

MQFP-ed

Exposed Drop-in Heat Slug Metric Quad Flat Pack

- 14 x 20mm to 32 x 32mm
- 100 to 240 lead count
- Lead pitch range from 0.80mm to 0.50mm



FEATURES

- Body Sizes: 14 x 20mm to 32 x 32mm
- Package Height: 3.4mm
- Lead Counts: 100L to 240L
- Lead Pitch: 0.80mm to 0.50mm
- JEDEC standard compliant
- Lead-free and Green material sets available

APPLICATIONS

- ASIC
- DSP
- FPGA
- PLD
- Logic, microprocessors / controllers
- High speed logic, high power microprocessors
- 3D graphics, telecom, wireless, audio, CPU / GUI

DESCRIPTION

STATS ChipPAC's Exposed Drop-In Heat Slug Metric Quad Flat Pack (MQFP-ed) is a thermally enhanced version of the QFP package. Thermal enhancement is achieved by adding a drop-in exposed anodized aluminum heat spreader during the molding process, using a standard leadframe. MQFP-ed typically has 60% higher thermal performance over the standard MQFP and the QFP-d for higher power applications.

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SPECIFICATIONS

| | |
|-----------------|---|
| Die Thickness | 380-560µm (15-22mils) range preferred |
| Gold Wire | 25/30µm (1.0/1.2mils) diameter, 99.99% Au |
| Lead Finish | 85/15 Sn/Pb or Matte Tin |
| Marking | Laser / ink |
| Packing Options | JEDEC tray / tape and reel |

RELIABILITY

| | |
|----------------------------|-------------------------------|
| Moisture Sensitivity Level | JEDEC Level 3 |
| Temperature Cycling | -65°C/150°C, 1000 cycles |
| High Temperature Storage | 150°C, 500 hrs |
| Pressure Cooker Test | 121°C 100% RH, 2 atm, 168 hrs |
| Liquid Thermal Shock (opt) | -55°C/125°C, 1000 cycles |

THERMAL PERFORMANCE, θ_{ja} (°C/W)

| Package | Body Size (mm) | Pad Size (mm) | Die Size (mm) | Thermal Performance, θ_{ja} (°C/W) |
|---------|----------------|---------------|---------------|---|
| 208L | 28 x 28 x 3.4 | 14.0 x 14.0 | 10.2 x 10.2 | 14.9 |

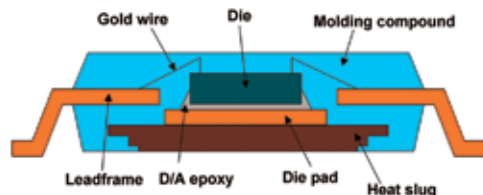
Note: Simulation data for package mounted on 4 layer PCB (per JEDEC JESD51-7) under natural convection as defined in JESD51-2.

ELECTRICAL PERFORMANCE

| Package | Body Size (mm) | Pad Size (mm) | Frequency | Self Inductance (nH) | Self Capacitance (pF) |
|---------|----------------|---------------|-----------|----------------------|-----------------------|
| 208L | 28 x 28 x 3.4 | 10.5 x 10.5 | 100MHz | 11.6~14.7 | 1.43~1.56 |

Note: *Results are simulated. Data is available through 2.5GHz.

CROSS-SECTION



PACKAGE CONFIGURATIONS

| Package Size (mm) | Lead Count |
|-------------------|--------------------|
| 14 x 20 | 100, 128 |
| 28 x 28* | 128, 144, 160, 208 |
| 32 x 32 | 240 |

Note: *Cavity down configuration available.

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