

Version 0.09 - Jun. 30, 2020



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#### **Revision History:**

Revision	Date	Description
0.01	2014/05/20	1st version
		<ol> <li>Add front cover, page header and revise page footer.</li> <li>Add revision history.</li> </ol>
0.02	2016/08/02	Add description"(0.635mm)" of package type for Y: SSOP on page 3 and drawings.
0.02	2010/00/02	4. Add page 4: QFN/DFN package marking information.
		5. Add "note" on page 5.
		6. Add 3 package outline drawings: QFN4*4-16, QFN3*3-16 and DFN3*3-10 on page 12~14.
0.03	2016/08/04	Revise description of bonding information for PMS132-1J16A example on page 4.
	2017/11/03	Add package type of M: MSOP on page 3.
0.04		2. Add package type of H: HTSOP on page 3 and package outline drawing on
		page8.
		Add package outline drawing of SOT23-6 on page 6.
0.05	2018/11/01	2. Add package outline drawing of SOP8 on page 7.
		Add Table of contents and revise all pages
0.06	2019/03/27	2. Add package outline drawing of DFN2*2-8 on page 26.
		Add package outline drawing of ESSOP10 on page 27
0.07	2019/06/13	Revise all pages
0.08	2020/04/10	1. Revise 2.23 DFN2*2-8 "D2&E2".
0.09	2020/06/30	1. Add 2.22 QFN4*4-24.
0.09	2020/06/30	2. Amend Section 2.24 DFN2*2-8 :L,E2,D2



#### 1. Package Marking Information

1.1. MSOP/SOP/SSOP/DIP/HTSOP/SOT23/TSSOP Package Marking Information

**MSOP10 (118mil)** 

PPPPPPP yywwVXA SSOP16 (150mil)

PPPPPPPPPPPQLLSSSSSS yywwVXA

SOP/ SSOP20 (150mil) SOP/ DIP (300mil)



Standard Legend										
PPPP	PADA	PADAUK's part name (Ex:PMC251)								
	Package type									
Q	S:	D:	K:	L:	T:	Y:	U:	M:	H:	E:
	SOP	DIP	Skinny	LQFP	TSSOP	SSOP	SOT23	MSOP	HTSOP	Exposed
			DIP							Pad
	Pin Count									
LL	Ex:	SS	OP16-	→Y16	SOP	20→S2	20 S	OT23-6-	→U06	
	Lot n	Lot number information								
	EX : TG42199H1→421991									
SSS	EX : TGD8231→823		→8231A0 EX : TGD3579-R1→3579A1							
	A: Project									
V	Vender code									
X	Prod	Product code								



#### 1.2. QFN / DFN Package Marking Information

QFN DFN





Standard Legend				
PPPP	PADAUK's part name			
QQ	Package type (QFN → J; DFN → N)			
LL	Pin Count			
В	Bonding information (Ex:PMS132-4N10 → PADAUK single type DFN3*3-10 package.  PMS132-1J16A → PADAUK Type A QFN3*3-16 package.)			
уу	Year code (last 2 digits of calendar year)			
ww	Week code			
V	Vender code			
X	Product code			
A	Wafer information			

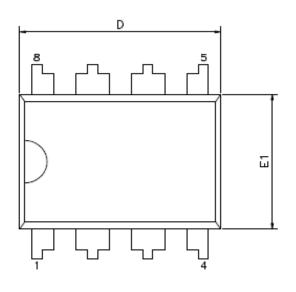
Package size	Number	Package size	Number
QFN 3*3mm	1J	DFN 1.6*1.6mm	1N
QFN 4*4mm	2J	DFN 2*2mm	2N
QFN 5*5mm	3J	DFN 2.4*2.4mm	3N
QFN 6*6mm	4J	DFN 3*3 mm	4N
		DFN 3.5*3.5mm	5N

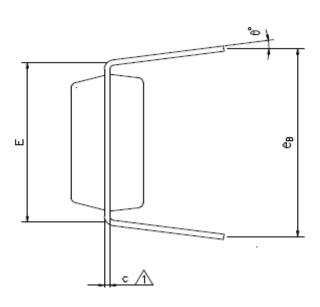


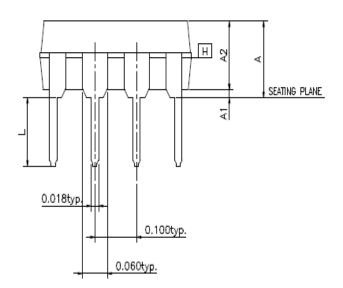
#### 2. Package outline drawing (POD):

The following drawings and dimensions are for reference only

#### 2.1. DIP8(300mil)





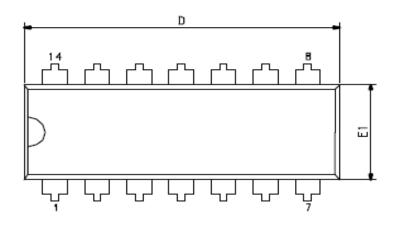


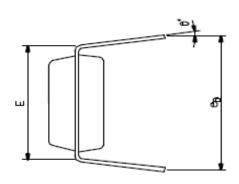
SYMBOLS	MIN	TYP	MAX
Α	1	-	0.210
A1	0.015	-	-
A2	0.125	0.130	0.135
С	0.008	0.010	0.014
D	0.355	0.365	0.400
E	0.300 BSC		
E1	0.245	0.250	0.255
L	0.115	0.130	0.150
e B	0.335	0.355	0.375
θ°	0	7	15

