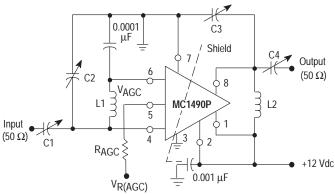


Figure 19. 60 MHz Power Gain Test Circuit



L1 = 7 turns, #20 AWG wire, 5/16" Dia., 5/8" long L2 = 6 turns, #14 AWG wire, 9/16" Dia., 3/4" long C1,C2,C3 = (1-30) pF C4 = (1-10) pF

Figure 20. Video Amplifier

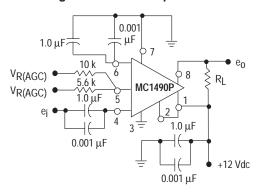
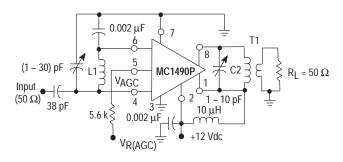
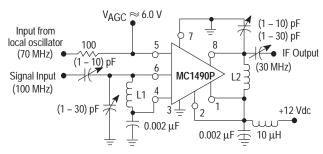


Figure 21. 30 MHz Amplifier (Power Gain = 50 dB, BW \approx 1.0 MHz)



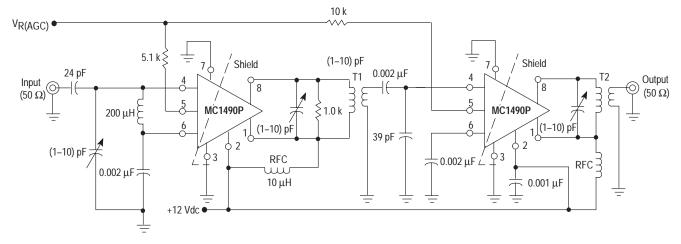
L1 = 12 turns, #22 AWG wire on a Toroid core, (T37–6 micro metal or equiv). T1: Primary = 17 turns, #20 AWG wire on a Toroid core, (T44–6). Secondary = 2 turns, #20 AWG wire.

Figure 22. 100 MHz Mixer



L1 = 5 turns, #16 AWG wire, 1/4", ID Dia., 5/8" long L2 = 16 turns, #20 AWG wire on a Toroid core, (T44–6).

Figure 23. Two–Stage 60 MHz IF Amplifier (Power Gain \approx 80 dB, BW \approx 1.5 MHz)



T1: Primary Winding = 15 turns, #22 AWG wire, 1/4'' ID Air Core Secondary Winding = 4 turns, #22 AWG wire, Coefficient of Coupling ≈ 1.0

T2: Primary Winding = 10 turns, #22 AWG wire, 1/4'' ID Air Core Secondary Winding = 2 turns, #22 AWG wire, Coefficient of Coupling ≈ 1.0

DESCRIPTION OF SPEECH COMPRESSOR

The amplifier drives the base of a PNP transistor operating common–emitter with a voltage gain of approximately 20. The control R1 varies the quiescent Q point of this transistor so that varying amounts of signal exceed the level V_{Γ} . Diode D1 rectifies the positive peaks of Q1's output only when these peaks are greater than $V_{\Gamma} \simeq 7.0$ V. The resulting output is filtered by C_{X} , R_{X} .

 R_X controls the charging time constant or attack time. C_X is involved in both charge and discharge. R2 (the 150 $k\Omega$ and input resistance of the emitter–follower Q2) controls the decay time. Making the decay long and attack short is accomplished by making R_X small and R2 large. (A Darlington emitter–follower may be needed if extremely slow decay times are required.)

The emitter-follower Q2 drives the AGC Pin 5 of the MC1490P and reduces the gain. R3 controls the slope of signal compression.

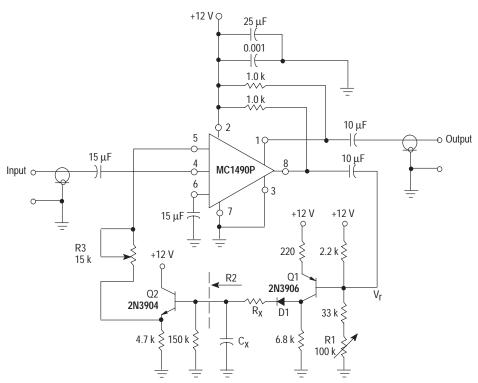
Table 1. Distortion versus Frequency

Fraguenay	Distortion		Distortion	
Frequency	10 mV e _i	100 mV e _i	10 mV e _i	100 mV e _i
100 Hz	3.5%	12%	15%	27%
300 Hz	2%	10%	6%	20%
1.0 kHz	1.5%	8%	3%	9%
10 kHz	1.5%	8%	1%	3%
100 kHz	1.5%	8%	1%	3%
	Notes 1 and 2		Notes 3	3 and 4

Notes:

- (1) Decay = 300 ms Attack = 20 ms
- (2) $C_X = 7.5 \mu F$ $R_X = 0 \text{ (Short)}$
- (3) Decay = 20 ms Attack = 3.0 ms
- $\begin{array}{cc} \text{(4)} & \text{C}_{\text{X}} = 0.68 \; \mu\text{F} \\ \text{R}_{\text{X}} = 1.5 \; \text{k}\Omega \end{array}$

Figure 24. Speech Compressor

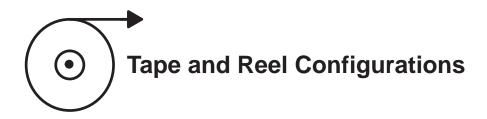


Tape and Reel Options

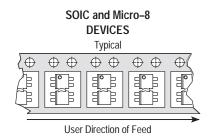
In Brief . . .

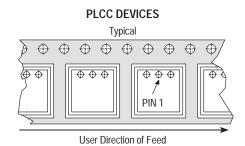
Motorola offers the convenience of Tape and Reel packaging for our growing family of standard integrated circuit products. Reels are available to support the requirements of both first and second generation pick—and—place equipment. The packaging fully conforms to the latest EIA—481A specification. The antistatic embossed tape provides a secure cavity, sealed with a peel—back cover tape.

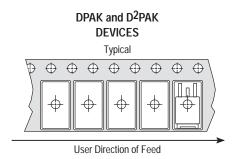
	rage
Tape and Reel Configurations	12-2
Tape and Reel Information Table	12-4
Analog MPQ Table	12-5

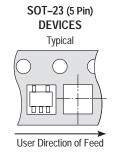


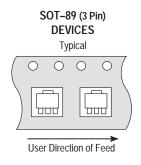
Mechanical Polarization

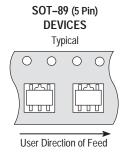










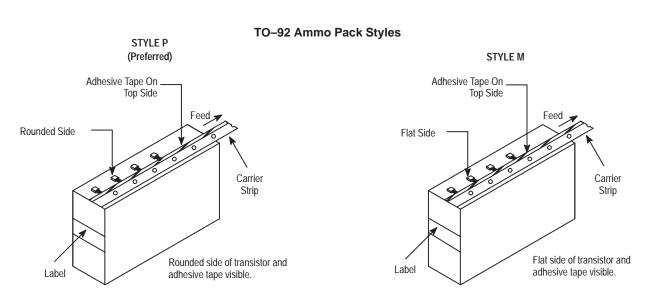


Tape and Reel Configurations (continued)

TO-92 Reel Styles STYLE A (Preferred) STYLE E Carrier Strip Carrier Strip Rounded Flat Side Side Adhesive Tape Adhesive Tape 0 0 0 Feed Feed

Rounded side of transistor and adhesive tape visible.

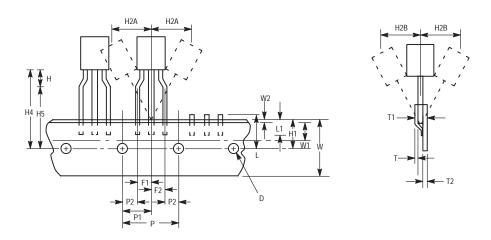
Flat side of transistor and adhesive tape visible.



Style P ammo pack is equivalent to Styles A and B of reel pack dependent on feed orientation from box.

Style M ammo pack is equivalent to Style E of reel pack dependent on feed orientation from box.

TO-92 EIA Radial Tape in Fan Fold Box or On Reel



Tape and Reel Information Table

Package	Tape Width (mm)	Devices ⁽¹⁾ per Reel	Reel Size (inch)	Device Suffix
SO-8, SOP-8 SO-14 SO-16	12 16 16	2,500 2,500	13 13 13	R2 R2 R2
SO-16L, SO-8+8L WIDE SO-20L WIDE SO-24L WIDE SO-28L WIDE SO-28L WIDE	16 24 24 24 24 32	2,500 1,000 1,000 1,000 1,000 1,000	13 13 13 13 13	R2 R2 R2 R2 R2 R2 R3
Micro-8	12	2,500	13	R2
PLCC-20 PLCC-28 PLCC-44	16 24 32	1,000 500 500	13 13 13	R2 R2 R2
PLCC-52 PLCC-68 PLCC-84	32 44 44	500 250 250	13 13 13	R2 R2 R2
TO-226AA (TO-92) ⁽²⁾	18	2,000	13	RA, RE, RP, or RM (Ammo Pack) only
DPAK	16	2,500	13	RK
D ² PAK	24	800	13	R4
SOT-23 (5 Pin)	8	3,000	7	TR
SOT-89 (3/5 Pin)	12	1,000	7	T1

⁽¹⁾ Minimum order quantity is 1 reel. Distributors/OEM customers may break lots or reels at their option, however broken reels may not be returned.

⁽²⁾ Integrated circuits in TO–226AA packages are available in Styes A and E only, with optional "Ammo Pack" (Suffix RP or RM). The RA and RP configurations are preferred. For ordering information please contact your local Motorola Semiconductor Sales Office.

Analog MPQ Table

Tape/Reel and Ammo Pack

Package Type	Package Code	MPQ
PLCC		
Case 775	0802	1000/reel
Case 776	0804	500/reel
Case 777	0801	500/reel
SOIC		•
Case 751	0095	2500/reel
Case 751A	0096	2500/reel
Case 751B	0097	2500/reel
Case 751G	2003	1000/reel
Case 751D	2005	1000/reel
Case 751E	2008	1000/reel
Case 751F	2009	1000/reel
Micro-8		•
Case 846A	-	2500/reel
TO-92		•
Case 29	0031	2000/reel
Case 29	0031	2000/Ammo Pack
DPAK		•
Case 369A	-	2500/reel
D ² PAK		•
Case 936	-	800/reel
SOT-23 (5 Pin)		
Case 1212	-	3000/reel
SOT-89 (3 Pin)		
Case 1213	-	1000/reel
SOT-89 (5 Pin)		
Case 1214	-	1000/reel
		÷

Packaging Information

In Brief . . .

The packaging availability for each device type is indicated on the individual data sheets and the Selector Guide. All of the outline dimensions for the packages are given in this section.

The maximum power consumption an integrated circuit can tolerate at a given operating ambient temperature can be found from the equation:

$$P_{D(TA)} = \frac{T_{J(max)} - T_{A}}{R_{\theta JA}(Typ)}$$

where:

PD(TA) = Power Dissipation allowable at a given operating ambient temperature. This must be greater than the sum of the products of the supply voltages and supply currents at the worst case operating condition.

T_{J(max)} = Maximum operating Junction Temperature as listed in the Maximum Ratings Section.
See individual data sheets for T_{J(max)} information.

T_A = Maximum desired operating Ambient Temperature

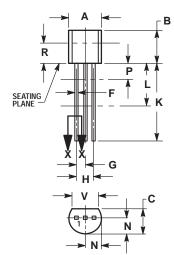
 $R_{\theta JA(Typ)} = Typical Thermal Resistance Junction-to-Ambient$

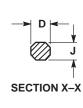
Case Outline Dimensions

LP, P, Z SUFFIX **CASE 29-04**

Plastic Package (TO-226AA/TO-92) **ISSUE AD**







NOTES:

- NOTES:

 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

 2. CONTROLLING DIMENSION: INCH.

 3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
- IS DICCONTROLLED.

 DIMENSION F APPLIES BETWEEN P AND L.

 DIMENSION D AND J APPLY BETWEEN L AND K

 MINIMUM. LEAD DIMENSION IS UNCONTROLLED

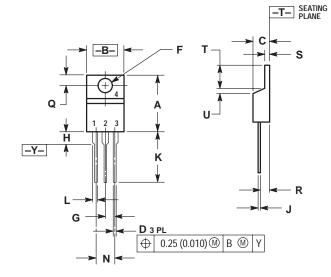
 IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.175	0.205	4.45	5.20
В	0.170	0.210	4.32	5.33
С	0.125	0.165	3.18	4.19
D	0.016	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
G	0.045	0.055	1.15	1.39
Н	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500		12.70	
L	0.250		6.35	
N	0.080	0.105	2.04	2.66
Р		0.100		2.54
R	0.115		2.93	
V	0.135		3.43	

KC, T SUFFIX **CASE 221A-06**

Plastic Package ISSUE Y



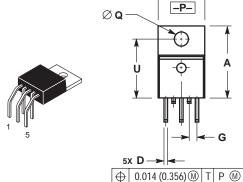


- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH.

