

FIGURE 1  
PRINCIPAL DIMENSIONS & DATUMS

THIS REGISTERED OUTLINE HAS BEEN PREPARED BY THE JEDEC JC-11 COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USAGE IN THE ELECTRONICS INDUSTRY; CHANGES ARE LIKELY TO OCCUR.

JEDEC  
SOLID STATE PRODUCT  
OUTLINES

TITLE METRIC PLASTIC QUAD  
FLATPACK FAMILY  
1.0, 0.8, 0.65 PITCH  
PQFP-G/MQFP

ISSUE  
C

DATE  
8/96

MO-108

OF 1  
8

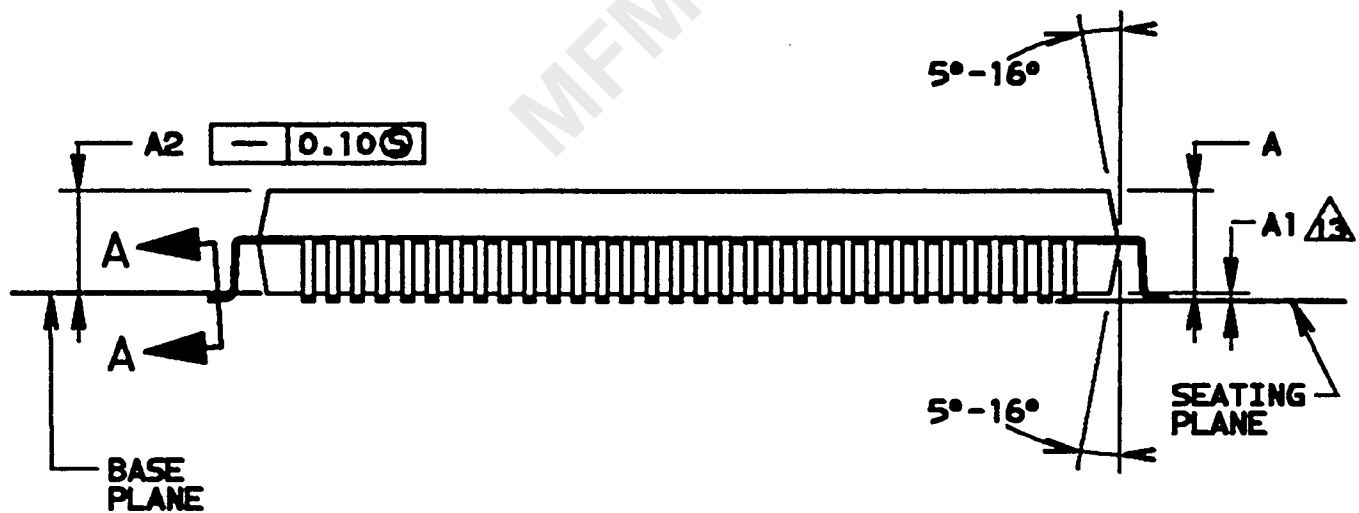
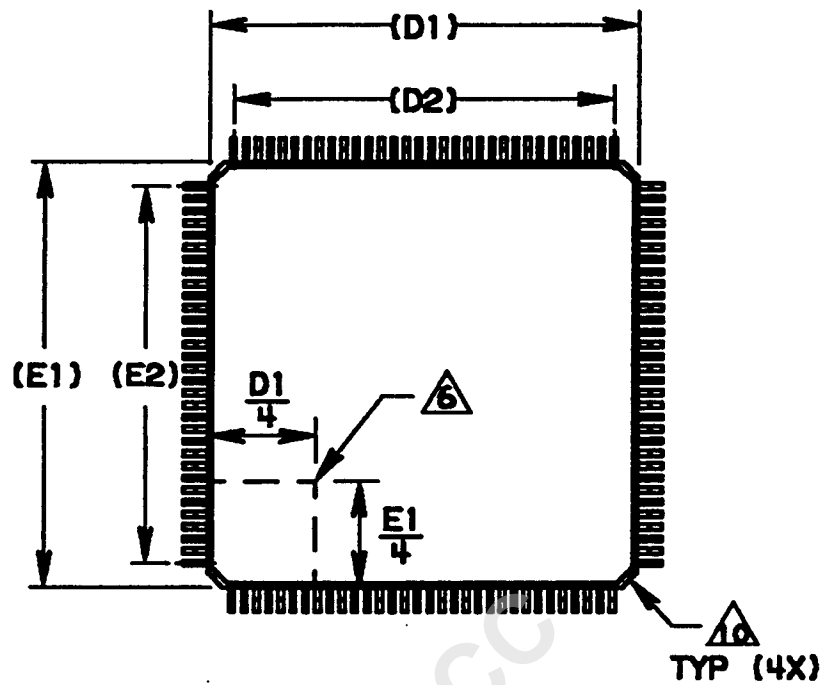