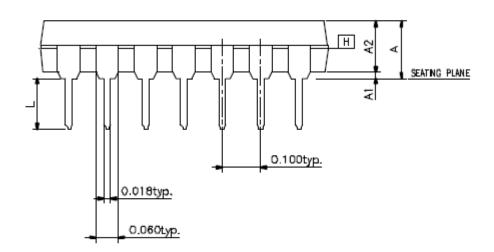


#### 2.2. DIP14(300mil)

Lead of DIP 14 300 mil
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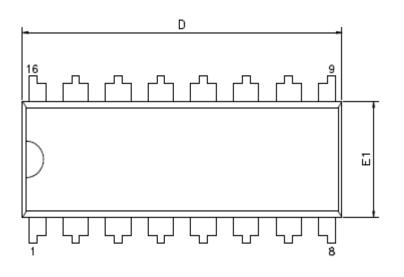


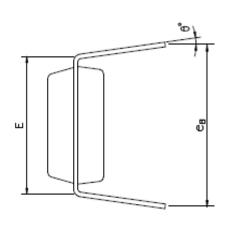
		INCH	
SYMBOLS	MIN	TYP	MAX
Α	-	_	0.21
A1	0.015	_	-
A2	0.125	0.130	0.135
D	0.735	0.750	0.775
E	0.300 BSC		
E1	0.245	0.250	0.255
L	0.115	0.130	0.150
e B	0.335	0.355	0.375
θ°	0	7	15

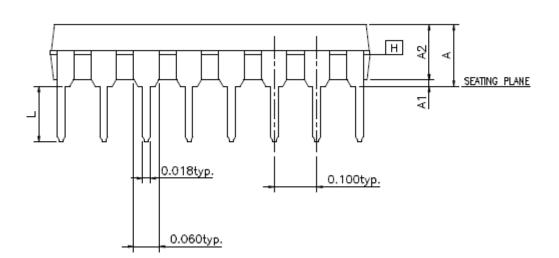


#### 2.3. DIP16(300mil)

Lead of DIP 16	300 mil
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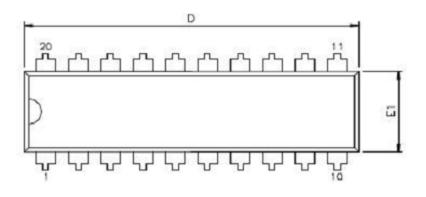


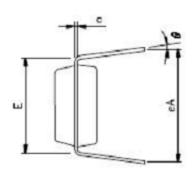
		INCH	
SYMBOLS	MIN	TYP	MAX
Α	-	-	0.172
A1	0.015	_	0.038
A2	0.125	0.130	0.135
D	0.735	0.755	0.775
E	0.300 BSC		
E1	0.245	0.250	0.255
L	0.115	0.130	0.150
e B	0.335	0.355	0.375
θ°	0	7	15

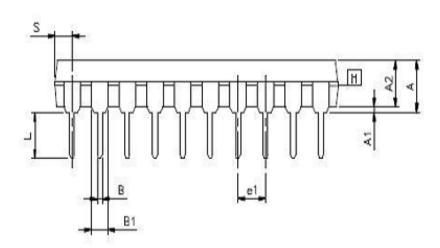


#### 2.4. DIP20(300mil)

Lead of DIP 20	300 mil
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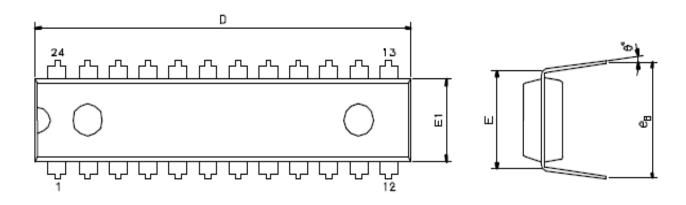


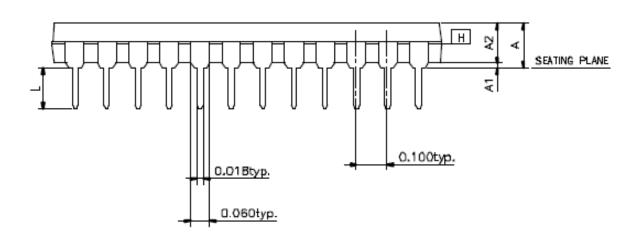
		INCH	
SYMBOLS	MIN	TYP	MAX
Α	ı	-	0.175
A1	0.015	-	-
A2	0.125	0.130	0.135
В	0.016	0.018	0.020
B1	0.058	0.060	0.064
С	0.008	0.010	0.011
D	1.002	1.026	1.040
E	0.290	0.300	0.310
E1	0.245	0.250	0.255
e1	0.090	0.100	0.110
L	0.120	0.130	0.140
θ°	0	-	15
e A	0.335	0.355	0.375
e C	0.000	_	0.06
S	_	_	0.075