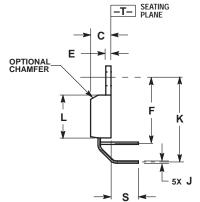
	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.560	0.625	14.23	15.87
В	0.380	0.420	9.66	10.66
С	0.140	0.190	3.56	4.82
D	0.020	0.045	0.51	1.14
F	0.139	0.155	3.53	3.93
G	0.100	BSC	2.54	BSC
Н		0.280		7.11
J	0.012	0.045	0.31	1.14
K	0.500	0.580	12.70	14.73
L	0.045	0.070	1.15	1.77
N	0.200 BSC		5.08	BSC
Q	0.100	0.135	2.54	3.42
R	0.080	0.115	2.04	2.92
S	0.020	0.055	0.51	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27



Plastic Package ISSUE D



– B→



NOTES:

- OTES.

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

 2. CONTROLLING DIMENSION: INCH.

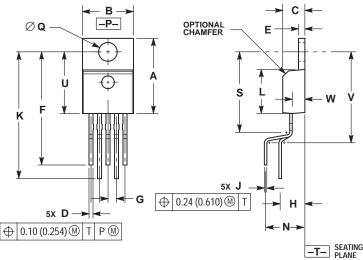
 3. DIMENSION D DOES NOT INCLUDE
- INTERCONNECT BAR (DAMBAR) PROTRUSION.
 DIMENSION D INCLUDING PROTRUSION SHALL NOT EXCEED 0.043 (1.092) MAXIMUM.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.572	0.613	14.529	15.570
В	0.390	0.415	9.906	10.541
С	0.170	0.180	4.318	4.572
D	0.025	0.038	0.635	0.965
Ε	0.048	0.055	1.219	1.397
F	0.570	0.585	14.478	14.859
G	0.067 BSC		1.702	BSC
J	0.015	0.025	0.381	0.635
K	0.730	0.745	18.542	18.923
L	0.320	0.365	8.128	9.271
Q	0.140	0.153	3.556	3.886
S	0.210	0.260	5.334	6.604
U	0.468	0.505	11.888	12.827



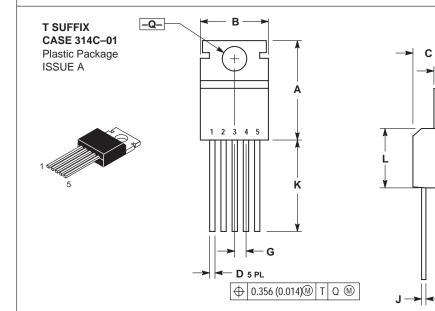
Plastic Package ISSUE J





- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH. DIMENSION D DOES NOT INCLUDE INTERCONNECT BAR (DAMBAR) PROTRUSION.
 DIMENSION D INCLUDING PROTRUSION SHALL NOT EXCEED 0.043 (1.092) MAXIMUM.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.572	0.613	14.529	15.570
В	0.390	0.415	9.906	10.541
С	0.170	0.180	4.318	4.572
D	0.025	0.038	0.635	0.965
Ε	0.048	0.055	1.219	1.397
F	0.850	0.935	21.590	23.749
G	0.067	BSC	1.702	BSC
Н	0.166	BSC	4.216	BSC
J	0.015	0.025	0.381	0.635
K	0.900	1.100	22.860	27.940
L	0.320	0.365	8.128	9.271
N	0.320	BSC	8.128	BSC
Q	0.140	0.153	3.556	3.886
S		0.620		15.748
U	0.468	0.505	11.888	12.827
٧		0.735		18.669
W	0.090	0.110	2.286	2.794

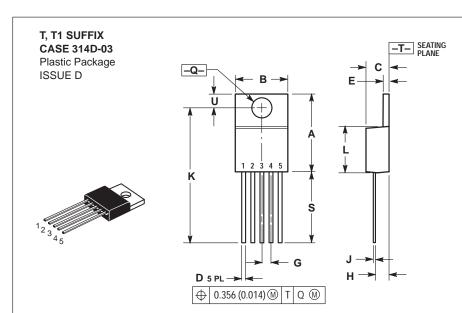


NOTES:

-T- SEATING PLANE

- IOLES:
 1 DIMENSIONING AND TOLERANCING PER ANSI
 Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. DIMENSION D DOES NOT INCLUDE
 INTERCONNECT BAR (DAMBAR) PROTRUSION.
 DIMENSION D INCLUDING PROTRUSION SHALL
 NOT EVECTED 10.03 (ACC) MANYIMEN NOT EXCEED 10.92 (0.043) MAXIMUM.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.610	0.625	15.59	15.88
В	0.380	0.420	9.65	10.67
С	0.160	0.190	4.06	4.83
D	0.020	0.040	0.51	1.02
Ε	0.035	0.055	0.89	1.40
G	0.067 BSC		1.702 BSC	
J	0.015	0.025	0.38	0.64
K	0.500		12.70	
L	0.355	0.370	9.02	9.40
Q	0.139	0.147	3.53	3.73



- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

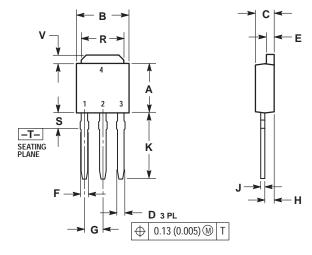
 2. CONTROLLING DIMENSION: INCH.
- 2. OUTMOLEUS DIMENSION, INCL.
 3. DIMENSION D DOES NOT INCLUDE
 INTERCONNECT BAR (DAMBAR) PROTRUSION.
 DIMENSION D INCLUDING PROTRUSION SHALL
 NOT EXCEED 10.92 (0.043) MAXIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.572	0.613	14.529	15.570
В	0.390	0.415	9.906	10.541
С	0.170	0.180	4.318	4.572
D	0.025	0.038	0.635	0.965
Ε	0.048	0.055	1.219	1.397
G	0.067 BSC		1.702 BSC	
Н	0.087	0.112	2.210	2.845
J	0.015	0.025	0.381	0.635
K	1.020	1.065	25.908	27.051
L	0.320	0.365	8.128	9.271
Q	0.140	0.153	3.556	3.886
U	0.105	0.117	2.667	2.972
S	0.543	0.582	13.792	14.783

DT-1 SUFFIX CASE 369-07 Plastic Package

(DPAK) ISSUE K





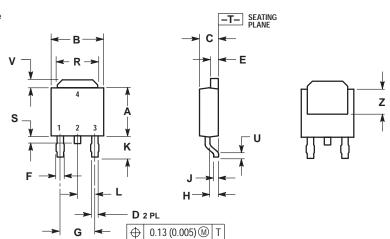
- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.235	0.250	5.97	6.35
В	0.250	0.265	6.35	6.73
С	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
Е	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
G	0.090	BSC	2.29 BSC	
Н	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.350	0.380	8.89	9.65
R	0.175	0.215	4.45	5.46
S	0.050	0.090	1.27	2.28
V	0.030	0.050	0.77	1.27

DT SUFFIX CASE 369A-13

Plastic Package (DPAK) **ISSUE** Y

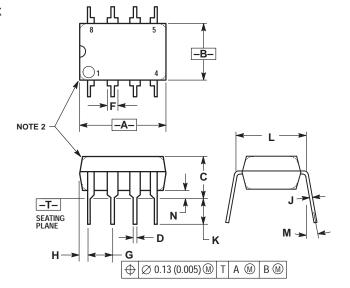




- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.235	0.250	5.97	6.35
В	0.250	0.265	6.35	6.73
С	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
Ε	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
G	0.180 BSC		4.58 BSC	
Н	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090 BSC		2.29 BSC	
R	0.175	0.215	4.45	5.46
S	0.020	0.050	0.51	1.27
U	0.020		0.51	
٧	0.030	0.050	0.77	1.27
Z	0.138		3.51	





- NOTES:
 1. DIMENSION L TO CENTER OF LEAD WHEN
- FORMED PARALLEL.

 2. PACKAGE CONTOUR OPTIONAL (ROUND OR
- SQUARE CORNERS).

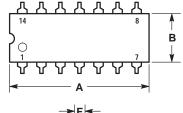
 3. DIMENSIONING AND TOLERANCING PER ANSI

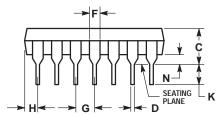
	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	9.40	10.16	0.370	0.400
В	6.10	6.60	0.240	0.260
С	3.94	4.45	0.155	0.175
D	0.38	0.51	0.015	0.020
F	1.02	1.78	0.040	0.070
G	2.54 BSC		0.100 BSC	
Н	0.76	1.27	0.030	0.050
J	0.20	0.30	0.008	0.012
K	2.92	3.43	0.115	0.135
L	7.62 BSC		0.300	BSC
М		10°		10°
N	0.76	1.01	0.030	0.040

N, P, N-14, P2 SUFFIX **CASE 646-06**

Plastic Package ISSUE L









- NOTES: 1. LEADS WITHIN 0.13 (0.005) RADIUS OF TRUE POSITION AT SEATING PLANE AT MAXIMUM MATERIAL CONDITION.

 2. DIMENSION L TO CENTER OF LEADS WHEN
- FORMED PARALLEL.
 3. DIMENSION B DOES NOT INCLUDE MOLD FLASH.
 4. ROUNDED CORNERS OPTIONAL

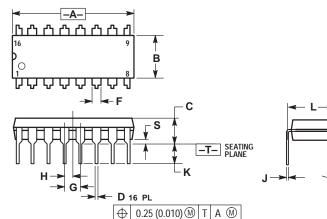
	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.715	0.770	18.16	19.56
В	0.240	0.260	6.10	6.60
С	0.145	0.185	3.69	4.69
D	0.015	0.021	0.38	0.53
F	0.040	0.070	1.02	1.78
G	0.100 BSC		2.54 BSC	
Н	0.052	0.095	1.32	2.41
J	0.008	0.015	0.20	0.38
K	0.115	0.135	2.92	3.43
L	0.300 BSC		7.62	BSC
M	0°	10°	0°	10°
N	0.015	0.039	0.39	1.01

DP2, N, P, PC SUFFIX

CASE 648-08

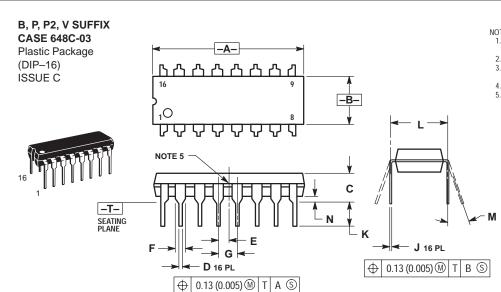
Plastic Package ISSUE R





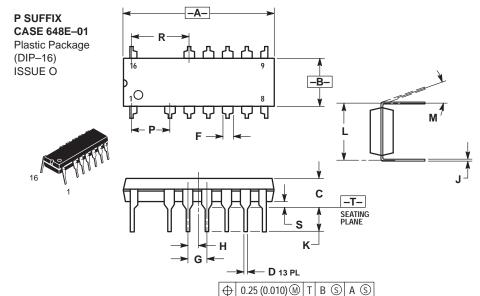
- DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. CONTROLLING DIMENSION: INCH.
- DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
 DIMENSION B DOES NOT INCLUDE MOLD FLASH.
- ROUNDED CORNERS OPTIONAL.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.740	0.770	18.80	19.55
В	0.250	0.270	6.35	6.85
С	0.145	0.175	3.69	4.44
D	0.015	0.021	0.39	0.53
F	0.040	0.70	1.02	1.77
G	0.100 BSC		2.54 BSC	
Н	0.050	BSC	1.27 BSC	
J	0.008	0.015	0.21	0.38
K	0.110	0.130	2.80	3.30
L	0.295	0.305	7.50	7.74
M	0°	10 °	0°	10 °
S	0.020	0.040	0.51	1.01



- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. CONTROLLING DIMENSION: INCH.
- DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
- DIMED FARALLEL.
 DIMENSION B DOES NOT INCLUDE MOLD FLASH.
 INTERNAL LEAD CONNECTION BETWEEN 4 AND 5, 12 AND 13.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.740	0.840	18.80	21.34
В	0.240	0.260	6.10	6.60
С	0.145	0.185	3.69	4.69
D	0.015	0.021	0.38	0.53
Ε	0.050 BSC		1.27 BSC	
F	0.040	0.70	1.02	1.78
G	0.100 BSC		2.54 BSC	
J	0.008	0.015	0.20	0.38
K	0.115	0.135	2.92	3.43
L	0.300 BSC		7.62	BSC
M	0°	10°	0°	10°
N	0.015	0.040	0.39	1.01

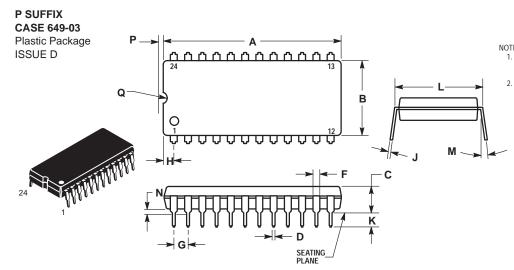


- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
- 4. DIMENSION A AND B DOES NOT INCLUDE MOLD
- PROTRUSION.