FIGURE 2  
MOLDED DETAILS

JEDEC  
SOLID STATE PRODUCT  
OUTLINES

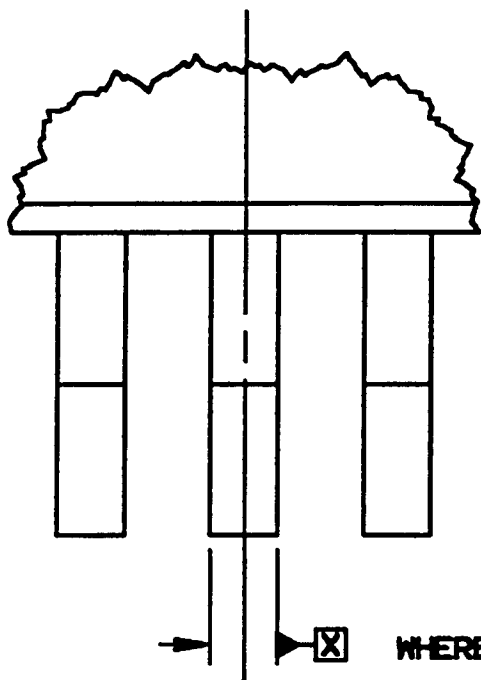
TITLE METRIC PLASTIC QUAD  
FLATPACK FAMILY  
1.0, 0.8, 0.65 PITCH  
PQFP-G/MQFP

ISSUE  
C

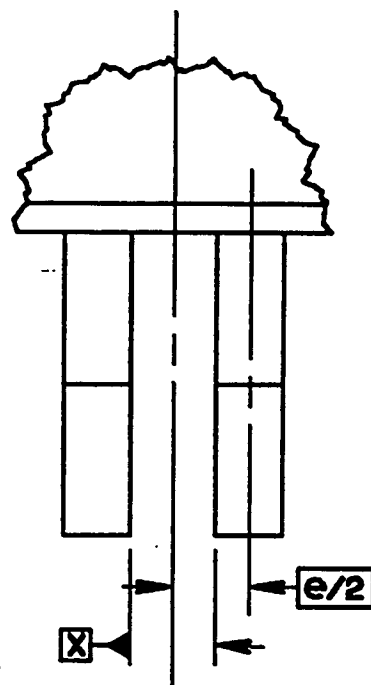
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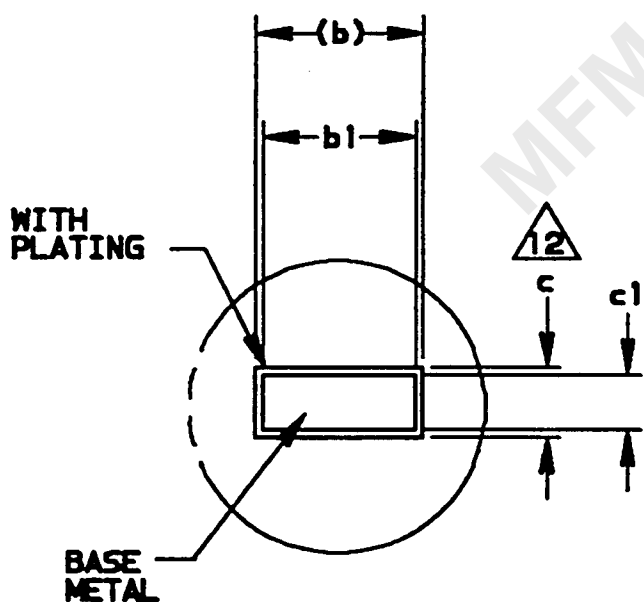