#### 2.5. DIP24(300mil)

Lead of Skinny DIP24	300 mil
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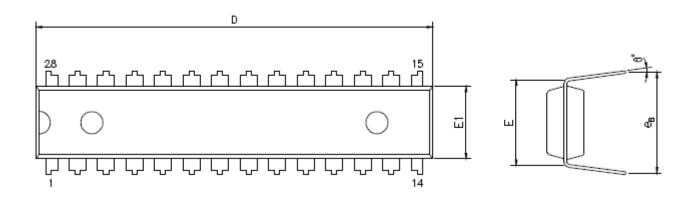


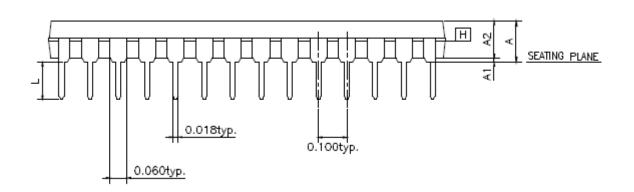
	INCH		
SYMBOLS	MIN	TYP	MAX
Α	ı	_	0.210
A1	0.015	_	-
A2	0.125	0.130	0.135
D	1.230	1.250	1.280
Е	0.300 BSC		
E1	0.253	0.258	0.263
L	0.115	0.130	0.150
e B	0.335	0.355	0.375
θ°	0	7	15



#### 2.6. DIP28(300mil)

Lead of Skinny DIP28	300 mil
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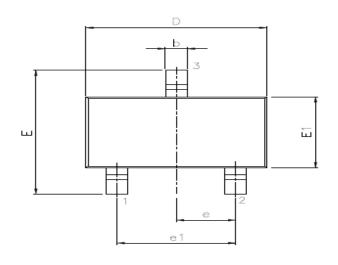


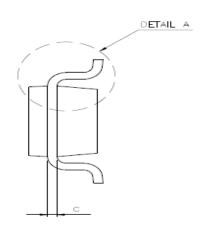
	INCH		
SYMBOLS	MIN	TYP	MAX
Α	ı	_	0.175
A1	0.015	-	-
A2	0.125	0.130	0.135
D	1.385	1.390	1.400
E	0.310 BSC		
E1	0.283	0.288	0.293
L	0.120	0.130	0.140
e B	0.330	0.350	0.370
θ°	0	7	15

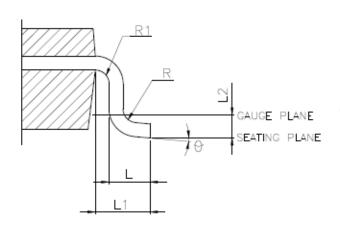


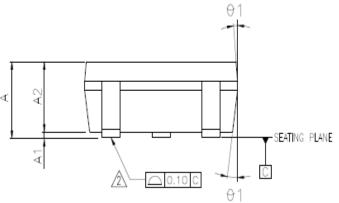
#### 2.7. SOT23-3

# Lead of SOT23-3 Pitch=0.95mm Body width=1.6 mm







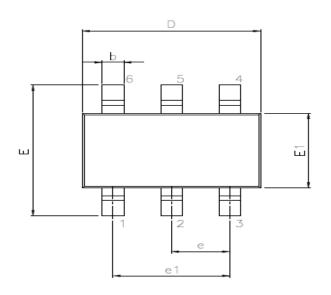


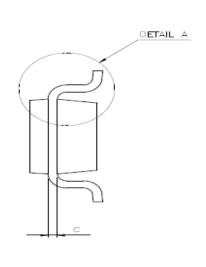
	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	_	_	1.45
A1	0.00	_	0.15
A2	0.90	1.15	1.30
b	0.30	_	0.50
С	0.08	_	0.22
D	2.90 REF		
Е		2.80 REF	
E1	1.60 REF		
e	0.95 REF		
e1	1.90 REF		
L	0.30	0.45	0.60
L1	0.60 REF		
L2	0.25 BSC		
R	0.10	_	-
R1	0.10	_	0.25
θ	0	4	8
$\theta$ 1	5	10	15

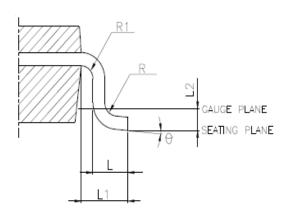


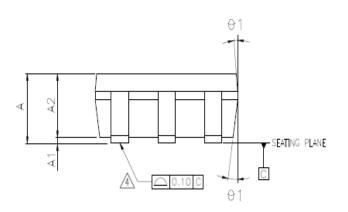
#### 2.8. SOT23-6

# Lead of SOT23-6 Pitch=0.95mm Body width=1.6 mm









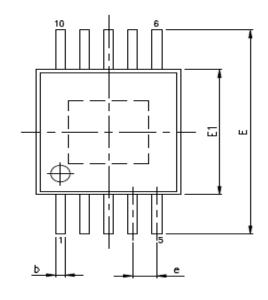
	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	_	_	1.45
A1	0.00	_	0.15
A2	0.90	1.15	1.30
b	0.30	-	0.50
С	0.08	-	0.22
D	2.90 REF		
E	2.80 REF		
E1	1.60 REF		
e	0.95 REF		
e1	1.90 REF		
L	0.30	0.45	0.60
L1	0.60 REF		
L2	0.25 BSC		
R	0.10	_	-
R1	0.10	-	0.25
θ	0	4	8
<i>θ</i> 1	5	10	15