 5. MOLD FLASH OR PROTRUSIONS SHALL NOT
- EXCEED 0.25 (0.010).

 6. ROUNDED CORNER OPTIONAL.

DIM MIN MAX MIN MAX A 0.740 0.760 18.80 19.30 B 0.245 0.260 6.23 6.60 C 0.145 0.175 3.69 4.44 D 0.015 0.021 0.39 0.53 F 0.050 0.070 1.27 1.77 G 0.100 BSC 2.54 BSC H 0.050 BSC 1.27 BSC J 0.008 0.015 0.21 0.38 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0 ° 10° 0 ° 10° 0 ° 10° P 0.200 BSC 5.08 BSC 0.205 BSC 0.005 0.505		INCHES		MILLIN	IETERS
B 0.245 0.260 6.23 6.60 C 0.145 0.175 3.69 4.44 D 0.015 0.021 0.39 0.53 5.005 0.070 1.27 1.77 G 0.100 BSC 2.54 BSC H 0.050 BSC 0.21 0.38 0.53 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0° 10° 0° 10° P 0.200 BSC 5.08 BSC 0.205 5.08 BSC D.0175 0.205 0.2	DIM	MIN	MAX	MIN	MAX
C 0.145 0.175 3.69 4.44 D 0.015 0.021 0.39 0.53 F 0.050 0.070 1.27 1.77 G 0.100 BSC 2.54 BSC H 0.050 BSC 1.27 BSC J 0.008 0.015 0.21 0.38 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0 ° 10 ° 0 ° 10 ° P 0.200 BSC 5.08 BSC	Α	0.740	0.760	18.80	19.30
D 0.015 0.021 0.39 0.53 F 0.050 0.070 1.27 1.77 G 0.100 BSC 2.54 BSC 1.27 BSC H 0.050 BSC 1.27 BSC 3.55 J 0.008 0.015 0.21 0.38 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0 ° 10 ° 0 ° 10 ° P 0.200 BSC 5.08 BSC	В	0.245	0.260	6.23	6.60
F 0.050 0.070 1.27 1.77 G 0.100 BSC 2.54 BSC H 0.050 BSC 1.27 BSC J 0.008 0.015 0.21 0.38 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0° 10° 0° 10° P 0.200 BSC 5.08 BSC	С	0.145	0.175	3.69	4.44
G 0.100 BSC 2.54 BSC H 0.050 BSC 1.27 BSC J 0.008 0.015 0.21 0.38 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0° 10° 0° 10° 0° 10° P 0.200 BSC 5.08 BSC	D	0.015	0.021	0.39	0.53
H	F	0.050	0.070	1.27	1.77
J 0.008 0.015 0.21 0.38 K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0 ° 10° 0 ° 10° P 0.200 BSC 5.08 BSC	G	0.100 BSC		2.54 BSC	
K 0.120 0.140 3.05 3.55 L 0.295 0.305 7.50 7.74 M 0 ° 10 ° 0 ° 10 ° P 0.200 BSC 5.08 BSC	Н	0.050	BSC	1.27 BSC	
L 0.295 0.305 7.50 7.74 M 0 ° 10 ° 0 ° 10 ° P 0.200 BSC 5.08 BSC	J	0.008	0.015	0.21	0.38
M 0° 10° 0° 10° P 0.200 BSC 5.08 BSC	K	0.120	0.140	3.05	3.55
P 0.200 BSC 5.08 BSC	L	0.295	0.305	7.50	7.74
	M	0 °	10°	0 °	10°
	Р	0.200 BSC		5.08	BSC
R 0.300 BSC 7.62 BSC	R	0.300 BSC		7.62	BSC
S 0.015 0.035 0.39 0.88	S	0.015	0.035	0.39	0.88



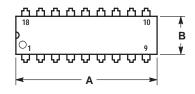
- NOTES:
 1. LEADS WITHIN 0.13 (0.005) RADIUS OF TRUE POSITION AT SEATING PLANE AT MAXIMUM MATERIAL CONDITION.
- 2. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.

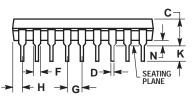
	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	31.50	32.13	1.240	1.265
В	13.21	13.72	0.520	0.540
С	4.70	5.21	0.185	0.205
D	0.38	0.51	0.015	0.020
F	1.02	1.52	0.040	0.060
G	2.54 BSC		0.100 BSC	
Н	1.65	2.16	0.065	0.085
J	0.20	0.30	0.008	0.012
K	2.92	3.43	0.115	0.135
L	14.99	15.49	0.590	0.610
M		10		10°
N	0.51	1.02	0.020	0.040
P	0.13	0.38	0.005	0.015
Q	0.51	0.76	0.020	0.030
Q				

A, B, N, P SUFFIX **CASE 707-02**

Plastic Package ISSUE C









- NOTES:

 1. POSITIONAL TOLERANCE OF LEADS (D), SHALL BE WITHIN 0.25 (0.010) AT MAXIMUM MATERIAL CONDITION, IN RELATION TO SEATING PLANE AND EACH OTHER.

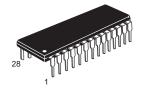
 2. DIMENSION L TO CENTER OF LEADS WHEN FORMER PAPALL IF.
- FORMED PARALLEL.

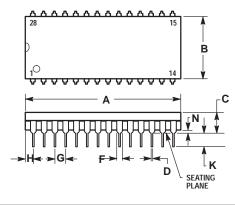
 3. DIMENSION B DOES NOT INCLUDE MOLD

	MILLIMETERS		INCHES		
DIM	MIN	MAX	MIN	MAX	
Α	22.22	23.24	0.875	0.915	
В	6.10	6.60	0.240	0.260	
С	3.56	4.57	0.140	0.180	
D	0.36	0.56	0.014	0.022	
F	1.27	1.78	0.050	0.070	
G	2.54	BSC	0.100	0.100 BSC	
Н	1.02	1.52	0.040	0.060	
J	0.20	0.30	0.008	0.012	
K	2.92	3.43	0.115	0.135	
L	7.62 BSC		0.300	BSC	
М	0 °	15°	0 °	15°	
N	0.51	1.02	0.020	0.040	



Plastic Package ISSUE B







NOTES:

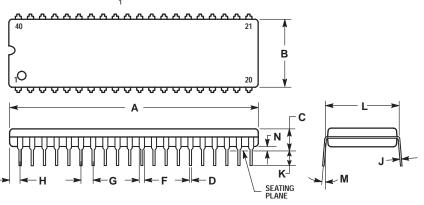
- 1. POSITIONAL TOLERANCE OF LEADS (D), SHALL BE WITHIN 0.25 (0.010) AT MAXIMUM MATERIAL CONDITION, IN RELATION TO SEATING PLANE
- AND EACH OTHER.
 2. DIMENSION L TO CENTER OF LEADS WHEN
- FORMED PARALLEL.

 3. DIMENSION B DOES NOT INCLUDE MOLD FLASH.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	36.45	37.21	1.435	1.465
В	13.72	14.22	0.540	0.560
С	3.94	5.08	0.155	0.200
D	0.36	0.56	0.014	0.022
F	1.02	1.52	0.040	0.060
G	2.54 BSC		0.100 BSC	
Н	1.65	2.16	0.065	0.085
J	0.20	0.38	0.008	0.015
K	2.92	3.43	0.115	0.135
L	15.24 BSC		0.600	BSC
M	0°	15°	0 °	15°
N	0.51	1.02	0.020	0.040



ISSUE C



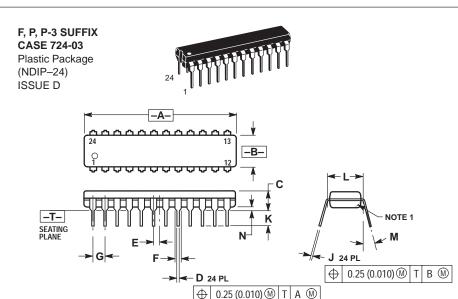
- OTES:

 1. POSITIONAL TOLERANCE OF LEADS (D), SHALL BE WITHIN 0.25 (0.010) AT MAXIMUM MATERIAL CONDITION, IN RELATION TO SEATING PLANE AND EACH OTHER.
- AND EAGH OTHER.

 2. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.

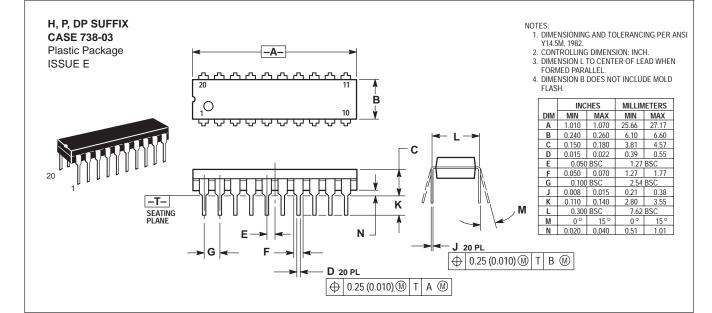
 3. DIMENSION B DOES NOT INCLUDE MOLD FLASH.

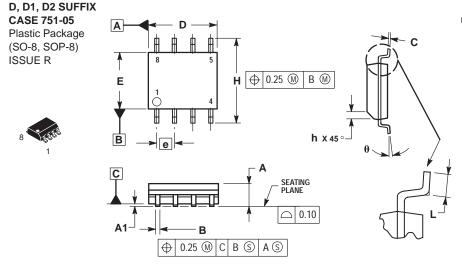
	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	51.69	52.45	2.035	2.065
В	13.72	14.22	0.540	0.560
С	3.94	5.08	0.155	0.200
D	0.36	0.56	0.014	0.022
F	1.02	1.52	0.040	0.060
G	2.54	BSC	0.100 BSC	
Н	1.65	2.16	0.065	0.085
J	0.20	0.38	0.008	0.015
K	2.92	3.43	0.115	0.135
L	15.24	BSC	0.600	BSC
M	0 °	15°	0 °	15°
N	0.51	1.02	0.020	0.040



- CHAMFERED CONTOUR OPTIONAL.
- DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
- 3. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 4. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	1.230	1.265	31.25	32.13
В	0.250	0.270	6.35	6.85
С	0.145	0.175	3.69	4.44
D	0.015	0.020	0.38	0.51
Ε	0.050	BSC	1.27 BSC	
F	0.040	0.060	1.02	1.52
G	0.100) BSC	2.54	BSC
J	0.007	0.012	0.18	0.30
K	0.110	0.140	2.80	3.55
L	0.300 BSC		7.62	BSC
M	0°	15°	0°	15°
N	0.020	0.040	0.51	1.01



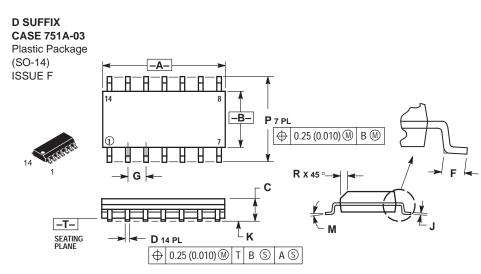


NOTES:

- DIMENSIONING AND TOLERANCING PER ASME Y14.5M. 1994.
- 2. DIMENSIONS ARE IN MILLIMETERS.
- DIMENSION D AND E DO NOT INCLUDE MOLD PROTRUSION.
- MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
- DIMENSION B DOES NOT INCLUDE MOLD PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION SHALL BE 0.127 TOTAL IN EXCESS

OF THE B DIMENSION AT MAXIMUM MATERIAL CONDITION.

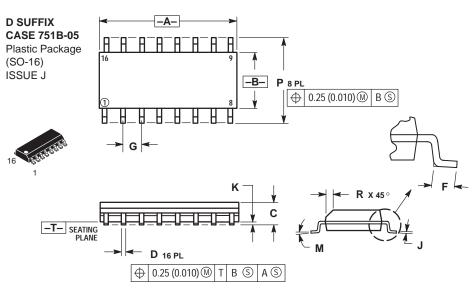
	MILLIMETERS		
DIM	MIN	MAX	
Α	1.35	1.75	
A1	0.10	0.25	
В	0.35	0.49	
С	0.18	0.25	
D	4.80	5.00	
Ε	3.80	4.00	
е	1.27	BSC	
Н	5.80	6.20	
h	0.25	0.50	
L	0.40	1.25	
θ	0 °	7 °	



- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2. CONTROLLING DIMENSION: MILLIMETER.
 3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
 4. MAXIMUM MOLD PROTRUSION 0.15 (0.006)
- PER SIDE.

