



# QFP

Quad Flat Package

## DESCRIPTION

QFP is a quad-sided, lead frame based plastic package. QFP family has broad pin count range and body size choices make them a very versatile package for wide range of devices from ASIC to chipsets and broadband IC controllers. Lingsen QFPs are offered in different body dimensions from 14x20mm to 28x28mm with thickness ranging from 2.8mm to 3.3mm (160L). Available pin counts are from 64L to 160L.

The package meets JEDEC Moisture Sensitivity Level 3 standard that ensures reliability in its functions.

## SPECIFICATIONS

• Die Thickness	762um (30mils) maximum
• Gold Wire	99.99% Au
• Mold Compound	EME G600 (Green) EME 6600CSP (Non-Green)
• Plating	Matte Tin
• Marking	White Ink / Laser Mark
• Packing	Tray

## APPLICATIONS

- DSP/ Base Band ICs
- Logic/ ASIC
- Multimedia
- Micro-Controllers/ Micro Processors
- Chipsets/ Graphics Chip
- Mixed Signal/ Analog ICs

## RELIABILITY

MSL Level: MSL 3 @ 240°C for Sn/Pb  
 MSL Level: MSL 3 @ 260°C for Pb-Free & Green  
 Pressure Cook Test: 168hrs (121°C, 100%RH, 2atm)  
 Temperature Cycling: 500cycles (-65°C/+150°C)  
 HAST: 100hrs (130°C, 85%RH)  
 Temperature & Humidity Test: 1,000hrs (85°C, 85%RH)  
 High Temperature Storage: 1,000hrs (150°C)

## FEATURES

- Available body from 14x20mm to 28x28mm
- 64L to 160L lead counts
- Body thickness 2.8mm to 3.3mm
- JEDEC standard compliant
- JEDEC MSL level 3 qualified for all pin counts

### THERMAL PERFORMANCE

Package	Body Size (mm)	Pad Size (mm)	Die Size (mm)	Thermal Performance $\theta_{ja}$ ( $^{\circ}\text{C}/\text{W}$ )
QFP 64L	14x20	5.08x5.08	3.416x3.607	42.11
QFP 208L	28x28	8x8	5.4x7.1	22.64

Note: Simulated with JEDEC Standard 4-layer test board under still air condition, ambient temperature 45°C

### ELECTRICAL PERFORMANCE

Package	Body Size (mm)	Pad Size (mm)	Frequency (MHz)	Self Inductance (nH)	Self Capacitance (pF)	Resistance (mohm)
QFP 64L	14x20	5.08x5.08	100	6.229~8.677	0.847~1.258	259.7~287.4
QFP 208L	28x28	8x8	100	9.811~13.18	1.251~2.561	383~493.2

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

### CROSS-SECTION