ODD LEADS/SIDE

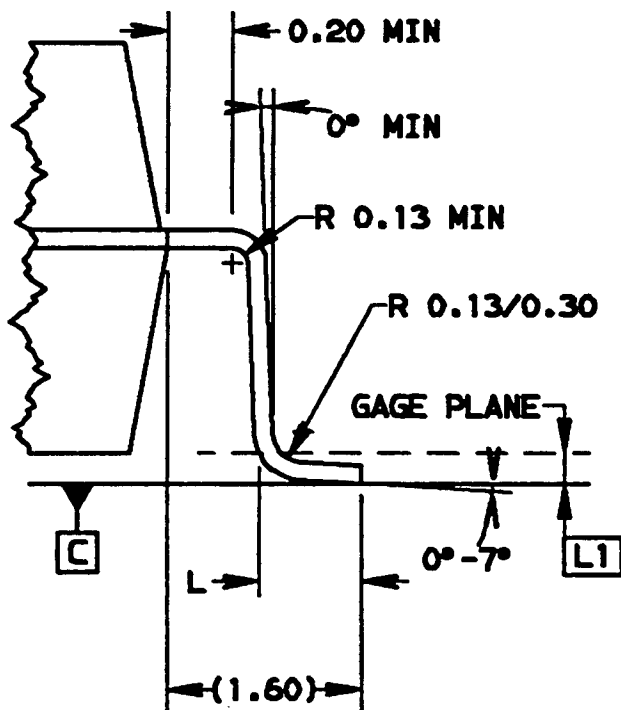


EVEN LEADS/SIDE

DETAIL A



SECTION A-A



DETAIL C

JEDEC  
SOLID STATE PRODUCT  
OUTLINES

TITLE METRIC PLASTIC QUAD  
FLATPACK FAMILY  
1.0, 0.8, 0.65 PITCH  
PQFP-6/MQFP

ISSUE  
C

DATE  
8/96

MO-108

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OF 8

## NOTES

- 1 ALL DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M-1994.
- 2 DATUM PLANE H IS LOCATED AT THE BOTTOM OF THE MOLD PARTING LINE COINCIDENT WITH WHERE THE LEAD EXITS THE BODY.
- 3 DATUMS A-B AND D TO BE DETERMINED AT DATUM PLANE H.
- 4 TO BE DETERMINED AT SEATING PLANE C.
- 5 DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 mm PER SIDE. DIMENSIONS D1 AND E1 DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE H.
- 6 DETAILS OF PIN 1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE ZONE INDICATED.
- 7 REGARDLESS OF THE RELATIVE SIZE OF THE UPPER AND LOWER BODY SECTIONS, DIMENSIONS D1 AND E1 ARE DETERMINED AT THE LARGEST FEATURE OF THE BODY EXCLUSIVE OF MOLD FLASH AND GATE BURRS, BUT INCLUDING ANY MISMATCH BETWEEN THE UPPER AND LOWER SECTIONS OF THE MOLDED BODY.
- 8 ALL DIMENSIONS ARE IN MILLIMETERS.
- 9 DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE LEAD WIDTH TO EXCEED b MAXIMUM BY MORE THAN 0.08 mm. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE LEAD FOOT.
- 10 EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.
- 11 N IS THE NUMBER OF LEADS.
- 12 THESE DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 mm AND 0.25 mm FROM THE LEAD TIP.
- 13 A1 IS DEFINED AS THE DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT OF THE PACKAGE BODY.
- 14 THE FOLLOWING VARIATIONS HAVE BEEN REMOVED FROM REGISTRATION MO-108. THESE VARIATIONS CAN NOW BE FOUND IN STANDARD MS-022.

AA-2	BD-2	CB-1	DA-2	DD-1
AC-2	BE-2	CB-2	DB-1	DD-2
BA-2	BF-2	CC-1	DB-2	EA-1
BB-2	CA-1	CC-2	DC-1	FA-1
BC-2	CA-2	DA-1	DC-2	HA-1

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE METRIC PLASTIC QUAD FLATPACK FAMILY 1.0, 0.8, 0.65 PITCH PQFP-G/MQFP	ISSUE C	DATE 8/96	MO-108	4 OF 8
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COMMON DIMENSIONS				
SYMBOL	MIN	NOM	MAX	NOTE
c	0.11		0.23	
c1	0.11	0.15	0.19	
L	0.73	0.88	1.03	
L1	0.25 BASIC			
aaa			0.25	
bbb			0.20	