 5. DIMENSION D DOES NOT INCLUDE DAMBAR
- PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	8.55	8.75	0.337	0.344
В	3.80	4.00	0.150	0.157
С	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27	BSC	0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0 °	7°	0 °	7°
Р	5.80	6.20	0.228	0.244
R	0.25	0.50	0.010	0.019

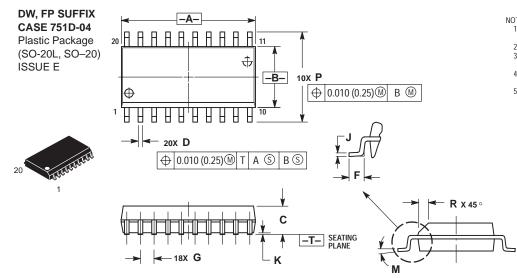


NOTES:

- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14 5M 1982
- CONTROLLING DIMENSION: MILLIMETER.
- DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
- MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
- PER SIDE.

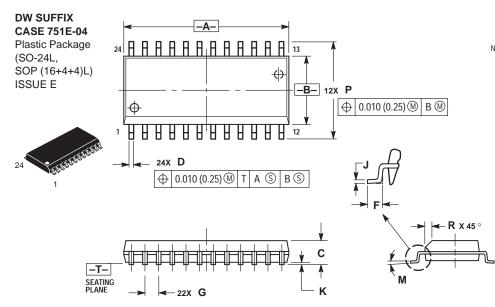
 DIMENSION D DOES NOT INCLUDE DAMBAR
 PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION SHALL BE 0.127 (0.005) TOTAL
 IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	9.80	10.00	0.386	0.393
В	3.80	4.00	0.150	0.157
С	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27	BSC	0.050) BSC
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
М	0°	7°	0°	7°
Р	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019



- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M. 1982.
- CONTROLLING DIMENSION: MILLIMETER. 3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
- 4. MAXIMUM MOLD PROTRUSION 0.150 (0.006) PER SIDE.
- 5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.13 (0.005) TOTAL IN EXCESS OF D DIMENSION AT MAXIMUM MATERIAL CONDITION.

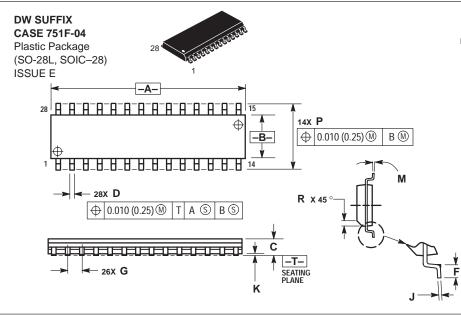
		MILLIMETERS		INCHES	
	DIM	MIN	MAX	MIN	MAX
	Α	12.65	12.95	0.499	0.510
	В	7.40	7.60	0.292	0.299
	С	2.35	2.65	0.093	0.104
	D	0.35	0.49	0.014	0.019
	F	0.50	0.90	0.020	0.035
	G	1.27	BSC	0.050 BSC	
	J	0.25	0.32	0.010	0.012
	K	0.10	0.25	0.004	0.009
	M	0 °	7°	0 °	7°
9	Р	10.05	10.55	0.395	0.415
	R	0.25	0.75	0.010	0.029



- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
 - DIMENSIONS A AND B DO NOT INCLUDE
- MOLD PROTRUSION.
- MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
- 5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION SHALL BE 0.13 (0.005) TOTAL IN EXCESS OF D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	15.25	15.54	0.601	0.612
В	7.40	7.60	0.292	0.299
С	2.35	2.65	0.093	0.104
D	0.35	0.49	0.014	0.019
F	0.41	0.90	0.016	0.035
G	1.27	BSC	0.050 BSC	
J	0.23	0.32	0.009	0.013
K	0.13	0.29	0.005	0.011
M	0°	8°	0°	8°
Р	10.05	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029

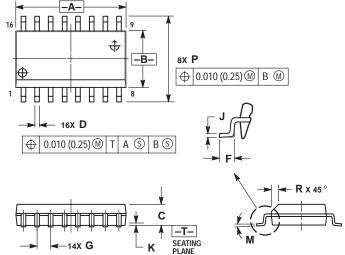


- DIMENSIONING AND TOLERANCING PER
- ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
- DIMENSION A AND B DO NOT INCLUDE
 MOLD PROTRUSION.
- MAXIMUM MOLD PROTRUSION 0.15 (0.006) PFR SIDE
- 5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.13 (0.005) TOTAL IN EXCESS OF D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	17.80	18.05	0.701	0.711
В	7.40	7.60	0.292	0.299
С	2.35	2.65	0.093	0.104
D	0.35	0.49	0.014	0.019
F	0.41	0.90	0.016	0.035
G	1.27	BSC	0.050 BSC	
J	0.23	0.32	0.009	0.013
K	0.13	0.29	0.005	0.011
M	0°	8°	0 °	8 °
Р	10.01	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029
Р	10.01	10.55	0.395	0.415

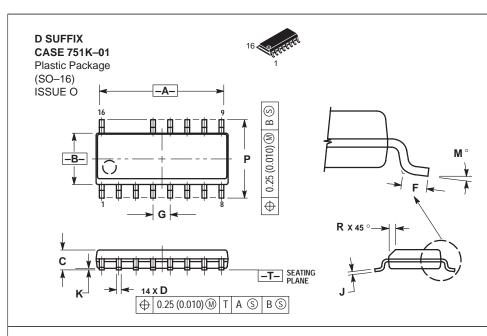






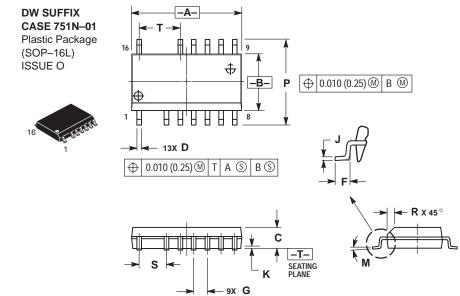
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: MILLIMETER.
 DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
 MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER
- SIDE
- DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.13 (0.005) TOTAL IN EXCESS OF D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	10.15	10.45	0.400	0.411
В	7.40	7.60	0.292	0.299
С	2.35	2.65	0.093	0.104
D	0.35	0.49	0.014	0.019
F	0.50	0.90	0.020	0.035
G	1.27	BSC	0.050 BSC	
J	0.25	0.32	0.010	0.012
K	0.10	0.25	0.004	0.009
M	0 °	7 °	0 °	7 °
P	10.05	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029



- IOLES:
 1 DIMENSIONING AND TOLERANCING PER ANSI
 1714.5M, 1982.
 2 CONTROLLING DIMENSION: MILLIMETER.
 3 DIMENSIONS A AND B DO NOT INCLUDE MOLD
- PROTRUSION.
 4 MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER
- MIMAXIMUM MOLD PROTITOSION 0.15 (0.006) PER SIDE.
 DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM HATERIAL CONDITION. MATERIAL CONDITION.

	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	9.80	10.00	0.368	0.393
В	3.80	4.00	0.150	0.157
С	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27	BSC	0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0 °	7°
Р	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019



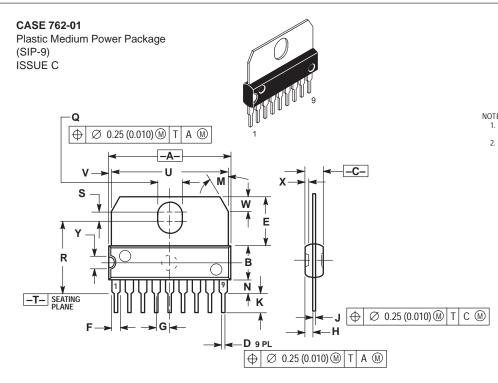
- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

 2. CONTROLLING DIMENSION: MILLIMETER.

 3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER
- SIDE 5. DIMENSION D DOES NOT INCLUDE DAMBAR
- PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION. SHALL BE 0.13 (0.005) TOTAL IN
 EXCESS OF D DIMENSION AT MAXIMUM
 MATERIAL CONDITION.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	10.15	10.45	0.400	0.411
В	7.40	7.60	0.292	0.299
С	2.35	2.65	0.093	0.104
D	0.35	0.49	0.014	0.019
F	0.50	0.90	0.020	0.035
G	1.27	BSC	0.050 BSC	
J	0.25	0.32	0.010	0.012
K	0.10	0.25	0.004	0.009
M	0 °	7 °	0 °	7 °
Р	10.05	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029
S	2.54 BSC		0.100 BSC	
T	3.81	BSC	0.150	BSC



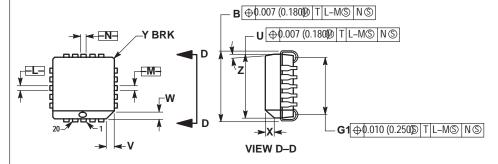
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	22.40	23.00	0.873	0.897
В	6.40	6.60	0.252	0.260
С	3.45	3.65	0.135	1.143
D	0.40	0.55	0.015	0.021
Ε	9.35	9.60	0.368	0.377
F	1.40	1.60	0.055	0.062
G	2.54	BSC	0.100	BSC
Н	1.51	1.71	0.059	0.067
J	0.360	0.400	0.014	0.015
K	3.95	4.20	0.155	0.165
M	30°	BSC	30°BSC	
N	2.50	2.70	0.099	0.106
Q	3.15	3.45	0.124	0.135
R	13.60	13.90	0.535	0.547
S	1.65	1.95	0.064	0.076
U	22.00	22.20	0.866	0.874
٧	0.55	0.75	0.021	0.029
W	2.89 BSC		0.113	BSC
Х	0.65	0.75	0.025	0.029
Υ	2.70	2.80	0.106	0.110



Plastic Package (PLCC-20) **ISSUE C**







- 1. DATUMS -L-, -M-, AND -N- DETERMINED
 WHERE TOP OF LEAD SHOULDER EXITS PLASTIC
- WHERE TO UP LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.

 2. DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM —T—, SEATING PLANE.

 3. DIMENSIONS R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
- 4. DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. 5. CONTROLLING DIMENSION: INCH.
- 6. THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
- 7. DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

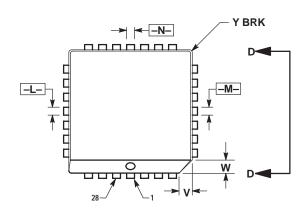
A ⊕ 0.007 (0.1800) T L-MS N S R ⊕ 0.007 (0.1800) T L-MS N S	_
C	H ⊕0.007 (0.1800) T L-MS NS
G1	' → F ⊕0.007 (0.180) T L-MS NS VIEW S

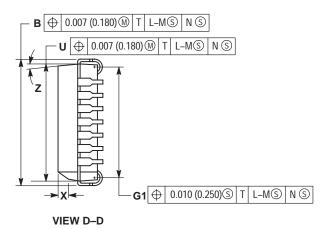
	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.385	0.395	9.78	10.03
В	0.385	0.395	9.78	10.03
С	0.165	0.180	4.20	4.57
Ε	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050	BSC	1.27	BSC
Н	0.026	0.032	0.66	0.81
J	0.020		0.51	
K	0.025		0.64	
R	0.350	0.356	8.89	9.04
U	0.350	0.356	8.89	9.04
٧	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
Х	0.042	0.056	1.07	1.42
Υ		0.020		0.50
Z	2°	10 °	2 °	10 °
G1	0.310	0.330	7.88	8.38
K1	0.040		1.02	

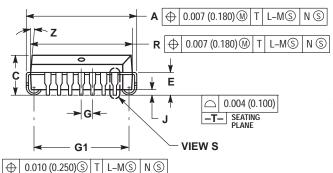
FN SUFFIX CASE 776-02

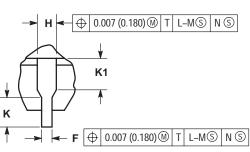
Plastic Package (PLCC-28) ISSUE D











NOTES

- IOTES:

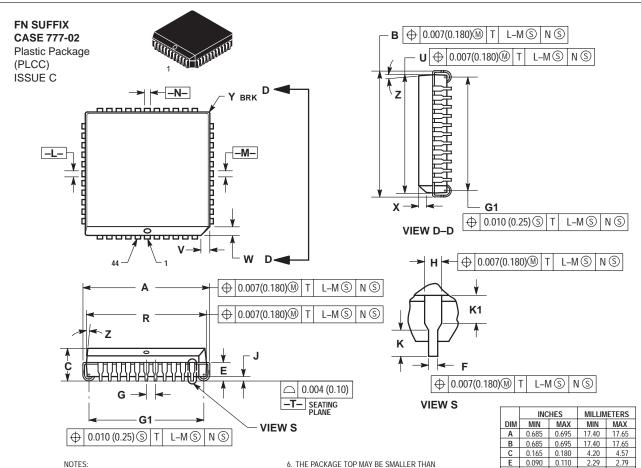
 1. DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.

