LQFP

Low Profile Quad Flat Pack

- **7 x 7mm to 28 x 28mm body sizes**
- **32 to 208 lead counts**
- **Lead pitch range from 0.80mm to 0.40mm**

FEATURES

- Body Sizes: 7 x 7mm to 28 x 28mm
- Package Height: 1.4mm
- Lead Counts: 32L to 208L
- Lead Pitch: 0.80mm to 0.40mm
- Wide range of open tool leadframe and die pad sizes available
- Moisture Sensitivity: JEDEC Level 3
- JEDEC standard compliant
- Lead-free and Green materials sets available
- Copper and alloy leadframes available

DESCRIPTION

STATS ChipPAC's LQFP is a low profile (1.4mm) version of the QFP. The LQFP is a leadframe based, plastic encapsulated package with gull wing shaped leads on four sides. The LQFP offers pin counts up to 208, and is suitable for designs with high I/Os while meeting low profile requirements and for mainstream cost sensitive applications.

APPLICATIONS

- 3D Graphics
- Multimedia
- PC Chipsets
- Video / Audio
- Telecom
- Disc Drives
- Communication Boards (Ethernet, ISDN)

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SPECIFICATIONS

Die Thickness	280-430µm (11-17mils) 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)
48L	7 x 7 x 1.4	5.3 x 5.3	3.8 x 3.8	50.0
100L	14 x 14 x 1.4	9.0 x 9.0	7.8 x 7.8	37.2
208L	28 x 28 x 1.4	9.0 x 9.0	7.8 x 7.8	32.1

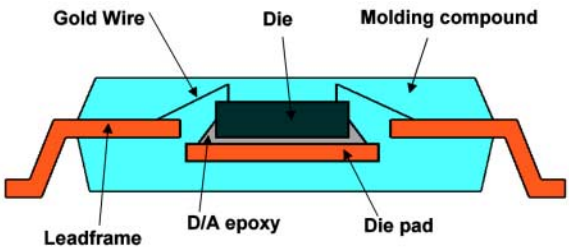
Note: Simulation data for package mounted on 4 layer PCB (per JEDEC JESD51-7) under natural convection as defined in JESD51-2.

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 (7 x 7mm, 32L)	1.4 - 2.2	11.0 - 18.0	0.64 - 0.99	0.31 - 0.49	0.21 - 0.33	0.07 - 0.12
Total (7 x 7mm, 32L)		131 - 138	2.29 - 2.64	0.76 - 1.34	0.31 - 0.43	0.08 - 0.14
Wire	2	120	1.65	0.45 - 0.85	0.10	0.01 - 0.02
Lead (14 x 14mm, 128L)	3.0 - 4.5	24.0 - 36.0	1.96 - 2.92	1.08 - 1.61	0.45 - 0.67	0.20 - 0.30
Total (14 x 14mm, 128L)		144.0 - 156.0	3.61 - 4.57	1.53 - 2.46	0.55 - 0.77	0.21 - 0.32

CROSS-SECTION



PACKAGE CONFIGURATIONS

Package Size (mm)	Lead Count
7 x 7	32, 40, 48
10 x 10	44, 64
12 x 12	80, 100
14 x 14	44, 64, 80, 100, 128
14 x 20	128
20 x 20	144,184
24 x 24	176
28 x 28	208

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