SOIC

SOIC (Small Outline IC Package) is a leadframe based, plastic encapsulated package that is well suited for applications requiring optimum performance in IC packaging. This industry standard package runs in very-high volume and provides value added, low-cost solutions for a wide range of applications.

FEATURES

- Cu wire interconnect for low cost
- Standard JEDEC package outlines
- Multi-die production capability
- Turnkey test services, including strip test options
- Green materials are standard – Pb-free and RoHS compliant
- Stealth dicing (narrow saw streets)
- Larger/Higher density leadframe strips
- Leadframe roughening for improved MSL capability

PROCESS HIGHLIGHTS

- Au plated PCC wire is standard, Au and Ag wire available
- Wafer backgrinding services available
- Multiple die and die stacking capability
- NiPdAu (PPF) lead finish is standard, matte Sn is optional
- Laser mark on package body

Thermal Performance

Forced Convection, Single-Layer PCB

Package	Body Size (mm)	Pad Size (mm)	θJA at (°C/W) by Velocity (LFPM)		
			0	200	500
8 Ld	4.9 x 3.8	2.3 x 2.3	153.3	128.5	115.5
20 Ld	12.8 x 7.6	5.1 x 4.1	83.2	65.7	57.5

JEDEC standard test boards

Forced Convection, Multi-Layer PCB

Package	Body Size (mm)	Pad Size (mm)	θJA at (°C/W) by Velocity (LFPM)		
			0	200	500
8 Ld	4.9 x 3.8	2.3 x 2.3	112.7	103.3	97.1

Pre-JEDEC standard test boards

Electrical Performance

Simulated Results @ 100 MHz

Package	Body Size (mm)	Pad Size (mm)	Lead	Inductance (nH)	Capacitance (pF)	Resistance (mΩ)
8 Ld	4.9 x 3.8	3.6 x 2.3	Longest	1.25	0.263	8.2
–	–	–	Shortest	0.718	0.218	5.1

Reliability Qualification

Amkor package qualification uses three independent production lots and a minimum of 77 units per test group. All testing includes JSTD-020 moisture preconditioning.

- Moisture sensitivity characterization
  - 8L: JEDEC level 1, 85°C/85% RH, 168 hours
  - Other than 8L: JEDEC level 3, 30°C/60% RH, 192 hours
- uHAST: 130°C/85% RH, no bias, 96 hours
- Temp cycle: -65°C/+150°C, 500 cycles
- High temp storage: 150°C, 1000 hours

SOIC

Services And Support

Amkor has a broad base of resources available to help customers bring quality products to market quickly and at the lowest possible cost.

- Full package characterization
- Thermal, mechanical stress and electrical performance modeling
- Turnkey assembly, test and drop ship
- World-class reliability testing and failure analysis

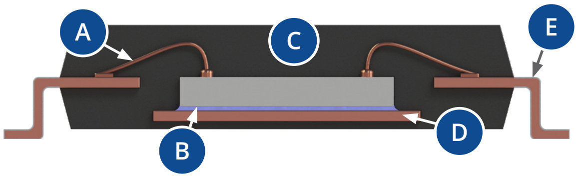
Test Services

- Program generation/conversion
- Wafer probe
- Burn-in capabilities
- -55°C to +165°C test available
- Strip test available

Shipping Options

- Clear anti-static tube, 20 inch
- Tape and reel
- Dry pack
- Drop ship

Cross Section SOIC



A	Wirebond
B	Die attach adhesive
C	Mold compound
D	Die attach pad
E	Cu leadframe

Configuration Options

SOIC Nominal Package Dimensions (Inches)

Package Type	Lead Count	Body Width	Body Length	Body Thickness	Standoff	Overall Height	Lead Pitch	Tip-to-Tip	JEDEC
SOIC (Narrow)	8	0.150	0.194	0.058	0.006	0.064	0.050	0.236	MS-012
	14	0.150	0.342	0.058	0.006	0.064	0.050	0.236	MS-012
	16	0.150	0.391	0.058	0.006	0.064	0.050	0.236	MS-012
SOIC (Wide)	16	0.300	0.407	0.092	0.009	0.101	0.050	0.406	MS-013
	20	0.300	0.505	0.092	0.009	0.101	0.050	0.406	MS-013

Visit amkor.com or email sales@amkor.com for more information.