 2. DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.

 3. DIMENSIONS R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS ORD AS OF SERS IN STANDARD TO THE MOLD FLASH IS
- 0.010 (0.250) PER SIDE.
 4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 5. CONTROLLING DIMENSION: INCH.
- THE PACKAGE TOP MAY BE SMALLER THAN
 THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
 DIMENSION H DOES NOT INCLUDE DAMBAR
- PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.485	0.495	12.32	12.57
В	0.485	0.495	12.32	12.57
С	0.165	0.180	4.20	4.57
Ε	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050	BSC	1.27	BSC
Н	0.026	0.032	0.66	0.81
J	0.020		0.51	
K	0.025		0.64	
R	0.450	0.456	11.43	11.58
U	0.450	0.456	11.43	11.58
٧	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
Χ	0.042	0.056	1.07	1.42
Υ		0.020		0.50
Z	2°	10°	2 °	10°
G1	0.410	0.430	10.42	10.92
K1	0.040		1.02	

VIEW S



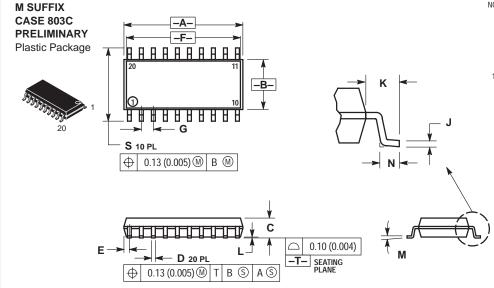
- OLES.

 1. DATUMS -L-, -M-, AND -N- ARE DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.

 2. DIMENSION G1, TRUE POSITION TO BE
- MEASURED AT DATUM -T-, SEATING PLANE.

 3. DIMENSIONS R AND U DO NOT INCLUDE MOLD
- FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.25) PFR SIDE.
- 4. DIMENSIONING AND TOLERANCING PER ANSI Y14 5M 1982
- 5. CONTROLLING DIMENSION: INCH.
- 6. THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY
- DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

	IIVC	IILO	IVIILLIIV	ILILKS
DIM	MIN	MAX	MIN	MAX
Α	0.685	0.695	17.40	17.65
В	0.685	0.695	17.40	17.65
С	0.165	0.180	4.20	4.57
Ε	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050	BSC	1.27	BSC
Н	0.026	0.032	0.66	0.81
J	0.020		0.51	
K	0.025		0.64	
R	0.650	0.656	16.51	16.66
U	0.650	0.656	16.51	16.66
٧	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
Х	0.042	0.056	1.07	1.42
Υ		0.020		0.50
Z	2°	10°	2°	10°
G1	0.610	0.630	15.50	16.00
K1	0.040		1.02	

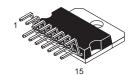


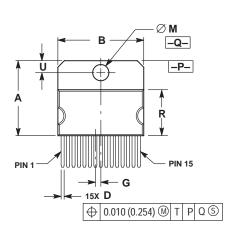
- 6 DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. CONTROLLING DIMENSION: MILLIMETER.
- 8 DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
- 9 MAXIMUM MOLD PROTRUSION 0.15 (0.008) PER SIDE
- 10 DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.13 (0.006) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

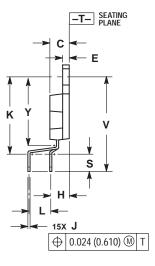
	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	12.35	12.80	0.486	0.504
В	5.10	5.45	0.201	0.215
С	1.95	2.05	0.077	0.081
D	0.35	0.50	0.014	0.020
Ε		0.81		0.032
F	12.	40*	0.488*	
G	1.15	1.39	0.045	0.055
Н	0.59	0.81	0.023	0.032
J	0.18	0.27	0.007	0.011
K	1.10	1.50	0.043	0.059
L	0.05	0.20	0.001	0.008
M	0°	10°	0°	10°
N	0.50	0.85	0.020	0.033
S	7.40	8.20	0.291	0.323

*APPROXIMATE

TV SUFFIX CASE 821C-04 Plastic Package (15-Pin ZIP) ISSUE D







NOTES:

- OTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14,5M, 1982.

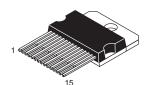
 2. CONTROLLING DIMENSION: INCH.

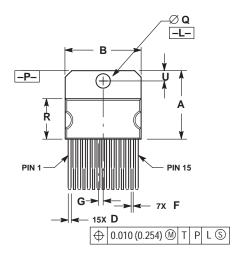
 3. DIMENSION R DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

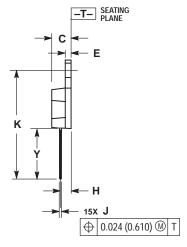
- OR PROTRUSIONS.
 4. DIMENSION B DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS.
 5. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.010 (0.250).
 6. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.003 (0.076) TOTAL IN EXCESS OF THE D DIMENSION. AT MAXIMUM MATERIAL CONDITION.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.684	0.694	17.374	17.627
В	0.784	0.792	19.914	20.116
С	0.173	0.181	4.395	4.597
D	0.024	0.031	0.610	0.787
Ε	0.058	0.062	1.473	1.574
G	0.050 BSC		1.270 BSC	
Н	0.169	BSC	4.293 BSC	
J	0.018	0.024	0.458	0.609
K	0.700	0.710	17.780	18.034
L	0.200	BSC	5.080 BSC	
M	0.148	0.151	3.760	3.835
R	0.416	0.426	10.567	10.820
S	0.157	0.167	3.988	4.242
U	0.105	0.115	2.667	2.921
V	0.868	REF	22.04	7 REF
Υ	0.625	0.639	15.875	16.231

T SUFFIX **CASE 821D-03** Plastic Package ISSUE C







- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 114.3WI, 1962.

 C CONTROLLING DIMENSION: INCH.

 DIMENSION R DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

 DIMENSION B DOES NOT INCLUDE MOLD FLASH

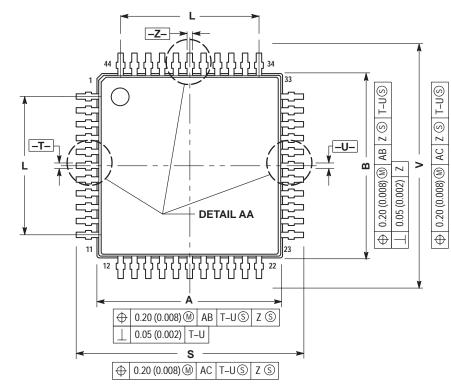
 DIMENSION B DOES NOT INCLUDE MOLD FLASH
- OR PROTRUSIONS.

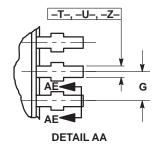
 5. MOLD FLASH OR PROTRUSIONS SHALL NOT
- EXCEED 0.010 (0.250).
- 6. DELETED
- 7. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.003 (0.076) TOTAL IN EXCESS OF THE D DIMENSION. AT MAXIMUM MATERIAL CONDITION.

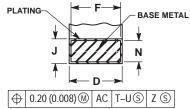
	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.681	0.694	17.298	17.627
В	0.784	0.792	19.914	20.116
С	0.173	0.181	4.395	4.597
D	0.024	0.031	0.610	0.787
Е	0.058	0.062	1.473	1.574
F	0.016	0.023	0.407	0.584
G	0.050	BSC	1.270 BSC	
Н	0.110	BSC	2.794 BSC	
J	0.018	0.024	0.458	0.609
K	1.078	1.086	27.382	27.584
Q	0.148	0.151	3.760	3.835
R	0.416	0.426	10.567	10.820
U	0.110 BSC		2.794 BSC	
Υ	0.503	REF	12.77	6 REF

FTB SUFFIX CASE 824D-01 Plastic Package (TQFP-44) ISSUE O









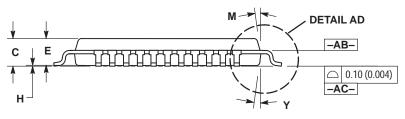
SECTION AE-AE

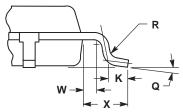
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: MILLIMETER.
- DATUM PLANE -AB- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.

 4. DATUMS -T-, -U- AND -Z- TO BE DETERMINED AT DATUM PLANE -AB-.
- 5. DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -AC-.

 6. DIMENSIONS A AND B DO NOT INCLUDE MOLD
- PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 (0.010) PER SIDE. DIMENSIONS A AND B DO (U) 10) PER SIDE. DIMENSIONS A AND B DU INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE -AB-. 7. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. DAMBAR PROTRUSION SHALL NOT
- CAUSE THE D DIMENSION TO EXCEED 0.530 (0.021).

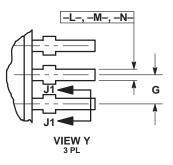
	MILLIN	METERS	INCHES	
DIM	MIN	MAX	MIN	MAX
Α	9.950	10.050	0.392	0.396
В	9.950	10.050	0.392	0.396
С	1.400	1.600	0.055	0.063
D	0.300	0.450	0.012	0.018
Ε	1.350	1.450	0.053	0.057
F	0.300	0.400	0.012	0.016
G	0.800	BSC	0.031	BSC
Н	0.050	0.150	0.002	0.006
J	0.090	0.200	0.004	0.008
K	0.450	0.550	0.018	0.022
L	8.000	BSC	0.315 BSC	
M	12°	REF	12°REF	
N	0.090	0.160	0.004	0.006
Q	1°	5°	1°	5°
R	0.100	0.200	0.004	0.008
S	11.900	12.100	0.469	0.476
٧	11.900	12.100	0.469	0.476
W	0.200 REF		0.008 REF	
Х	1.000	REF	0.039	REF
Υ	12°	REF	12°	REF

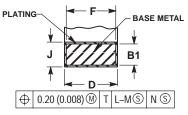




VIEW AD

FB SUFFIX CASE 824E-02 Plastic Package (QFP) ISSUE A S ⊕ 0.20 (0.008) M T L-MS N S 0.20 (0.008) M H L-MS N S 0.05 (0.002) L-M PIN 1 IDENT S N S N SM-1 L-MS -L-工 Ω 0.20 (0.008) 🚳 0.05 (0.002) **VIEW Y** \oplus G 40X --N-VIEW P **-H**- DATUM PLANE ☐ 0.01 (0.004) _T_ R **R1** DATUM -H-**R R2** VIEW P





SECTION J1-J1 44 PL

NOTES:

0.20 (0.008) 🕪

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- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2. CONTROLLING DIMENSION: MILLIMETER.
 3. DATUM PLANE -H- IS LOCATED AT BOTTOM OF
- LEAD AND IS COINCIDENT WITH THE LEAD

- LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.

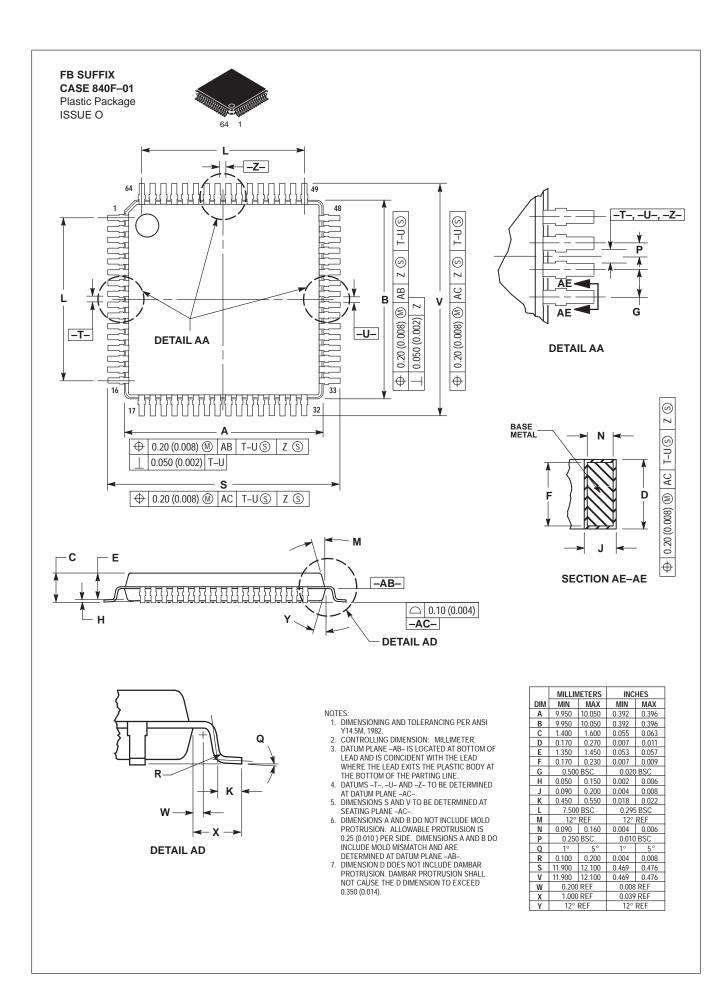
 4. DATUMS -L-, -M- AND -N- TO BE DETERMINED AT DATUM PLANE -H-.

 5. DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -T-.

 6. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 (0.010) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PI ANF -H-DETERMINED AT DATUM PLANE -H-.