SUMMARY TABLE			
BODY SIZE	PITCH	LEADCOUNT	VARIATIONS
10 mm X 10 mm	0.80 mm	44	AA-1,AB-1,AB-2
10 mm X 10 mm	0.65 mm	52	AC-1,AD-1,AD-2
14 mm X 14 mm	1.00 mm	52	BA-1,BB-1
14 mm X 14 mm	0.80 mm	64	BC-1,BD-1
14 mm X 14 mm	0.65 mm	80	BE-1,BF-1
16 mm X 16 mm	0.65 mm	88	GA-1,GB-1
24 mm X 24 mm	0.65 mm	136	JA-1
32 mm X 32 mm	0.65 mm	184	EA-2
40 mm X 40 mm	0.65 mm	232	FA-2

JEDEC SOLID STATE PRODUCT OUTLINES	TITLE METRIC PLASTIC QUAD FLATPACK FAMILY 1.0, 0.8, 0.65 PITCH PGFP-G/MQFP	ISSUE C	DATE 8/96	MO-108	OF 5 8

SYMBOL	VARIATIONS															
	AA-1			NOTE	AB-1			NOTE	AC-1			NOTE	AD-1			NOTE
	MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX	
A			2.70				3.40				2.70				3.40	
A1	0.25		0.50	13	0.25		0.50	13	0.25		0.50	13	0.25		0.50	13
A2	1.80	2.00	2.20		2.50	2.70	2.90		1.80	2.00	2.20		2.50	2.70	2.90	
b	0.29		0.45	9	0.29		0.45	9	0.22		0.40	9	0.22		0.40	9
b1	0.29	0.35	0.41		0.29	0.35	0.41		0.22	0.30	0.36		0.22	0.30	0.36	
D	13.20 BASIC			4	13.20 BASIC			4	13.20 BASIC			4	13.20 BASIC			4
D1	10.00 BASIC			7	10.00 BASIC			7	10.00 BASIC			7	10.00 BASIC			7
D2	8.00 REF				8.00 REF				7.80 REF				7.80 REF			
E	13.20 BASIC			4	13.20 BASIC			4	13.20 BASIC			4	13.20 BASIC			4
E1	10.00 BASIC			7	10.00 BASIC			7	10.00 BASIC			7	10.00 BASIC			7
E2	8.00 REF				8.00 REF				7.80 REF				7.80 REF			
CCC	0.20				0.20				0.13				0.13			
e	0.80 BASIC				0.80 BASIC				0.65 BASIC				0.65 BASIC			
N	44				44				52				52			
NOTE	1 8				1 8				1 8				1 8			
REF.	ITEM 11-270				ITEM 11-270				ITEM 11-270				ITEM 11-270			
ISSUE	A				A				A				A			

SYMBOL	VARIATIONS															
	BA-1			NOTE	BB-1			NOTE	BC-1			NOTE	BD-1			NOTE
	MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX	
A			2.70				3.40				2.70				3.40	
A1	0.25		0.50	13	0.25		0.50	13	0.25		0.50	13	0.25		0.50	13
A2	1.80	2.00	2.20		2.50	2.70	2.90		1.80	2.00	2.20		2.50	2.70	2.90	
b	0.34		0.50	9	0.34		0.50	9	0.29		0.45	9	0.29		0.45	9
b1	0.34	0.40	0.46		0.34	0.40	0.46		0.29	0.35	0.41		0.29	0.35	0.41	
D	17.20 BASIC			4	17.20 BASIC			4	17.20 BASIC			4	17.20 BASIC			4
D1	14.00 BASIC			7	14.00 BASIC			7	14.00 BASIC			7	14.00 BASIC			7
D2	12.00 REF				12.00 REF				12.00 REF				12.00 REF			
E	17.20 BASIC			4	17.20 BASIC			4	17.20 BASIC			4	17.20 BASIC			4
E1	14.00 BASIC			7	14.00 BASIC			7	14.00 BASIC			7	14.00 BASIC			7
E2	12.00 REF				12.00 REF				12.00 REF				12.00 REF			
CCC	0.20				0.20				0.20				0.20			
e	1.00 BASIC				1.00 BASIC				0.80 BASIC				0.80 BASIC			
N	52				52				64				64			
NOTE	1 8				1 8				1 8				1 8			
REF.	ITEM 11-270				ITEM 11-270				ITEM 11-270				ITEM 11-270			
ISSUE	A				A				A				A			

