QFN

Quad Flat No-Lead Package

ll.

ltiple QFN configurations in either punch
ormats. Punch singulated packages are individually
rom molded strips during final assembly; saw singulated
e assembled in an array format and separated into
omponents during the final sawing operation.

unched singulated package that features a thin, lightweight
excellent heat dissipation capability. QFNp offers a
act, high performance and cost effective solution than
l leadframe packages, particularly for mobile and handheld
.

punch singulated dual row package that features a
higher number of I/O terminal pads in a smaller footprint.
he increased performance capability of the QFNp-dr is
me design which features two rows of staggered I/O
ds with an exposed die pad for die grounding and improved
formance.

v singulated multi-row or QFNs-mr package is a saw
package in a land grid array (LGA) format with square or
body sizes. By using a saw singulated manufacturing
can offer customers higher I/O count in a multi-tier format
ing the same package size.

Specifications

Die Thickness	100-350µm
Wire	
Gold:	18-33µm (0.7-1.3mils) diameter
Copper: QFN	18-33µm (0.7-1.2mils) diameter
Copper: QFN	18-33µm (0.7-1.2mils) diameter
Lead Finish	Matte Tin or preplated Ni/Pd/Au
Marking	Laser
Packing Options	Tape & reel, tube, JEDEC tray

Reliability

Moisture Sensitivity Level	JEDEC Level 3/2/1 (depending on package)
Temperature Cycling	-65°C/150°C, 1000 cycles
High Temperature Storage	150°C, 1000 hrs
Pressure Cooker Test	121°C, 100% RH, 2 atm, 168 hrs
Temperature/Humidity Test	85°C/85% RH, 1000 hrs

Thermal Performance θja (°C/W)

Package Size	Body Size (mm)	Pad Size (mm)	Die Size (mm)	Thermal Performance θja (C/W)	Thermal Vias (on test board)
48L UQFN	7 x 7 x 0.50	5.1 x 5.1	2.26 x 2.26	26.3	25
64L QFN	9 x 9 x 0.85	7.3 x 7.3	4.52 x 4.52	19.2	36
76L QFN-dr	8 x 8 x 0.85	5.28 x 5.28	4.52 x 4.52	26.6	16

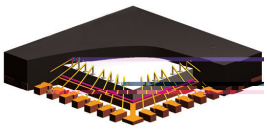
Note: Simulation data for package mounted on 4 layer PCB (per JEDEC JESD51-7) under natural convection as defined in JESD51-2.

Electrical Performance

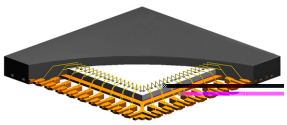
Package Size	Body Size (mm)	Frequency	Length	Inductance (nH)	Capacitance (pF)
48L UQFN	7 x 7 x 0.50	100MHz	Self (short)	0.88	0.191
			Mutual	0.20	0.032
			Self (long)	0.98	0.223
			Mutal	0.27	0.064
76L QFN-dr	8 x 8 x 0.85	100MHz	Self (short)	1.33	0.180
			Mutual	0.45	0.080
			Self (long)	1.68	0.270
			Mutal	0.53	0.110

Note: Results are simulated values per JEDEC EIA/JEP123 standards.

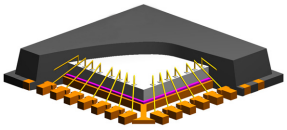
Cross Sections



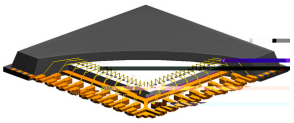
QFNs



QFNs-dr



QFNp



QFNp-dr

Package Configurations

Package Size (mm)	Lead Pitch (mm)	Lead Count
1.0 x 1.3	0.50	4
2 x 2	0.65 / 0.50	4 / 8
2 x 3	0.50	6 / 8
3 x 3	0.80 / 0.65 / 0.50 / 0.40	4 / 8 / 12/ 16 / 20
4 x 4	0.80 / 0.65 / 0.50 / 0.40	12 / 14 / 16 / 20 / 24 / 28
5 x 5	0.80 / 0.65 / 0.50 / 0.40	14 / 16 / 20 / 28 / 32 / 40
6 x 5	0.80 / 0.65 / 0.50	18 / 20 / 22 / 32
6 x 6	0.80 / 0.65 / 0.50 / 0.40	20 / 24 / 28 / 32 / 36 / 38 / 40 / 48
7 x 7	0.80 / 0.65 / 0.50 / 0.40	28 / 32 / 36 / 40 / 44 / 48 / 56
8 x 8	0.80 / 0.65 / 0.50 / 0.40	28 / 32 / 36 / 40 / 44 / 48 / 52/ 56 / 64
9 x 9	0.65 / 0.50 / 0.40	44 / 48 / 56 / 60 / 64 / 72
10 x 10	0.50 / 0.50* / 0.40	64 / 68 / 72 / 84 / 88 / 132*
11 x 11	0.50 / 0.50*	80 / 148*
12 x 12	0.50 / 0.50*	88 / 156*

Note: *Dual Row configuration

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