 7. DIMENSION D DOES NOT INCLUDE DAMBAR
- PROTRUSION. DAMBAR PROTRUSION SHALL NOT CAUSE THE D DIMENSION TO EXCEED

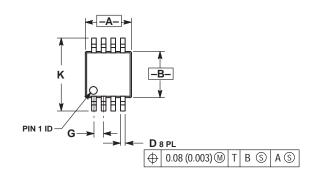
	MILLIN	IETERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α	9.90	10.10	0.390	0.398
В	9.90	10.10	0.390	0.398
С	2.00	2.21	0.079	0.087
D	0.30	0.45	0.0118	0.0177
E	2.00	2.10	0.079	0.083
F	0.30	0.40	0.012	0.016
G	0.80	BSC	0.031	BSC
J	0.13	0.23	0.005	0.009
K	0.65	0.95	0.026	0.037
M	5°	10°	5°	10°
S	12.95	13.45	0.510	0.530
٧	12.95	13.45	0.510	0.530
W	0.000	0.210	0.000	0.008
Υ	5°	10 °	5°	10°
A1	0.450	REF	0.018	REF
B1	0.130	0.170	0.005	0.007
C1	1.600	REF	0.063	REF
R1	0.130	0.300	0.005	0.012
R2	0.130	0.300	0.005	0.012
θ1	5°	10 °	5°	10°
θ2	0°	7°	0°	7°

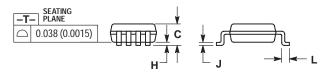


DM SUFFIX CASE 846A-02

Plastic Package (Micro-8) **ÌSSUE** C





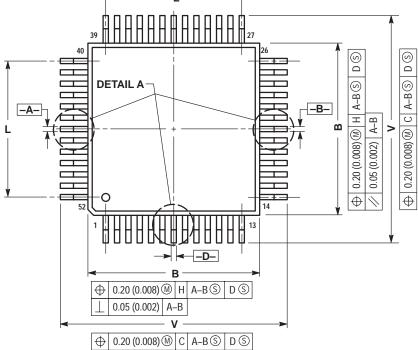


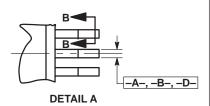
- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
 3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
 4. DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.

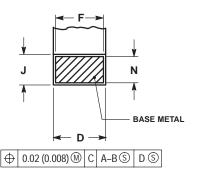
	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	2.90	3.10	0.114	0.122
В	2.90	3.10	0.114	0.122
С		1.10		0.043
D	0.25	0.40	0.010	0.016
G	0.65	BSC	0.026 BSC	
Н	0.05	0.15	0.002	0.006
J	0.13	0.23	0.005	0.009
K	4.75	5.05	0.187	0.199
L	0.40	0.70	0.016	0.028

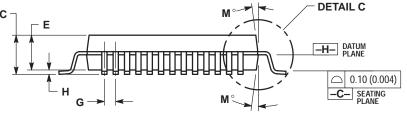
FB SUFFIX CASE 848B-04 Plastic Package (TQFP-52) **ISSUE** C -A-



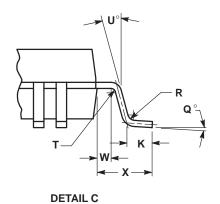










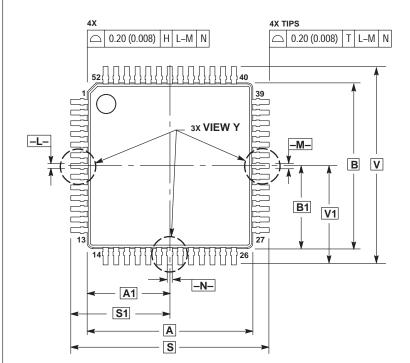


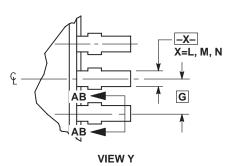
- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. 2. CONTROLLING DIMENSION: MILLIMETER.
- DATUM PLANE -H- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.
- 4. DATUMS -A-, -B- AND -D- TO BE DETERMINED AT DATUM PLANE -H-.
- DATUM PLANE -H-.
 5. DIMENSIONS S AND V TO BE DETERMINED AT
 SEATING PLANE -C-.
 6. DIMENSIONS A AND B DO NOT INCLUDE MOLD
 PROTRUSION. ALLOWABLE PROTRUSION IS 0.25
 (0.010) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE -H-.
- DIMENSION D DOES NOT INCLUDE DAMBAR
 PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE D
 DIMENSION AT MAXIMUM MATERIAL CONDITION. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT.

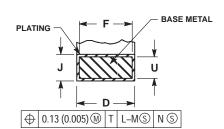
	MILLIN	METERS	INCHES	
DIM	MIN	MAX	MIN	MAX
Α	9.90	10.10	0.390	0.398
В	9.90	10.10	0.390	0.398
С	2.10	2.45	0.083	0.096
D	0.22	0.38	0.009	0.015
Ε	2.00	2.10	0.079	0.083
F	0.22	0.33	0.009	0.013
G	0.65	BSC	0.026	BSC
Н		0.25		0.010
J	0.13	0.23	0.005	0.009
K	0.65	0.95	0.026	0.037
Г	7.80	REF	0.307 REF	
M	5°	10°	5°	10°
N	0.13	0.17	0.005	0.007
О	0°	7°	0 °	7°
R	0.13	0.30	0.005	0.012
S	12.95	13.45	0.510	0.530
Т	0.13		0.005	
C	0°		0°	
٧	12.95	13.45	0.510	0.530
W	0.35	0.45	0.014	0.018
Х	1.6	REF	0.063	REF



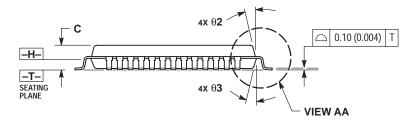


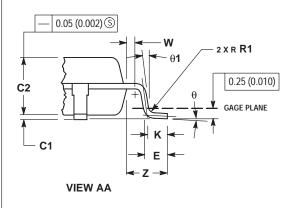






SECTION AB-AB ROTATED 90° CLOCKWISE





- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

 2. CONTROLLING DIMENSION: MILLIMETER.

 3. DATUM PLANE -H- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.

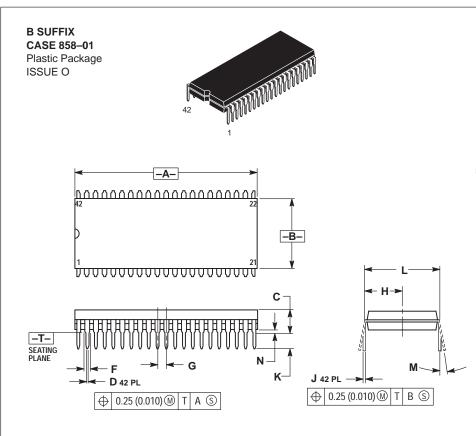
 4. DATUMS -L-, -M- AND -N- TO BE DETERMINED AT DATUM PLANE -H-.

 5. DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -T-.

 6. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 (0.010) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE

 - INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE -H-.
 - 7. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. DAMBAR PROTRUSION SHALL NOT CAUSE THE LEAD WIDTH TO EXCEED 0.46 (0.018). MINIMUM SPACE BETWEEN PROTRUSION AND ADJACENT LEAD OR PROTRUSION 0.07 (0.003).

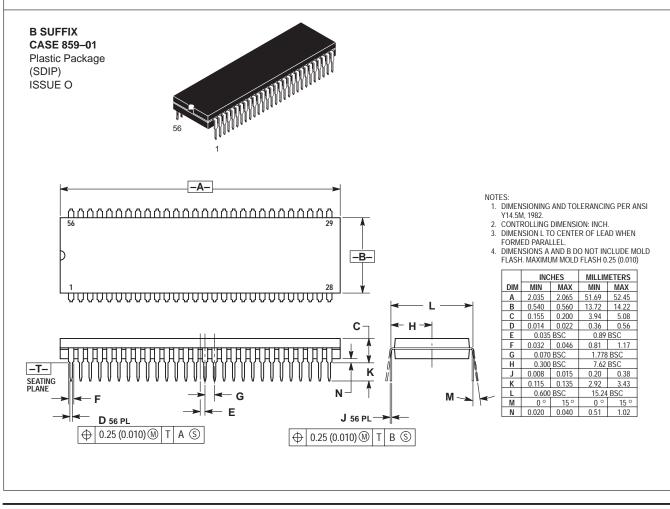
	MILLIN	IETERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α	10.00	BSC	0.394	BSC
A1	5.00	BSC	0.197	BSC
В	10.00	BSC	0.394	BSC
B1	5.00	BSC	0.197	BSC
С		1.70		0.067
C1	0.05	0.20	0.002	0.008
C2	1.30	1.50	0.051	0.059
D	0.20	0.40	0.008	0.016
Ε	0.45	0.75	0.018	0.030
F	0.22	0.35	0.009	0.014
G	0.65	BSC	0.026 BSC	
J	0.07	0.20	0.003	0.008
K	0.50	REF	0.020 REF	
R1	0.08	0.20	0.003	0.008
S	12.00	BSC	0.472	BSC
S1	6.00	BSC	0.236 BSC	
U	0.09	0.16	0.004	0.006
٧	12.00	BSC	0.472 BSC	
V1	6.00	BSC	0.236 BSC	
W	0.20	REF	0.008 REF	
Z	1.00 REF			REF
θ	0°	7°	0°	7°
θ1	0°		0°	
θ2	12°	REF	12 °	
θ3	5°	13°	5°	13°

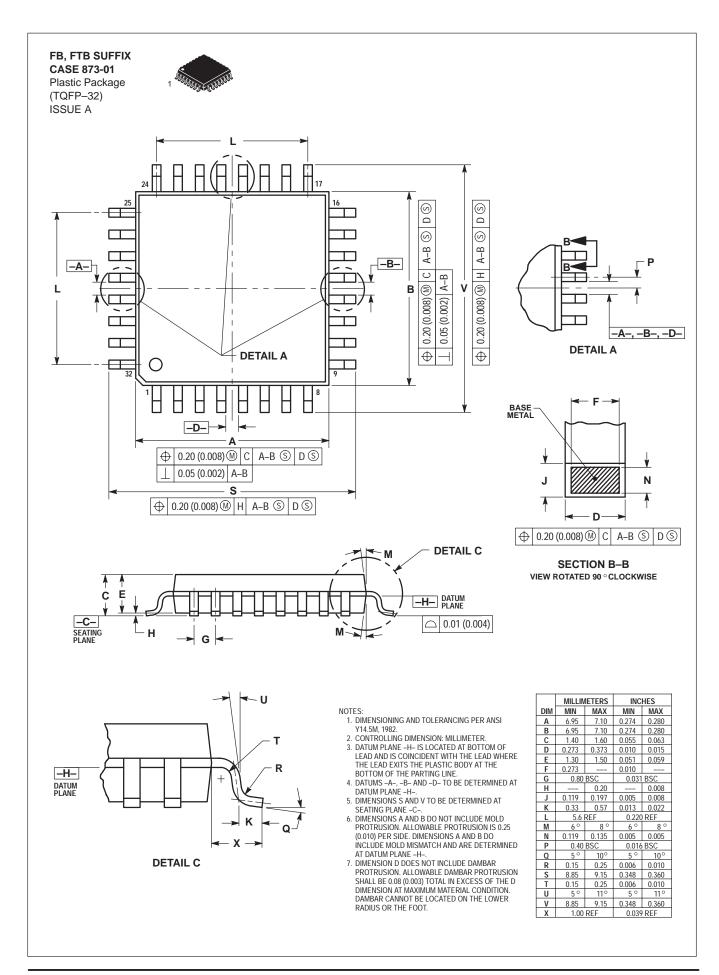


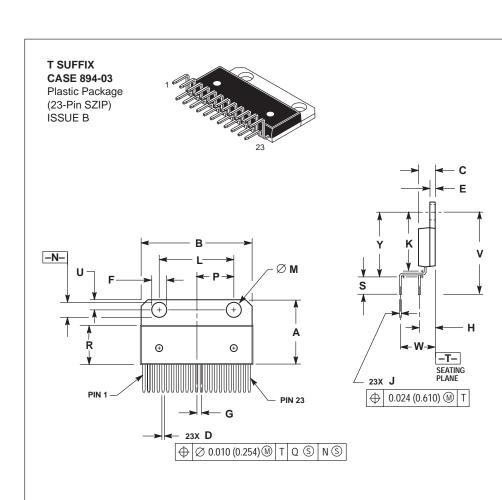
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
 DIMENSION L TO CENTER OF LEAD WHEN
- FORMED PARALLEL.

 4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH. MAXIMUM MOLD FLASH 0.25 (0.010).

	INC	HES	MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	1.435	1.465	36.45	37.21
В	0.540	0.560	13.72	14.22
С	0.155	0.200	3.94	5.08
D	0.014	0.022	0.36	0.56
F	0.032	0.046	0.81	1.17
G	0.070	BSC	1.778 BSC	
Н	0.300	BSC	7.62 BSC	
J	0.008	0.015	0.20	0.38
K	0.115	0.135	2.92	3.43
L	0.600 BSC		15.24	BSC
M	0 °	15 °	0 °	15 °
N	0.020	0.040	0.51	1.02







- NOTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

 2. CONTROLLING DIMENSION: INCH.

 3. DIMENSION R DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

 4. DIMENSION B DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

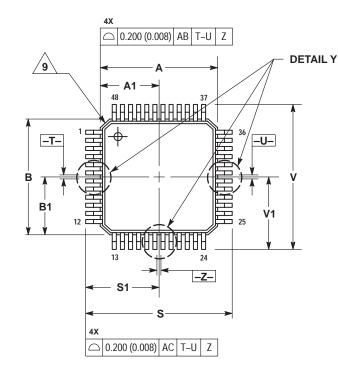
 5. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.010 (0.250).

