

SOD123-FL



The SOD123-FL package is part of the FLAT series of compact surface mount packages which allow communication equipment to be miniaturized. The Cu clip structure of interconnect features reduces electrical resistance and enhances thermal performance compared to wirebonded products.

- ▶ This package may also be known as
 - ▷ S-FLAT
 - ▷ SMF
 - ▷ STmite Flat
 - ▷ JEDEC: DO-219 AB

FEATURES

- ▶ Cu connector structure to reduce inductance and resistance
- ▶ Enhanced thermal properties
- ▶ Turnkey with test and packing services
- ▶ Green materials: Pb-free plating & halogen-free mold compound

NEW DEVELOPMENTS

- ▶ Larger/higher-density leadframe strips
- ▶ Environmentally-friendly Pb-free solder paste

PROCESS HIGHLIGHTS

- ▶ Bare copper leadframe with no plating
- ▶ Interconnect: Cu clips technology for better electrical and thermal performance
- ▶ Plating: 100% Matte Sn
- ▶ Marking: Pen-type laser

Applications

The FLAT package series is suitable for small and medium size high-efficiency diode applications.

- ▶ Schottky Barrier Diodes (SBDs)
- ▶ Rectifier diodes
- ▶ Zener diodes

Reliability Qualification

Amkor devices are assembled with proven reliable semiconductor materials.

- ▶ All reliability test includes JSTD-020 moisture pre-conditioning except high temperature storage
- ▶ Moisture sensitivity characterization: JEDEC level 1 85°C/85% RH, 168 hours, IR reflow 260°C 3x
- ▶ uHAST: 130°C/85% RH, no bias, 96 hours
- ▶ Temperature cycle: -65~150°C, 500 cycles
- ▶ Temperature humidity bias: 85°C/85% RH for 1000 hours

Test Services

Amkor offers full turnkey business for all power discrete products with the capability to test various types of power devices including MOSFETs, bipolar transistors, IGBTs, diodes and regulator ICs/intelligent power devices.

- ▶ Amkor power discrete test capability
 - ▷ Static test (DC)
 - ▷ Dynamic test (AC, switching/trr, capacitance/Rg)
 - ▷ Destruction test (inductive load/VSUS, surge)
 - ▷ Thermal resistance (ΔV_{DS} , ΔmV , etc.)
- ▶ Program generation/conversion
- ▶ Failure analysis
- ▶ Available test/handling technology
- ▶ Integrated marking, vision inspection and tape & reel services

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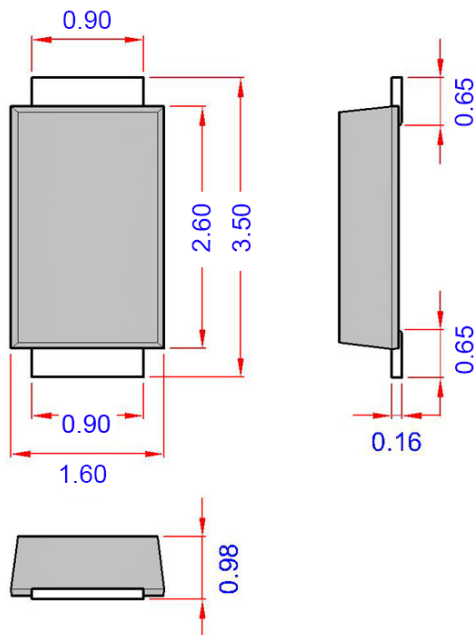
Standard Materials

- ▶ Leadframe: Bare copper
- ▶ Die attach: Solder paste
- ▶ Interconnect: Cu clips
- ▶ Mold compound: Halogen-free

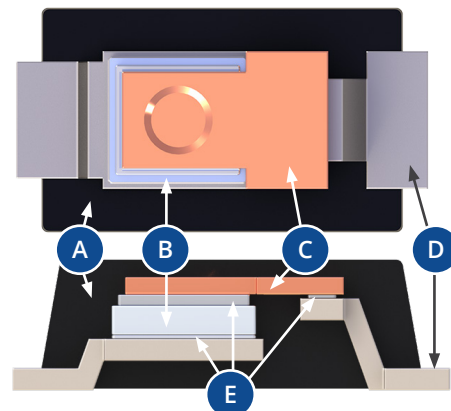
Shipping

- ▶ Tape and reel packing
 - ▷ 3000 pcs per reel
 - ▷ Tape width: 8 mm
 - ▷ Reel Φ = 180 mm
- ▶ Barcode packing label
- ▶ Drop ship

Package Outline Drawing



Cross Section



- A Mold compound
- B Die
- C Cu clip
- D Leadframe
- E Solder paste



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