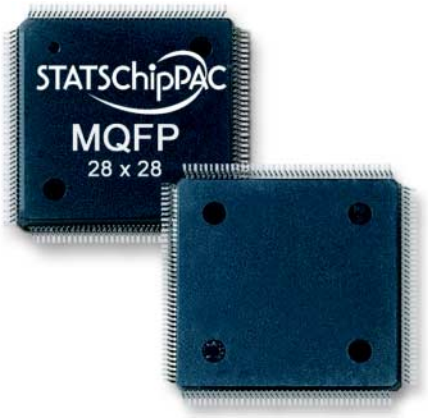
MQFP

Metric Quad Flat Pack

- **10 x 10mm to 32 x 32mm body sizes**
- **44 to 240 lead counts**
- **Lead pitch range from 0.80mm to 0.50mm**



FEATURES

- Body Sizes: 10 x 10mm to 32 x 32mm
- Package Height: 2.0 mm to 3.4mm
- Lead Counts: 44L to 240L
- Lead Pitch: 0.80mm to 0.50mm
- Wide range of open tool leadframe and die pad sizes available
- Moisture Sensitivity: JEDEC Level 3
- JEDEC standard compliant
- Lead-free and Green material sets available
- Copper and alloy leadframes available

DESCRIPTION

STATS ChipPAC's Metric Quad Flat Pack (MQFP) is a leadframe based, plastic encapsulated package with gull wing shaped leads on four sides. The MQFP is targeted at cost sensitive applications while providing a high degree of thermal and electrical performance. Offered in a wide range of body sizes and pin counts, the MQFP provides designers with the flexibility and convenience of meeting their packaging needs for a large variety of device designs.

APPLICATIONS

- ASIC
- DSP
- Gate Array
- Logic / Microprocessors / Controllers
- Multimedia, PC Chipsets, Others

MQFP

Metric Quad Flat Pack

SPECIFICATIONS

Die Thickness	380-560µm (15-22mils) range preferred
Gold Wire	25/30µm (1.0/1.2mils) diameter, 99.999%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, θja (°C/W)

Package	Body Size (mm)	Pad Size (mm)	Die Size (mm)	Thermal Performance, θja (°C/W)
100L	14 x 14 x 2.0	9.0 x 9.0	7.8 x 7.8	37.0
208L	28 x 28 x 3.4	14.0 x 14.0	10.2 x 10.2	24.8

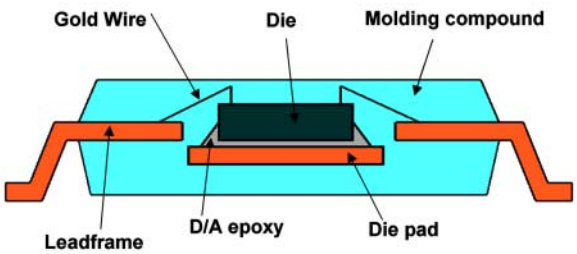
Note: Simulation data for package mounted on 4 layer PCB (per JEDEC JESD51-7) under natural convection as defined in JESD51-2.

ELECTRICAL PERFORMANCE

Electrical parasitic data is highly dependent on the package layout. 3D electrical simulation can be used on the specific package design to provide the best prediction of electrical behavior. Data below is for a frequency of 100MHz and assumes 1.0 mil gold bonding wire.

Conductor Component	Length (mm)	Resistance (mOhms)	Inductance (nH)	Inductance Mutual (nH)	Capacitance (pF)	Capacitance Mutual (pF)
Wire	2	120	1.65	0.45 - 0.85	0.10	0.01 - 0.02
Lead (10 x 10mm, 44L)	2.4 - 3.2	19.0 - 25.0	1.56 - 1.75	0.70 - 0.79	0.31 - 0.38	0.14 - 0.17
Total (10 x 10mm, 44L)		139 - 145	3.21 - 3.4	1.15 - 1.64	0.41 - 0.48	0.15 - 0.19
Wire	2	120	1.65	0.45 - 0.85	0.10	0.01 - 0.02
Lead (32 x 32mm, 240L)	11.0 - 12.6	88.0 - 100.8	6.05 - 7.25	3.33 - 3.99	1.64 - 1.89	0.66 - 0.76
Total (32 x 32mm, 240L)		208 - 220.8	7.7 - 8.9	3.78 - 4.84	1.74 - 1.99	0.67 - 0.78

CROSS-SECTION



PACKAGE CONFIGURATIONS

Package Size (mm)	Lead Count
10 x 10	44, 52
14 x 14	64, 80, 100
14 x 20	64, 80, 100, 128
28 x 28	120, 128, 144, 160, 208
32 x 32*	240

Note: *Cavity down configuration available.

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