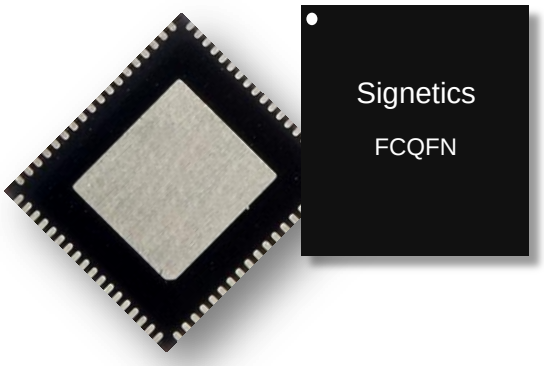
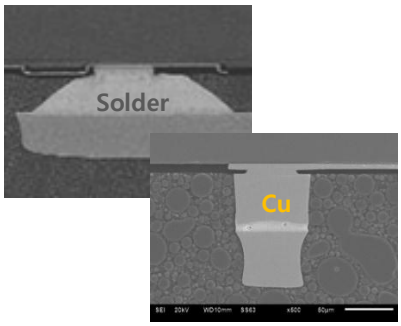
fc-QFN





Description

fc-QFN (Flip-Chip Quad Flat No lead) is a low cost molded package using flip chip interconnections on a copper lead frame substrate.

This package provides small form factor compared with conventional QFP packages. And it also provides better electrical performance due to the short electrical path.

fc-QFN Packages include an exposed Thermal pad to improve heat transfer out of the IC. Exposed thermal pad can give a low inductance ground connection.

Package Sizes	3x3mm ~ 12x12 mm
I/O Counts	8 ~ 164

Features

- Cu pillar with Sn/Ag plated
- Excellent electrical and thermal performance
- Minimum lead pitch 0.4mm
- Up to 12 x 12mm body size available
- Multiple lead rows available
- Body thickness of 1.0mm and below
- Low cost lead frame packaging solution
- Electrical performance achieved by shorter lead lengths
- Cost efficient vs. substrate packages
- Thermal performance enhanced by having the die pad soldered to the PCB
- VQFN Option Thickness: 0.85±0.05mm
- WQFN Option Thickness : 0.75±0.05mm
- UQFN Option Thickness : 0.65±0.05mm
- JECEC Level 1 compliant (defending on body size)

Applications

- Applications include cellular phones
- DSPs, USB Controllers
- HD devices, Micro-Controllers
- Wireless LAN

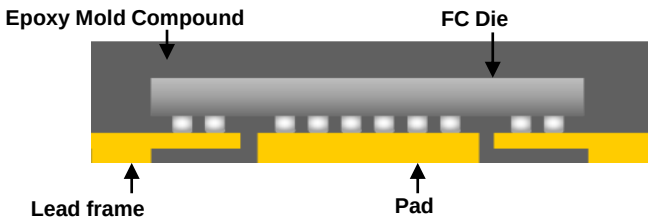
www.signetics.com

Signetics (HQ)
483-3 Buphung-ri Thanhyun-myun, Paju-si Gyungki-do, Republic of Korea 413-840
Tel : (Korean) 82-31-940-7681, (English) 82-31-940-7660 Fax : 82-31-940-7888

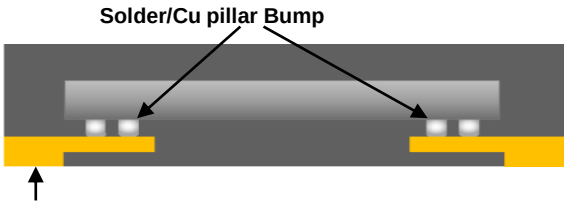
Signetics High Technology, Inc. (USA)
200 Brown Road Suite 300, Fremont, CA 94539-7953
Tel : 408-907-0121 Cell : 925-980-6515 Fax : 408-907-0109

fc-QFN

Exposed pad

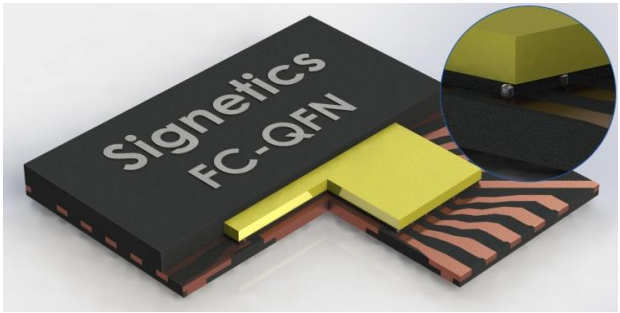


Non-exposed pad



Reliability

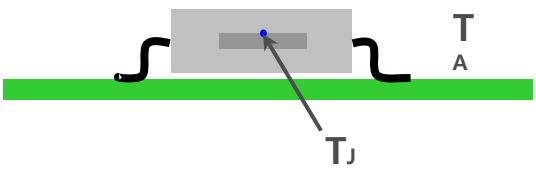
MSL Level	JEDEC Level 3
Temp Cycling	-65C/150°C, 1000 cycles
Autoclave	130°C/85% RH, 2 atm, 96hrs
High Temp Storage	150°C, 1000hrs



Thermal Data

BODY SIZE	Ball Count	Theta JA (°c/w)
4X4mm	24	29.23
6X6mm	44	22.44

- JEDEC STD 2S2P PCB, Still air

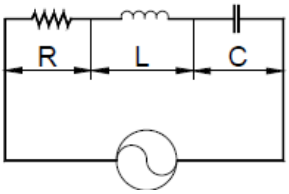


Electrical Data

- 5X5mm Body, 36LD
- Simulation Frequency : 800MHz

Resistance (mΩ)	28~42
Inductance (nH)	0.40~0.65
Capacitance (pF)	0.09~0.12

- Results dependent on body size, die size, and Substrate design etc..



www.signetics.com

Signetics (HQ)
483-3 Buphung-ri Thanhyun-myun, Paju-si Gyungki-do, Republic of Korea 413-840
Tel : (Korean) 82-31-940-7681, (English) 82-31-940-7660 Fax : 82-31-940-7888

Signetics High Technology, Inc. (USA)
200 Brown Road Suite 300, Fremont, CA 94539-7953
Tel : 408-907-0121 Cell : 925-980-6515 Fax : 408-907-0109