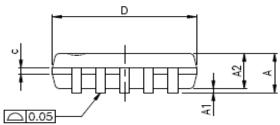


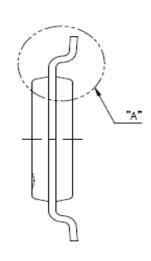
#### 2.9. MSOP10(118mil)

#### Lead of MSOP10

#### Pitch=0.5mm Body width=3 mm=118 mil







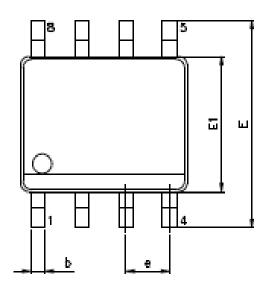
	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	ı	-	1.10
A1	0.00	_	0.15
A2	0.75	0.85	0.95
b	0.17	-	0.27
С	0.08	-	0.23
D	3.00 BSC		
Е	4.90 BSC		
E1	3.00 BSC		
е	0.50 BSC		
L	0.40	0.60	0.80
L1	0.95 REF		
θ°	0	_	8

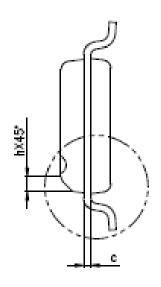


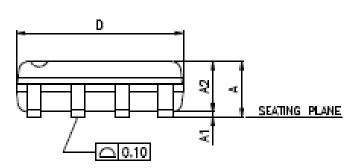
#### 2.10. SOP8(Pitch:1.27mm,Width:150mil)

#### Lead of SOP8

Pitch=1.27 mm=0.05 inch Body width=3.9 mm=150 mil







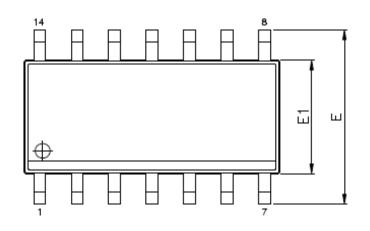
	MILLIMETERS		
SYMBOLS	MIN	MAX	
Α	ı	1.75	
A1	0.10	0.25	
A2	1.25	-	
b	0.31	0.51	
С	0.10	0.25	
D	4.90 BSC		
E	6.00 BSC		
E1	3.90 BSC		
е	1.27 BSC		
L	0.40	1.27	
h	0.25	0.50	
θ°	0	8	

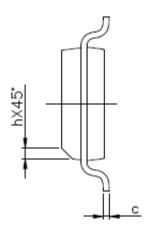


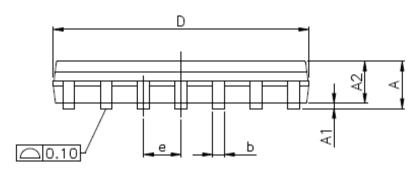
2.11. SOP14(Pitch:1.27mm,Width:150mil)

Lead of SOP14

Pitch=1.27 mm=0.05 inch
Body width=3.9 mm=150 mil=0.15 inch





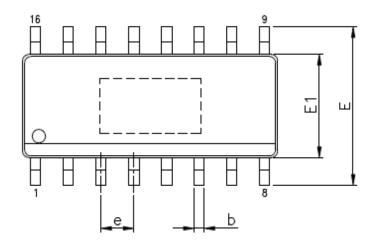


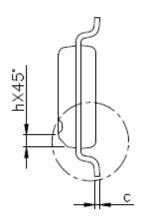
	MILLIMETERS		
SYMBOLS	MIN	MAX	
Α	_	1.75	
A1	0.10	0.25	
A2	1.25	_	
b	0.31	0.51	
С	0.10	0.25	
D	8.65 BSC		
E	6.00 BSC		
E1	3.90 BSC		
е	1.27 BSC		
L	0.40	1.27	
h	0.25	0.50	
θ°	0	8	

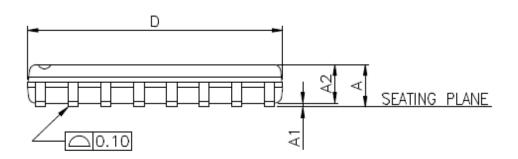


2.12. SOP16(Pitch:1.27mm,Width:150mil)

Lead of SOP16	Pitch=1.27mm=0.05 inch
Lead of SOP 16	Body width=150 mil







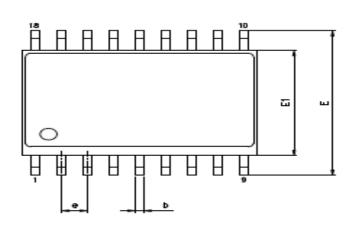
	MILLIMETERS		
SYMBOLS	MIN	MAX	
Α	-	1.75	
A1	0.10	0.25	
A2	1.25	_	
b	0.31	0.51	
С	0.10	0.25	
D	9.90 BSC		
Е	6.00 BSC		
E1	3.90 BSC		
e	1.27 BSC		
L	0.40	1.27	
h	0.25	0.50	
θ°	0	8	

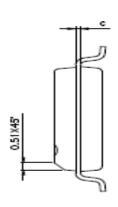


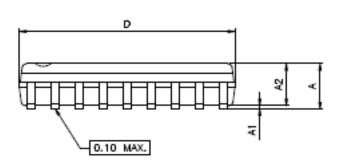
#### 2.13. SOP18(Pitch:1.27mm, Width:300mil)

