



SYMBOL	MILLIMETER			INCH		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	—	—	3.40	—	—	0.134
A1	0.25	—	—	0.010	—	—
A2	2.50	2.72	2.90	0.098	0.107	0.114
D	23.20 BASIC			0.913 BASIC		
D1	20.00 BASIC			0.787 BASIC		
E	17.20 BASIC			0.677 BASIC		
E1	14.00 BASIC			0.551 BASIC		
R2	0.13	—	0.30	0.005	—	0.012
R1	0.13	—	—	0.005	—	—
$\theta$	0°	3.5°	7°	0°	3.5°	7°
$\theta_1$	0°	—	—	0°	—	—
$\theta_2, \theta_3$	15° REF			15° REF		
c	0.13	0.15	0.23	0.005	0.006	0.009
L	0.73	0.88	1.03	0.029	0.035	0.041
L <sub>1</sub>	1.60 REF			0.063 REF		
S	0.20	—	—	0.008	—	—
b	0.170	0.200	0.270	0.007	0.008	0.011
e	0.50 BSC.			0.020 BSC.		
D2	18.50			0.728		
E2	12.50			0.492		
TOLERANCES OF FORM AND POSITION						
aaa	0.25			0.010		
bbb	0.20			0.008		
ccc	—	0.08	—	—	0.003	—

Notes:

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. REF JEDEC: MS-029A/KA
3. DIMENSION D1 AND E1 DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25mm PER SIDE. DIMENSIONS D1 AND E1 DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE  $\text{H}$
4. 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 0.08 mm. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE LEAD FOOT.



DATE: 03/10/06

DESCRIPTION: 128-pin Quad Flat Package (FQFP)

PACKAGE CODE: MA128

DOCUMENT CONTROL #: PD-2029

REVISION: C