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SYMBOL	VARIATIONS															
	BE-1			NOTE	BF-1			NOTE	GA-1			NOTE	GB-1			NOTE
	MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX	
A			2.70				3.40				2.70				3.40	
A1	0.25		0.50	13	0.25		0.50	13	0.25		0.50	13	0.25		0.50	13
A2	1.80	2.00	2.20		2.50	2.70	2.90		1.80	2.00	2.20		2.50	2.70	2.90	
b	0.22		0.40	9	0.22		0.40	9	0.22		0.40	9	0.22		0.40	9
b1	0.22	0.30	0.36		0.22	0.30	0.36		0.22	0.30	0.36		0.22	0.30	0.36	
D	17.20 BASIC			4	17.20 BASIC			4	19.20 BASIC			4	19.20 BASIC			4
D1	14.00 BASIC			7	14.00 BASIC			7	16.00 BASIC			7	16.00 BASIC			7
D2	12.35 REF				12.35 REF				13.65 REF				13.65 REF			
E	17.20 BASIC			4	17.20 BASIC			4	19.20 BASIC			4	19.20 BASIC			4
E1	14.00 BASIC			7	14.00 BASIC			7	16.00 BASIC			7	16.00 BASIC			7
E2	12.35 REF				12.35 REF				13.65 REF				13.65 REF			
CCC	0.13				0.13				0.13				0.13			
e	0.65 BASIC				0.65 BASIC				0.65 BASIC				0.65 BASIC			
N	80				80				88				88			
NOTE	1 8				1 8				1 8				1 8			
REF.	ITEM 11-270				ITEM 11-270				ITEM 11-343				ITEM 11-343			
ISSUE	A				A				B				B			

SYMBOL	VARIATIONS															
	JA-1			NOTE				NOTE				NOTE				NOTE
	MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX	
A			4.00													
A1	0.25		0.50	13												
A2	3.10	3.30	3.50													
b	0.22		0.40	9												
b1	0.22	0.30	0.36													
D	27.20 BASIC			4												
D1	24.00 BASIC			7												
D2	21.45 REF															
E	27.20 BASIC			4												
E1	24.00 BASIC			7												
E2	21.45 REF															
CCC	0.13															
e	0.65 BASIC															
N	136															
NOTE	1 8															
REF.	ITEM 11-343															
ISSUE	B															

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SYMBOL	VARIATIONS															
	AB-2			NOTE	AD-2			NOTE	EA-2			NOTE	FA-2			NOTE
	MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX	
A			3.15				3.15				3.85				4.40	
A1	0.00		0.25	13	0.00		0.25	13	0.00		0.25	13	0.00		0.35	13
A2	2.50	2.70	2.90		2.50	2.70	2.90		3.20	3.40	3.60		3.55	3.80	4.05	
b	0.29		0.45	9	0.22		0.40	9	0.22		0.40	9	0.22		0.40	9
b1	0.29	0.35	0.41		0.22	0.30	0.36		0.22	0.30	0.36		0.22	0.30	0.36	
D	13.20 BASIC			4	13.20 BASIC			4	35.20 BASIC			4	43.20 BASIC			4
D1	10.00 BASIC			7	10.00 BASIC			7	32.00 BASIC			7	40.00 BASIC			7
D2	8.00 REF				7.80 REF				29.25 REF				37.05 REF			
E	13.20 BASIC			4	13.20 BASIC			4	35.20 BASIC			4	43.20 BASIC			4
E1	10.00 BASIC			7	10.00 BASIC			7	32.00 BASIC			7	40.00 BASIC			7
E2	8.00 REF				7.80 REF				29.25 REF				37.05 REF			
CCC	0.20				0.13				0.13				0.13			
e	0.80 BASIC				0.65 BASIC				0.65 BASIC				0.65 BASIC			
N	44				52				184				232			
NOTE	1 8				1 8				1 8				1 8			
REF.	ITEM 11-270				ITEM 11-270				ITEM 11-270				ITEM 11-270			
ISSUE	A				A				A				A			

SYMBOL	VARIATIONS															
				NOTE				NOTE				NOTE				NOTE
	MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX		MIN	NOM	MAX	
A																
A1																
A2																
b																
b1																
D																
D1																
D2																
E																
E1																
E2																
CCC																
e																
N																
NOTE																
REF.																
ISSUE																

JEDEC SOLID STATE PRODUCT OUTLINES			TITLE METRIC PLASTIC QUAD FLATPACK FAMILY 1.0, 0.8, 0.65 PITCH PQFP-G/MQFP			ISSUE C		DATE 8/96		MO-108		8 OF 8	
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