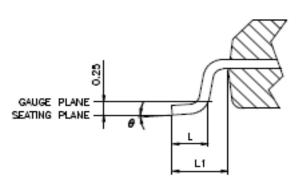
#### Lead of SOP18

#### Pitch=1.27 mm=0.05 inch Body width=300 mil









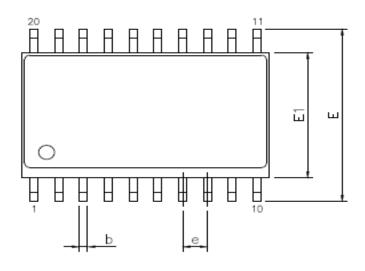
	MILLIMETERS		
SYMBOLS	MIN	MAX	
Α	_	2.65	
A1	0.10	0.30	
A2	2.05	_	
b	0.31	0.51	
С	0.20	0.33	
D	11.55 BSC		
E1	7.50 BSC		
E	10.30 BSC		
e	1.27 BSC		
L1	1.40 REF		
L	0.40	1.27	
θ°	0	8	

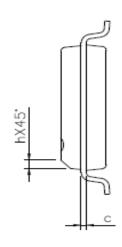


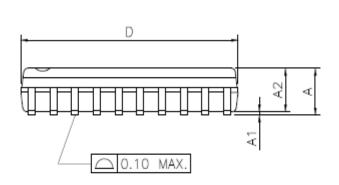
#### 2.14. SOP20(Pitch:1.27mm,Width:300mil)

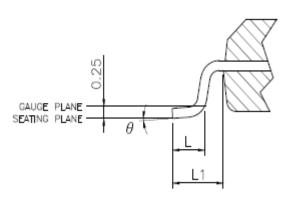
#### Lead of SOP20

#### Pitch=1.27 mm=0.05 inch Body width=300 mil









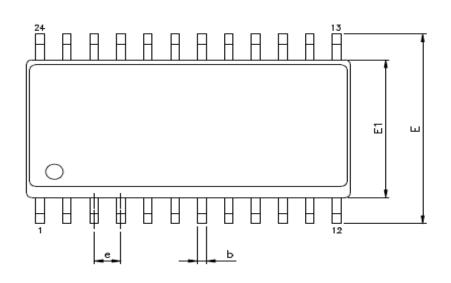
	MILLIMETERS		
SYMBOLS	MIN	MAX	
Α	-	2.65	
A1	0.10	0.30	
A2	2.05		
b	0.31	0.51	
С	0.10	0.33	
D	12.80 BSC		
Е	10.30	BSC	
E1	7.50	BSC	
e	1.27	BSC	
L	0.40	1.27	
L1	1.40 REF		
h	0.25	0.75	
θ°	0	8	

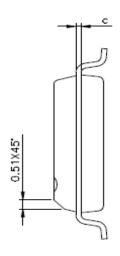


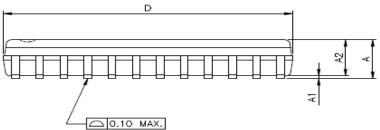
#### 2.15. SOP24(Pitch:1.27mm,Width:300mil)

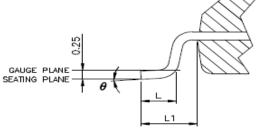
Lead of SOP24

Pitch=1.27 mm= 0.05 inch Body width=300 mil







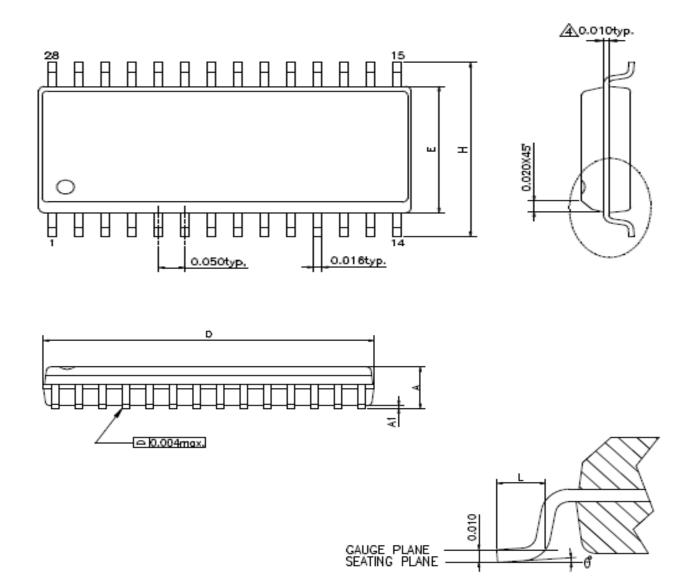


	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	-	-	2.65
A1	0.10	-	0.30
A2	2.05	-	-
b	0.31	-	0.51
С	0.20	-	0.33
D	15.24	-	15.70
Е	7.50 BSC		
E1	10.30 BSC		
e	1.27 BSC		
L1	1.40 BSC		
L	0.40	-	1.27
θ°	0	_	8



2.16. SOP28(Pitch:1.27mm, Width:300mil)

Lead of SOP28	Pitch=1.27 mm =0.05 inch
Lead of SOP26	Body width=300 mil



	INCH		
SYMBOLS	MIN	TYP	MAX
Α	ı	-	0.104
A1	0.004	_	-
D	0.697	0.718	0.724
E	0.291	0.295	0.299
Н	0.394	0.406	0.419
Ĺ	0.016	0.035	0.050
θ°	0	4	8