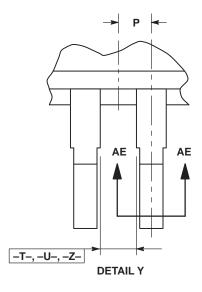
 6. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL BE 0.003 (0.076) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION. CONDITION.

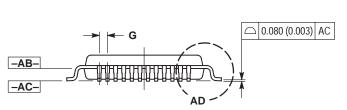
	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.684	0.694	17.374	17.627
В	1.183	1.193	30.048	30.302
С	0.175	0.179	4.445	4.547
D	0.026	0.031	0.660	0.787
Ε	0.058	0.062	1.473	1.574
F	0.165	0.175	4.191	4.445
G	0.050	BSC	1.270	BSC
Н	0.169	BSC	4.293 BSC	
J	0.014	0.020	0.356	0.508
K	0.625	0.639	15.875	16.231
L	0.770	0.790	19.558	20.066
M	0.148	0.152	3.760	3.861
N	0.148	0.152	3.760	3.861
P	0.390	BSC	9.906	BSC
R	0.416	0.424	10.566	10.770
S	0.157	0.167	3.988	4.242
U	0.105	0.115	2.667	2.921
٧	0.868 REF		22.04	7 REF
W	0.200	BSC	5.080	BSC
Υ	0.700	0.710	17.780	18.034

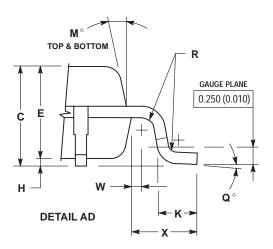
FTA SUFFIX CASE 932-02 Plastic Package (TQFP-48) **ISSUE** D

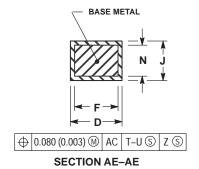












- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
- 2. CONTROLLING DIMENSION: MILLIME LEX.
 3. DATUM PLANE -AB- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.

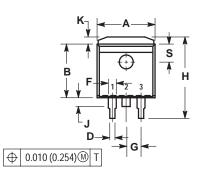
 4. DATUMS -T-, -U-, AND -Z- TO BE DETERMINED AT DATUM PLANE -AB-.
- 5. DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -AC-.
- 6. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.250 (0.010) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE
- DETERMINED AT DATUM PLANE -AB-.

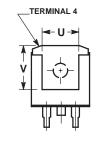
 7. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. DAMBAR PROTRUSION SHALL NOT CAUSE THE D DIMENSION TO EXCEED 0.350 (0.014).
- 8. MINIMUM SOLDER PLATE THICKNESS SHALL BE 0.0076 (0.0003).
- 9. EXACT SHAPE OF EACH CORNER IS OPTIONAL

	MILLIN	METERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α	7.000	BSC	0.276	BSC
A1	3.500	BSC	0.138	BSC
В	7.000	BSC	0.276	BSC
B1	3.500	BSC	0.138	BSC
С	1.400	1.600	0.055	0.063
D	0.170	0.270	0.007	0.011
Ε	1.350	1.450	0.053	0.057
F	0.170	0.230	0.007	0.009
G	0.500	BASIC	0.020 BASIC	
Н	0.050	0.150	0.002	0.006
J	0.090	0.200	0.004	0.008
K	0.500	0.700	0.020	0.028
M	12°	REF	12 °REF	
N	0.090	0.160	0.004	0.006
Р	0.250	BASIC	0.010 BASIC	
Q	1°	5°	1°	5°
R	0.150	0.250	0.006	0.010
S	9.000	BSC	0.354	BSC
S1	4.500 BSC		0.177 BSC	
٧	9.000 BSC		0.354 BSC	
V1	4.500 BSC		0.177 BSC	
W	0.200	REF	0.008	REF
Х	1.000	REF	0.039	REF

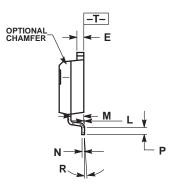












- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI
- 714.5M, 1982.

 2. CONTROLLING DIMENSION: INCH.

 3. TAB CONTOUR OPTIONAL WITHIN DIMENSIONS A AND K.
- A AND K.

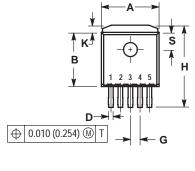
 4. DIMENSIONS U AND V ESTABLISH A MINIMUM MOUNTING SURFACE FOR TERMINAL 4.

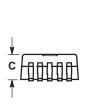
 5. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH OR GATE PROTRUSIONS. MOLD FLASH AND GATE PROTRUSIONS NOT TO EXCEED 0.025 (0.635) MAXIMUM.

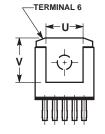
	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.386	0.403	9.804	10.236
В	0.356	0.368	9.042	9.347
С	0.170	0.180	4.318	4.572
D	0.026	0.036	0.660	0.914
E	0.045	0.055	1.143	1.397
F	0.051	REF	1.295	REF
G	0.100	BSC	2.540 BSC	
Н	0.539	0.579	13.691	14.707
J	0.125	MAX	3.175 MAX	
K	0.050	REF	1.270 REF	
L	0.000	0.010	0.000	0.254
M	0.088	0.102	2.235	2.591
N	0.018	0.026	0.457	0.660
Р	0.058	0.078	1.473	1.981
R	5°REF		5° REF	
S	0.116 REF		2.946	REF
U	0.200	MIN	5.080	MIN
٧	0.250	MIN	6.350 MIN	

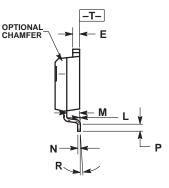
D2T SUFFIX CASE 936A-02 Plastic Package (D^2PAK) **ISSUE** A





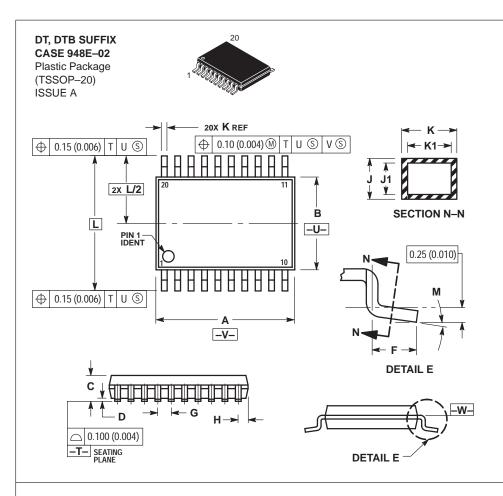






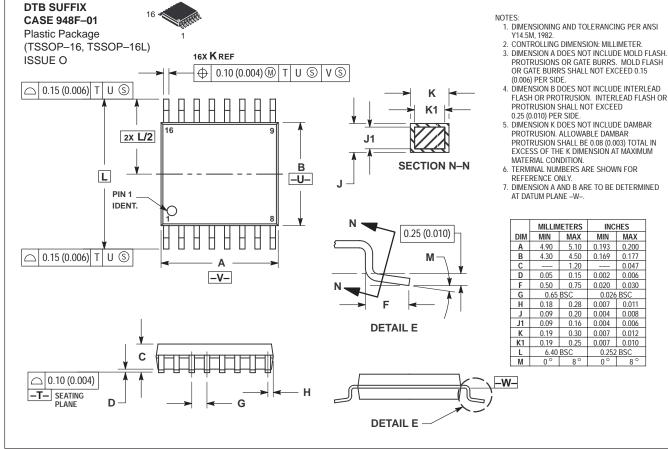
- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. TAB CONTOUR OPTIONAL WITHIN DIMENSIONS A AND K.
 4. DIMENSIONS U AND V ESTABLISH A MINIMUM MOUNTING SURFACE FOR TERMINAL 6.
 5. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH OR GATE PROTRUSIONS. MOLD FLASH AND GATE PROTRUSIONS NOT TO EXCEED 0.025 (0.635) MAXIMUM. 0.025 (0.635) MAXIMUM.

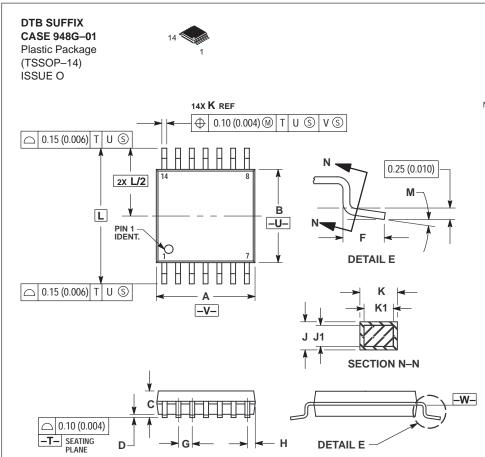
	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.386	0.403	9.804	10.236	
В	0.356	0.368	9.042	9.347	
С	0.170	0.180	4.318	4.572	
D	0.026	0.036	0.660	0.914	
Ε	0.045	0.055	1.143	1.397	
G	0.067	BSC	1.702 BSC		
Н	0.539	0.579	13.691	14.707	
K	0.050	REF	1.270 REF		
L	0.000	0.010	0.000	0.254	
M	0.088	0.102	2.235	2.591	
N	0.018	0.026	0.457	0.660	
Р	0.058	0.078	1.473	1.981	
R	5 ° F	5°REF		REF	
S	0.116	REF	2.946	REF	
U	0.200	0.200 MIN		5.080 MIN	
V	0.250	MIN	6.350	MIN	



- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: MILLIMETER.
- 3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PFR SIDE
- DIMENSION B DOES NOT INCLUDE INTERLEAD
 FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE
- 5. DIMENSION K DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE K DIMENSION AT MAXIMUM MATERIAL CONDITION.
- TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
- 7. DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE -W-

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	6.40	6.60	0.252	0.260
В	4.30	4.50	0.169	0.177
С		1.20		0.047
D	0.05	0.15	0.002	0.006
F	0.50	0.75	0.020	0.030
G	0.65	BSC	0.026 BSC	
Н	0.27	0.37	0.011	0.015
J	0.09	0.20	0.004	0.008
J1	0.09	0.16	0.004	0.006
K	0.19	0.30	0.007	0.012
K1	0.19	0.25	0.007	0.010
L	6.40 BSC		0.252	BSC
M	0°	8°	0°	8°





- 1 DIMENSIONING AND TOLERANCING PER ANSI
- Thim ensuring and Tolerancing per ansi y14.5M, 1982.
 CONTROLLING DIMENSION: MILLIMETER.
 DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
- (U.UU6) PER SIDE.

 4 DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED

 0.25 (0.010) PER SIDE.
- 0.25 (0.010) PER SIDE.

 5 DIMENSION X DOES NOT INCLUDE DAMBAR
 PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN
 EXCESS OF THE K DIMENSION AT MAXIMUM
 MATERIAL CONDITION.

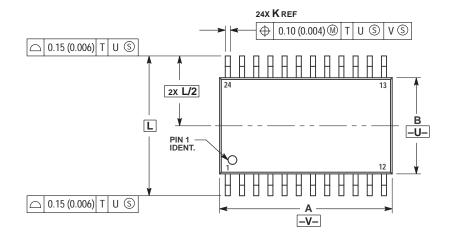
 6 TERMINAL NUMBERS ARE SHOWN FOR
 DEEDEDING ONLY.
- TERMINAL NOMBERS ARE SHOWN FOR REFERENCE ONLY.

 DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE –W–.

	MILLIMETERS		INC	HES	
DIM	MIN	MAX	MIN	MAX	
Α	4.90	5.10	0.193	0.200	
В	4.30	4.50	0.169	0.177	
С		1.20		0.047	
D	0.05	0.15	0.002	0.006	
F	0.50	0.75	0.020	0.030	
G	0.65	BSC	0.026	0.026 BSC	
Н	0.50	0.60	0.020	0.024	
J	0.09	0.20	0.004	0.008	
J1	0.09	0.16	0.004	0.006	
K	0.19	0.30	0.007	0.012	
K1	0.19	0.25	0.007	0.010	
L	6.40		0.252	BSC	
M	0.0	8°	0.0	80	

DTB SUFFIX CASE 948H-01 Plastic Package ISSUE O





- OTES:

 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

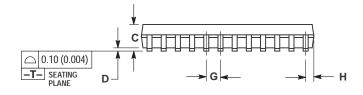
 2. CONTROLLING DIMENSION: MILLIMETER.

 3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15

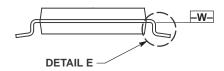
 (0.006) PER SIDE.
- (U.000) PER SIDE.

