EDQUAD

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The EDQUAD Package

The wide spread use of plastic packages in the 1990's witnessed an increased requirement for thermal and electrical performance. ASAT created the EDQUAD family to meet this demand. It provides up to a 50% improvement in power dissipation and a significant reduction in electrical parasitics when compared to standard QFP's. ASAT's EDQUAD packages are an excellent choice for applications requiring enhanced performance.

Typical Applications

- ASIC's, Graphics, Microprocessors
- High Performance Networks
- High-Speed Logic / FPGA's
- Automatic Test Equipment

EDQUAD's are constructed of standard materials and can be custom designed to meet your IC's special requirements.

Advantages

- Internal ground and power rings
- Versatile package configurations
- Enhanced electrical performance
- Uses standard assembly materials
- Superior thermal performance

Features

- Body Sizes between 5 and 32mm SQ.
- Lead counts between 8 and 240
- Die down or die up orientation
- Internal ground and power rings
- Heat sink plating Nickel or Solder
- Optional ceramic layer

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Performance

Electrical	
Typical Package:	208 EDQUAD-QFP
Total capacitance (pF)	1.04 -1.49
Self Inductance (nH)	10.81 - 13.19
Mutual Inductance (nH)	7.21 - 8.87
Thermal	
Basis	Conduction via heatspreader
Conditions	1.5 watts, 1s2p
Typical Package	Theta Ja = 13.4 °c/w

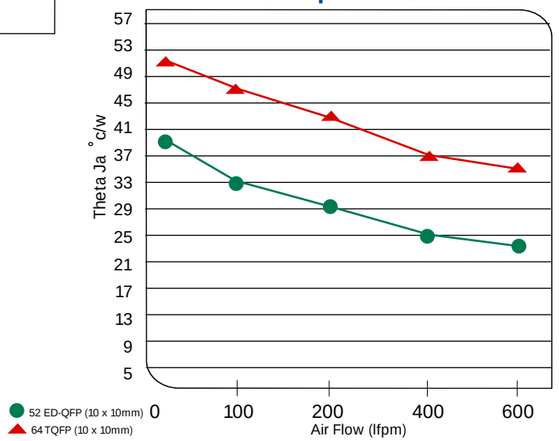
Reliability

Preconditioning	Level 3
Autoclave, 121°c	168 Hours
Temp Cycle, cond. C	250/500 cycles
Thermal Shock, cond. D	100 cycles
HAST, 130°c	96 Hours
HTSL, 150°c	500 Hours

Standard Materials

Leadframe	Copper
Leadframe Finish	85%/15% Sn / Pb
Die Attach	Conductive Epoxy
Mold Compound	6650 and 7320 Series
Marking Ink	White or Black Epoxy Ink

Thermal Comparison



Notes: Measured data per JEDEC JC-15 & Semi Standard G38-0996 Low Conductivity Board
Die Size: 400 x 400 Mils

Typical Configurations

TYPE	Body Size	"A2" Thickness	Footprint	External Lead Pitch	Leadcount
PLCC	.354 - 1.154in	0.105 - 0.152in	.036in	0.05in	20/28/32/44/52/68/84
SOIC	150mils	1.4	2.1	1.27	8,16
SOIC	300mils	2.35	2.8	.27	16,20,28
SSOP	150mils	1.4	2.1	0.65	16,28
QFP	10 x 10	2.0	3.2/3.9/4.1	0.8/.65/0.5	44/52/64
QFP	14 x 14	2.0 / 2.7	2.0/2.6/3.2/3.9	1.0/0.8/0.65/0.5	44/52/64/80/100
QFP	14 x 20	2.0 / 2.7	3.2/3.6/3.9	1.0/0.8/0.65/0.5	64/80/100/120/128
QFP	28 x 28	3.49	2.6/3.2/3.9	0.8/0.65/0.5	120/128/144/160/184/208
QFP	32 x 32	3.5	2.6/3.2	0.65/0.5	184/240
TQFP	5 x5	1.4	2.0	0.8/0.5	20/32
TQFP	7 x 7	1.4	2.0	0.8/0.5	32/48
TQFP	10 x 10	1.4	2.0	0.8/0.65/0.5	44/52/64
TQFP	14 x 14	1.4	2.0	1.0/0.8/0.65/0.5/0.4	44/52/64/80/100/120/128
TQFP	20 x 20	1.4	2.0	0.5/0.4	144/176

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