#### 2.17. SSOP16(Pitch: 0.635mm, Width: 150mil)

### Pitch=0.635mm=0.025 inch Lead of SSOP16 Body width=150 mil $\Box$ ш SEATING PLANE □ 0.004max. WITH b1 PLATING GAUGE PLANE SEATING PLANE BASE 0.010 METAL DETAIL B DETAIL A

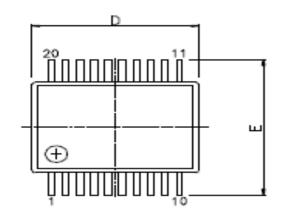
		INCH	
SYMBOLS	MIN	TYP	MAX
Α	0.053	-	0.069
A1	0.004	-	0.010
A2	0.049	-	0.059
b	0.008	-	0.012
b1	0.008	0.010	0.011
С	0.007	-	0.010
c1	0.007	0.008	0.009
D	0.189	0.193	0.197
E1	0.150	0.154	0.157
Е	0.228	0.236	0.244
Ĺ	0.016	0.025	0.050
е	0.025 BSC		
θ°	0	_	8

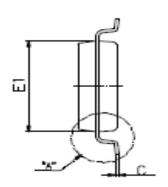


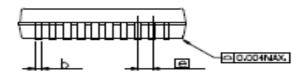
#### 2.18. SSOP20(Pitch:0.635mm,Width:150mil)

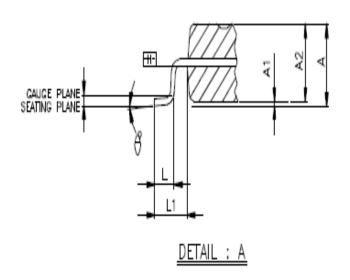
#### Lead of SSOP20

Pitch=0.635mm=0.025 inch Body width=150 mil









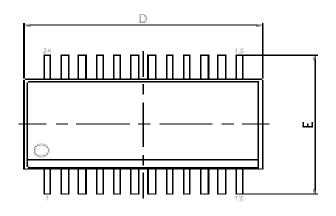
		INCH	
SYMBOLS	MIN	TYP	MAX
Α	0.053	0.064	0.069
A1	0.004	0.006	0.010
A2	-	-	0.059
b	0.008	-	0.012
С	0.007	-	0.010
D	0.337	0.341	0.344
E	0.228	0.236	0.244
E1	0.150	0.154	0.157
е	0.025 BSC		
L	0.016	0.025	0.050
L1		0.041 BSC	
θ°	0	_	8

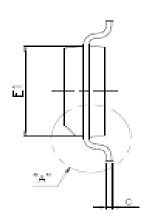


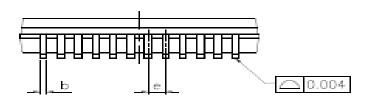
#### 2.19. SSOP24(Pitch: 0.635mm, Width: 150mil)

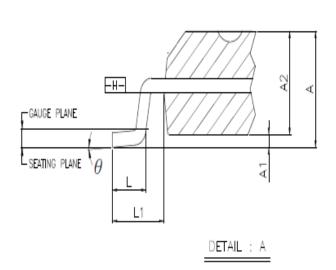
#### Lead of SSOP24

Pitch=0.635 mm=0.025 inch Body width=150 mil









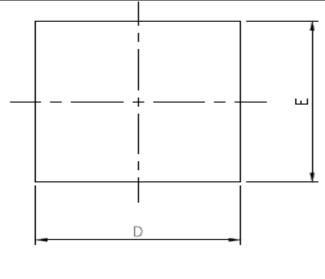
	INCH		
SYMBOLS	MIN	TYP	MAX
Α	0.053	0.064	0.069
A1	0.004	0.006	0.010
A2	-	-	0.059
D	0.337	0.341	0.344
Е	0.228	0.236	0.244
E1	0.150	0.154	0.157
b	0.008	-	0.012
С	0.007	-	0.010
е	0.025 BSC		
L	0.016	0.025	0.050
L1	0.041 BSC		
θ°	0	_	8

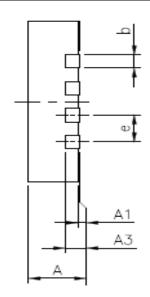


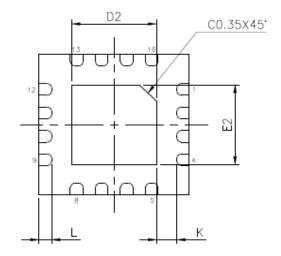
2.20. QFN3\*3-16(Pitch:0.50mm,Width:3x3mm,Thickness:0.75mm)

Lead of QFN3\*3-16

Pitch=0.5mm
Body width=3x3mm
Body thickness=0.75mm







	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	0.70	0.75	0.80
A1	0.00	0.02	0.05
A3	0.203 REF		
b	0.18	0.25	0.30
D	3.00 BSC		
E	3.00 BSC		
е	0.50 BSC		
K	0.20	-	-
D2	1.65	1.70	1.75
E2	1.65	1.70	1.75
L	0.35	0.40	0.45

