



Symbol	PQ/PQG44			PQ/PQG/HQ/HQG160			PQ/PQG/HQ/HQG208			PQ/PQG/HQ/HQG240		
	MILLIMETERS			MILLIMETERS			MILLIMETERS			MILLIMETERS		
	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.
A	$\approx$	2.15	2.35	$\approx$	3.70	4.10	$\approx$	3.70	4.10	$\approx$	3.78	4.10
A <sub>1</sub>	0.05	$\approx$	0.25	0.25	0.33	0.50	0.25	0.33	0.50	0.25	0.38	0.50
A <sub>2</sub>	1.95	2.00	2.10	3.20	3.40	3.60	3.20	3.40	3.60	3.20	3.40	3.60
D/E	13.20 BSC			31.20 BSC			30.60 BSC			34.60 BSC		
D <sub>1</sub> /E <sub>1</sub>	10.00 BSC			28.00 BSC			28.00 BSC			32.00 BSC		
FL	1.60 REF.			1.60 REF.			1.30 REF.			1.30 REF.		
L	0.73	0.88	1.03	0.73	0.88	1.03	0.50	0.60	0.75	0.50	0.60	0.75
e	0.80 BSC.			0.65 BSC.			0.50 BSC.			0.50 BSC.		
b	0.30	$\approx$	0.45	0.22	$\approx$	0.40	0.17	0.22	0.27	0.17	$\approx$	0.27
c	0.13	$\approx$	0.23	0.13	$\approx$	0.23	0.09	$\approx$	0.20	0.09	$\approx$	0.20
a a a	$\approx$	$\approx$	0.25	$\approx$	$\approx$	0.25	$\approx$	$\approx$	0.25	$\approx$	$\approx$	0.25
b b b	$\approx$	$\approx$	0.20	$\approx$	$\approx$	0.20	$\approx$	$\approx$	0.20	$\approx$	$\approx$	0.20
c c c	$\approx$	$\approx$	0.10	$\approx$	$\approx$	0.10	$\approx$	$\approx$	0.08	$\approx$	$\approx$	0.08
d d d	$\approx$	$\approx$	0.20	$\approx$	$\approx$	0.13	$\approx$	$\approx$	0.08	$\approx$	$\approx$	0.08
N	44			160			208			240		
REF.	JEDEC MS-022-AB			JEDEC MS-022-DD1			JEDEC MS-029-FA-1			JEDEC MS-029-GA		

- NOTES: 1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M-1994.  
 2. DIMENSIONS D<sub>1</sub> AND E<sub>1</sub> DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE MOLD PROTRUSION SHALL NOT EXCEED 0.25mm PER SIDE.  
 3. PACKAGE TOP DIMENSIONS MAY BE SMALLER THAN THE BOTTOM DIMENSIONS BY 0.20mm.  
 4. THE SAME PACKAGE DIMENSIONS APPLY FOR THERMALLY ENHANCED PRODUCTS. HEAT SINK IS ADDED. THE PACKAGE CODE IS "HQ".  
 5. HEAT SINK DIMENSIONS: HQ160/HQ208=21mm SQ. REF.; HQ240=24mm SQ. REF.  
 6. MARK ORIENTATION WITH RESPECT TO PIN-1 I.D. IF 2 OR MORE CIRCLES EXIST ON TOP OF THE PACKAGE, USE THE SMALLEST CIRCLE AS PIN-1 I.D.

44, 160, 208, and 240-PIN PQFP (PQ44/PQG44, PQ160/PQG160, PQ208/PQG208, and PQ240/PQG240) and 160, 208, and 240-PIN HEAT SINK PQFP (HQ160/HQG160, HQ208/HQG208, and HQ240/HQG240)