

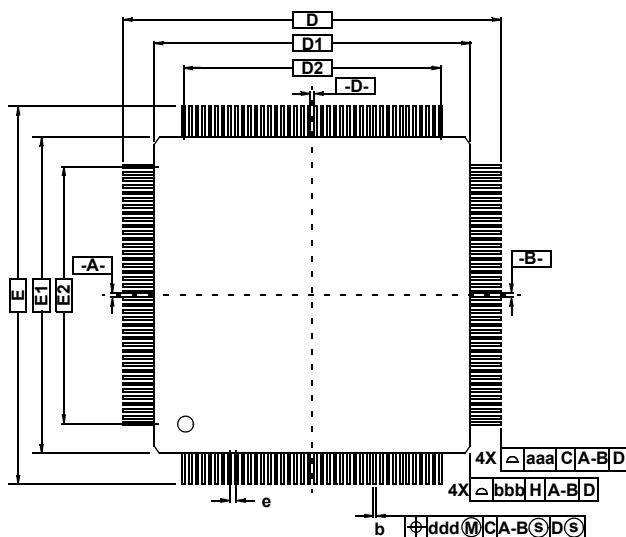
# Plastic Packages for Integrated Circuits

## Package Outline Drawing

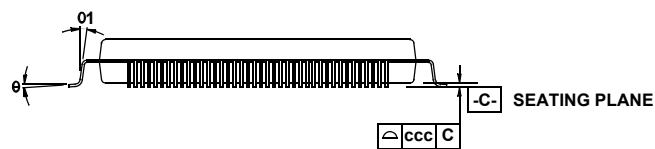
Q160.24x24

160 LEAD LOW PLASTIC QUAD FLATPACK PACKAGE (LQFP)

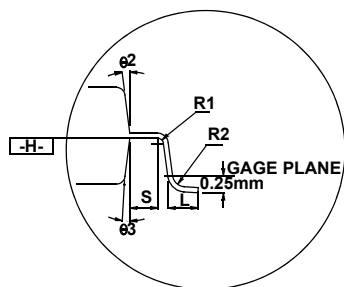
Rev 0, 10/12



TOP VIEW



SIDE VIEW



DETAIL "X"

SYMBOL	MILLIMETERS			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	1.60	-	-	0.063
A1	0.05	-	0.15	0.002	-	0.006
A2	1.35	1.40	1.45	0.053	0.055	0.057
D	26.00 REF.			1.024 BSC.		
D1	24.00 REF.			0.945 BSC.		
E	26.00 REF.			1.024 BSC.		
E1	24.00 REF.			0.945 BSC.		
R2	0.08	-	0.20	0.003	-	0.008
R1	0.08	-	-	0.003	-	-
$\theta$	0°	3.5°	7°	0°	3.5°	7°
$\theta 1$	0°	-	-	0°	-	-
$\theta 2$	11°	12°	13°	11°	12°	13°
$\theta 3$	11°	12°	13°	11°	12°	13°
c	0.09	-	0.20	0.004	-	0.008
L	0.45	0.60	0.75	0.018	0.024	0.030
L1	1.00 REF			0.039 REF		
S	0.20	-	-	0.008	-	-
b	0.17	0.20	0.27	0.007	0.008	0.011
e	0.50 BSC			0.020 BSC		
D2	19.50			0.768		
E2	19.50			0.768		
<b>TOLERANCES OF FORM AND POSITION</b>						
aaa	0.20			0.008		
bbb	0.20			0.008		
ccc	0.08			0.003		
ddd	0.08			0.003		

**NOTES:**

- Dimensions D1 and E1 do not include mold protrusion. Allowable protrusion is 0.25mm per side. D1 and E1 are maximum plastic body size dimensions including mold mismatch.
- Dimension b does not include dambar protrusion. Allowable dambar protrusion shall not cause the lead width to exceed the maximum b dimension by more than 0.08mm. Dambar cannot be located on the lower radius or the foot. The minimum space between protrusion and an adjacent lead is 0.07mm for 0.4mm and 0.5mm pitch packages.
- All Dimensions of 160L were based on those of 176L since they are not mentioned in JEDEC SPEC MS-026.