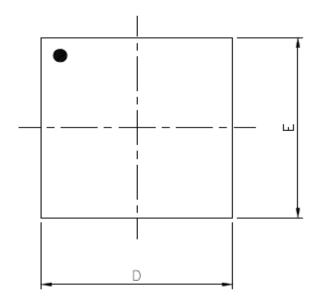
PKG CODE: WQFN

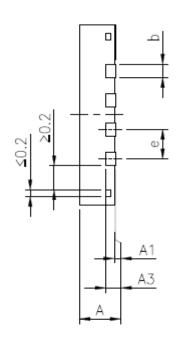


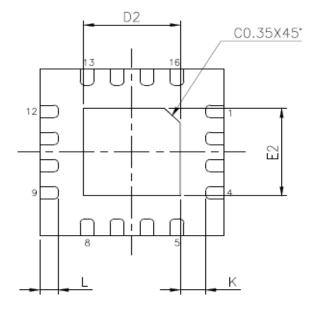
2.21. QFN4\*4-16(Pitch:0.65mm,Width:4x4mm,Thickness:0.75mm)

Lead of QFN4\*4-16

Pitch=0.65mm
Body width=4x4mm
Body thickness=0.75mm







	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	0.70	0.75	0.80
A1	0.00	0.02	0.05
A3	0.203 REF		
b	0.25	0.30	0.35
D	4.00 BSC		
E	4.00 BSC		
е	0.65 BSC		
K	0.20	-	-
D2	2.05	2.10	2.15
E2	2.05	2.10	2.15
L	0.35	0.40	0.45

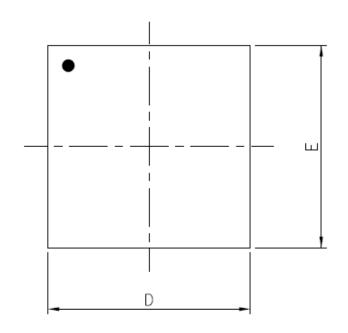
PKG CODE: WQFN

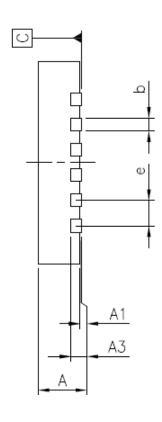


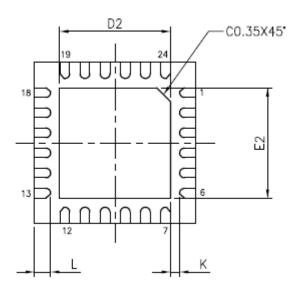
2.22. QFN4\*4-24(Pitch:0.5mm,Width:4x4mm,Thickness:0.75mm)

Lead of QFN4\*4-24

Pitch=0.5mm
Body width=4x4mm
Body thickness=0.75mm







	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	0.70	0.75	0.80
A1	0.00	0.02	0.05
A3	0.203 REF		
b	0.20	0.25	0.30
D	4.00 BSC		
E	4.00 BSC		
е	0.50 BSC		
K	0.20	-	-
D2	2.65	2.70	2.75
E2	2.65	2.70	2.75
L	0.35	0.40	0.45

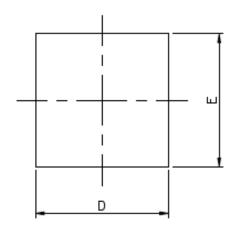
PKG CODE: WQFN

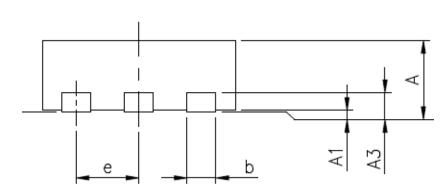


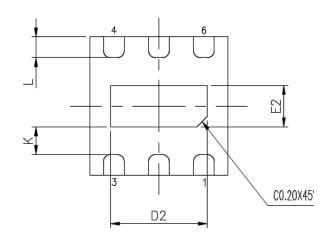
2.23. DFN2\*2-6(Pitch:0.65mm,Width:2x2mm,Thickness:0.75mm)

Lead of DFN2\*2-6

Pitch=0.65mm
Body width=2x2mm
Body thickness=0.75mm







	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	0.70	0.75	0.80
A1	0.00	0.02	0.05
A3	0.20 REF		
b	0.25	0.30	0.35
D	2.00 BSC		
E	2.00 BSC		
e	0.65 BSC		
K	0.20	-	-
E2	0.55	0.60	0.65
D2	1.35	1.40	1.45
Ĺ	0.25	0.30	0.35

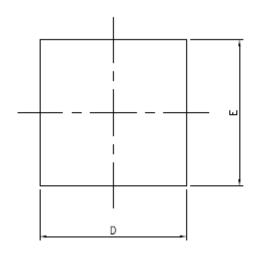
PKG CODE: WDFN

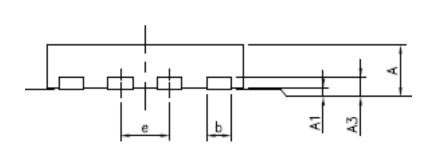


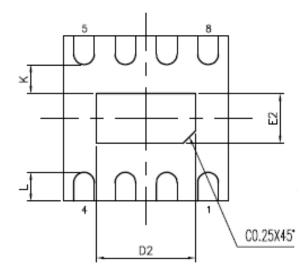
2.24. DFN2\*2-8(Pitch:0.50mm, Width:2x2mm, Thickness:0.75mm)