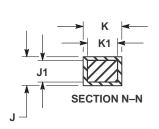
 4. DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.
- 5. DIMENSION K DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION. ALLOWABLE DAMBAR
 PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN
 EXCESS OF THE K DIMENSION AT MAXIMUM
 MATERIAL CONDITION.
 6. TERMINAL NUMBERS ARE SHOWN FOR
 DETERMINAL NUMBERS ARE SHOWN FOR
- REFERENCE ONLY.

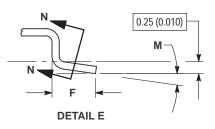
 7. DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE –W–.



	MILLIN	IETERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α	7.70	7.90	0.303	0.311
В	4.30	4.50	0.169	0.177
С		1.20		0.047
D	0.05	0.15	0.002	0.006
F	0.50	0.75	0.020	0.030
G	0.65	BSC	0.026 BSC	
Н	0.27	0.37	0.011	0.015
J	0.09	0.20	0.004	0.008
J1	0.09	0.16	0.004	0.006
K	0.19	0.30	0.007	0.012
K1	0.19	0.25	0.007	0.010
L	6.40	BSC	0.252	BSC
M	0°	8°	0°	8°

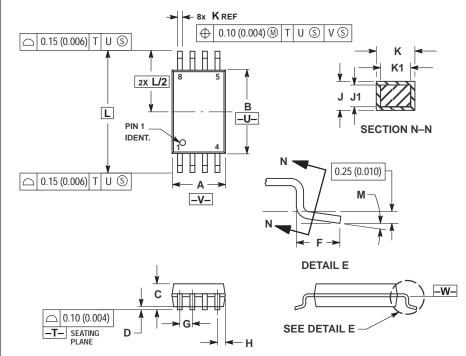






DTB SUFFIX CASE 948J-01 Plastic Package (TSSOP-8) **ISSUE** O





NOTES:

- 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2 CONTROLLING DIMENSION: MILLIMETER.
- 3 DIMENSION A DOES NOT INCLUDE MOLD FLASH. PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
- DIMENSION B DOES NOT INCLUDE INTERLEAD
 FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010)
 PER SIDE.
- 5 DIMENSION K DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE K DIMENSION AT MAXIMUM MATERIAL CONDITION.
 6 TERMINAL NUMBERS ARE SHOWN FOR
- REFERENCE ONLY.

 7 DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE –W–.

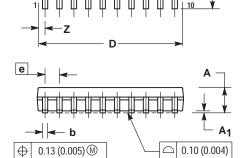
	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	2.90	3.10	0.114	0.122
В	4.30	4.50	0.169	0.177
С		1.20		0.047
D	0.05	0.15	0.002	0.006
F	0.50	0.75	0.020	0.030
G	0.65	BSC	0.026 BSC	
Н	0.50	0.60	0.020	0.024
J	0.09	0.20	0.004	0.008
J1	0.09	0.16	0.004	0.006
K	0.19	0.30	0.007	0.012
K1	0.19	0.25	0.007	0.010
L	6.40 BSC		0.252	BSC
M	0°	8°	0°	8°

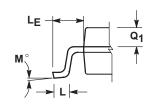


(EIAJ-20) ISSUE O



Ė HE





DETAIL P

VIEW P

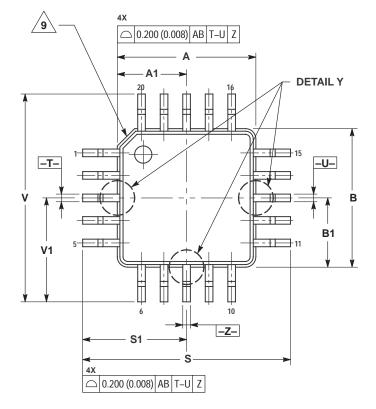
- NOTES:
 1 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 - CONTROLLING DIMENSION: MILLIMETER.
- 3 DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS AND ARE MEASURED AT THE PARTING LINE. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.

 4 TERMINAL NUMBERS ARE SHOWN FOR
- TERMINAL NOMBERS ARE SHOWN FOR REFERENCE ONLY.
 THE LEAD WIDTH DIMENSION (b) DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE LEAD WIDTH DIMENSION AT MAXIMUM MATERIAL CONDITION.
 DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT. MINIMUM SPACE BETWEEN PROTRUSIONS AND ADJACENT LEAD TO BE 0.46 (0.018).

	MILLIN	METERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α		2.05		0.081
Α ₁	0.05	0.20	0.002	0.008
b	0.35	0.50	0.014	0.020
С	0.18	0.27	0.007	0.011
D	12.35	12.80	0.486	0.504
Ε	5.10	5.45	0.201	0.215
е	1.27	BSC	0.050 BSC	
HE	7.40	8.20	0.291	0.323
L	0.50	0.85	0.020	0.033
L_F	1.10	1.50	0.043	0.059
M	0 °	10°	0 °	10 °
Q ₁	0.70	0.90	0.028	0.035
Z		0.81		0.032

FTB SUFFIX CASE 976-01 Plastic Package (TQFP-20) **ISSUE** O





- OTES.
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
- 2. CONTROLLING DIMENSION, MICHIETER.
 3. DATUM PLANE -AB- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT
- THE BOTTOM OF THE PARTING LINE.

 4. DATUMS -T-, -U-, AND -Z- TO BE DETERMINED AT DATUM PLANE -AB-.

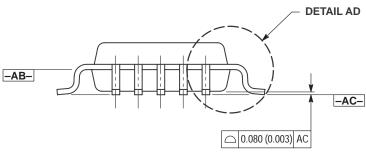
 5. DIMENSIONS S AND V TO BE DETERMINED AT
- DIMENSIONS 2 AND VIO BE DETERMINED AT DATUM PLANE ACC.

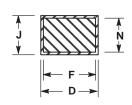
 DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.250 (0.010) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE
- DETERMINED AT DATUM PLANE -AB.

 7. DIMENSION D DOES NOT INCLUDE DAMBAR
 PROTRUSION. DAMBAR PROTRUSION SHALL
 NOT CAUSE THE D DIMENSION TO EXCEED
- 0.350 (0.014). 8. MINIMUM SOLDER PLATE THICKNESS SHALL BE 0.0076 (0.0003).

 9. EXACT SHAPE OF EACH CORNER IS OPTIONAL

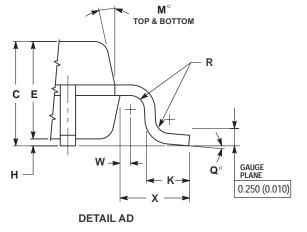
	MILLIN	IETERS	INCHES	
DIM	MIN	MAX	MIN	MAX
Α	4.000	BSC	0.157	BSC
A1	2.000	BSC	0.079	BSC
В	4.000	BSC	0.157	BSC
B1	2.000	BSC	0.079	BSC
С	1.400	1.600	0.055	0.063
D	0.170	0.270	0.007	0.011
E	1.350	1.450	0.053	0.057
F	0.170	0.230	0.007	0.009
G	0.650	BSC	0.026 BSC	
Н	0.050	0.150	0.002	0.006
J	0.090	0.200	0.004	0.008
K	0.500	0.700	0.020	0.028
M	12°	REF	12 °REF	
N	0.090	0.160	0.004	0.006
P	0.250	BSC	0.010 BSC	
Q	1°	5°	1°	5°
R	0.150	0.250	0.006	0.010
S	6.000	BSC	0.236	BSC
S1	3.000 BSC		0.118	BSC
V	6.000 BSC		0.236 BSC	
V1	3.000	BSC	0.118	BSC
W	0.200	REF	0.008	REF
Х	1.000	REF	0.039	REF

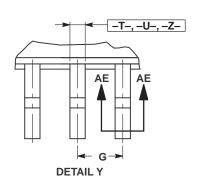






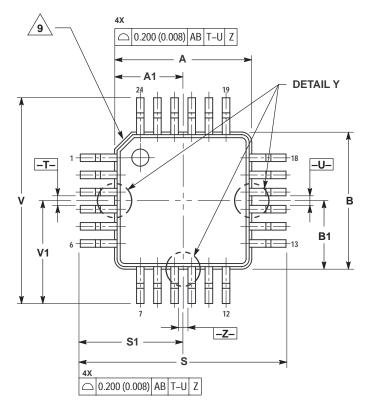
SECTION AE-AE





FTA SUFFIX CASE 977-01 Plastic Package ISSUE O





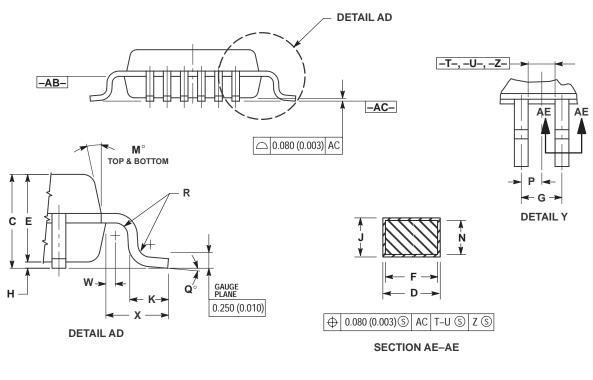
- DIMENSIONING AND TOLERANCING PER ANSI
- Y14.5M, 1982. 2. CONTROLLING DIMENSION: MILLIMETER.
- 2. CONTROLLING DIMENSION: MILLIMETER.
 3. DATUM PLANE -AB- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.

 4. DATUMS -T-, -U-, AND -Z- TO BE DETERMINED AT DATUM PLANE -AB-.
- DATION TERMS—AD—.
 DIMENSIONS S AND V TO BE DETERMINED AT DATUM PLANE –AC—.
- DATUM PLANE -AC-.
 6. DIMENSIONS A AND B DO NOT INCLUDE MOLD
 PROTRUSION. ALLOWABLE PROTRUSION IS
 0.250 (0.010) PER SIDE. DIMENSIONS A AND B
 DO INCLUDE MOLD MISMATCH AND ARE
 DETERMINED AT DATUM PLANE -AB-.
 7. DIMENSION D DOES NOT INCLUDE DAMBAR
 PROTRUSION. DAMBAR PROTRUSION SHALL
 MOT CAUSE THE D. DIMENSION DE SYCEED.
- PROTIROSION. DAWBAR PROTIROSION SHALL NOT CAUSE THE D DIMENSION TO EXCEED 0.350 (0.014).

 8. MINIMUM SOLDER PLATE THICKNESS SHALL BE 0.0076 (0.0003).

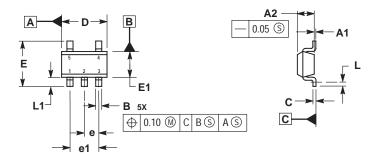
 9. EXACT SHAPE OF EACH CORNER IS OPTIONAL.

	MILLIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
Α	4.000	BSC	0.157	BSC
A1	2.000	BSC	0.079	BSC
В	4.000	BSC	0.157	BSC
B1	2.000	BSC	0.079	BSC
С	1.400	1.600	0.055	0.063
D	0.170	0.270	0.007	0.011
E	1.350	1.450	0.053	0.057
F	0.170	0.230	0.007	0.009
G	0.500	BSC	0.020 BSC	
Н	0.050	0.150	0.002	0.006
J	0.090	0.200	0.004	0.008
K	0.500	0.700	0.020	0.028
M	12°	REF	12 °REF	
N	0.090	0.160	0.004	0.006
P		BSC	0.010 BSC	
Q	1°	5°	1°	5°
R	0.150	0.250	0.006	0.010
S	6.000	BSC	0.236 BSC	
S1	3.000	BSC	0.118	BSC
V	6.000 BSC		0.236	BSC
V1	3.000	BSC	0.118	BSC
W	0.200	REF	0.008	REF
Х	1.000	REF	0.039	REF









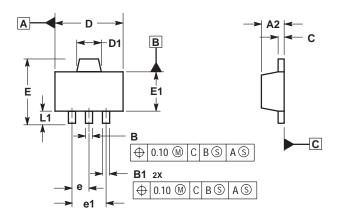
- IOTES:

 1. DIMENSIONS ARE IN MILLIMETERS.
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
 3. DATUM C IS A SEATING PLANE.

	MILLIMETERS	
DIM	MIN	MAX
A1	0.00	0.10
A2	1.00	1.30
В	0.30	0.50
С	0.10	0.25
D	2.80	3.00
Ε	2.50	3.10
E1	1.50	1.80
е	0.95 BSC	
e1	1.90 BSC	
L	0.20	
L1	0.45	0.75



Plastic Package (SOT-89) ISSUE O



- NOTES:
 1. DIMENSIONS ARE IN MILLIMETERS.
 2. INTERPRET DIMENSIONS AND TOLERANCING PER ASME Y14.5M, 1994.
 3. DATUM C IS A SEATING PLANE.

	MILLIMETERS		
DIM	MIN	MAX	
A2	1.40	1.60	
В	0.37	0.57	
B1	0.32	0.52	
С	0.30	0.50	
D	4.40	4.60	
D1	1.50	1.70	
Ε		4.25	
E1	2.40	2.60	
е	1.50 BSC		
e1	3.00 BSC		
11	0.80		