Lead of DFN2\*2-8

Pitch=0.5mm
Body width=2x2mm
Body thickness=0.75mm







WDFN	M	ILLIMETER	S
SYMBOLS	MIN	TYP	MAX
Α	0.70	0.75	0.80
A1	0.00	0.02	0.05
A3	0.203 REF		
b	0.20	0.25	0.30
D	2.00 BSC		
E	2.00 BSC		
е	0.50 BSC		
K	0.20	-	-
D2	1.15	1.20	1.25
E2	0.60	0.65	0.70
L	0.30	0.35	0.40

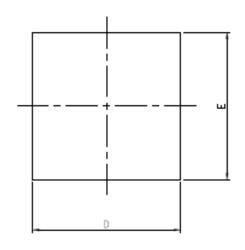
PKG CODE: WDFN

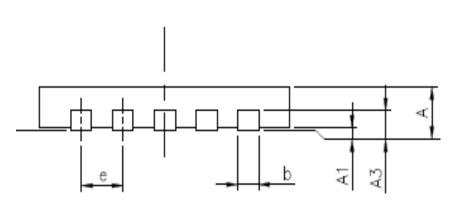


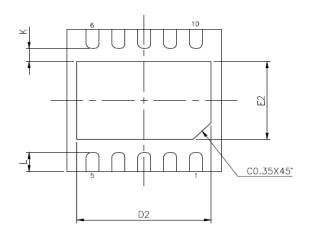
2.25. DFN3\*3-10(Pitch:0.50mm, Width:3x3mm,Thickness:0.75mm)

Lead of DFN3\*3-10

Pitch=0.5mm
Body width=3x3mm
Body thickness=0.75mm







	MILLIMETERS			
SYMBOLS	MIN	TYP	MAX	
Α	0.70	0.75	0.80	
A1	0.00	0.02	0.05	
A3	0.203 REF			
b	0.18	0.25	0.30	
D	3.00 BSC			
E	3.00 BSC			
e	0.50 BSC			
K	0.20	-	-	
D2	2.20	2.30	2.35	
E2	1.55	1.65	1.70	
L	0.30	0.40	0.50	
DIVO CODE MIDEN				

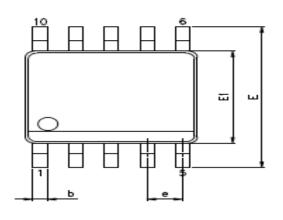
PKG CODE: WDFN

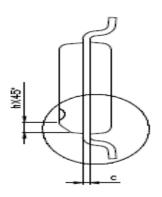


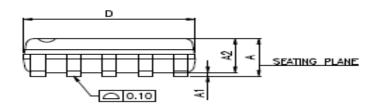
2.26. ESSOP10(Pitch:1mm,Width:150mil)

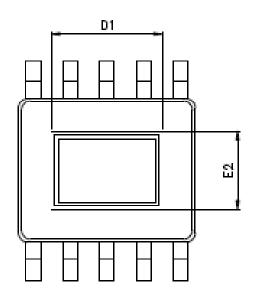
#### Lead of ESSOP10

#### Pitch=1mm Body Width=150 mil=3.9 mm

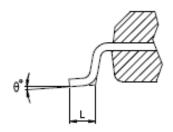








	MILLIMETERS		
SYMBOLS	MIN	TYP	MAX
Α	1.50	1.60	1.70
A1	0.04	_	0.12
A2	1.35	1.45	1.55
A3	0.65	0.70	0.75
b	0.30	-	0.50
С	0.19	-	0.25
D	4.80	4.90	5.00
D1	3.20	3.30	3.40
E	5.90	6.00	6.10
E1	3.84	3.94	4.04
E2	2.00	2.10	2.20
e	1.00		
h	0.25	_	0.50
L	0.52	_	0.72
θ°	0	_	8

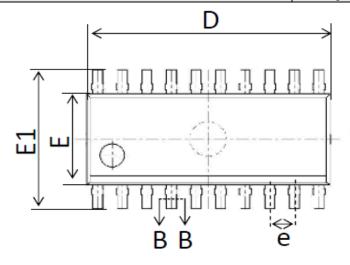


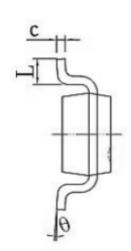


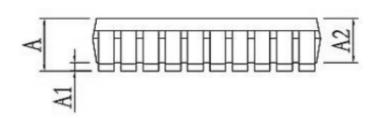
2.27. HTSOP20(Pitch:1mm,Width:150mil)

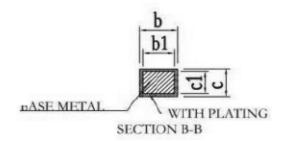
Lead of HTSOP20

Pitch=1mm Body Width=150 mil =3.9 mm









	MILLIMETERS		
SYMBOLS	MIN	MAX	
Α	1.35	1.75	
A1	0.10	0.25	
A2	1.35	1.55	
b	0.33	0.51	
b1	0.32	0.50	
С	0.17	0.25	
c1	0.16	0.24	
D	9.80	10.20	
Е	3.80	4.00	
E1	5.80	6.20	
е	1.0 BSC		
L	0.40	0.80	
θ°	0	8	