

PSMC



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

The PSMC package is part of the FLAT series of compact surface mount packages which allow miniaturization. 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
 - ▷ TO277-A
 - ▷ SMPC
 - ▷ CFP15

Application

With both 2 and 3 lead versions available, the PSMC package is suitable for high-efficiency diode as well as transistor applications.

- ▶ Schottky Barrier Diodes (SBDs)
- ▶ Rectifier & Zener Diodes
- ▶ Transient Voltage Suppressors (TVS)
- ▶ MOSFETs

Reliability Qualification

Amkor devices are assembled with proven reliable semiconductor materials.

- ▶ All reliability test include 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, 2000 cycles
- ▶ High temperature storage: 150°C for 1000 hours

Test Services

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

PSMC

Standard Materials

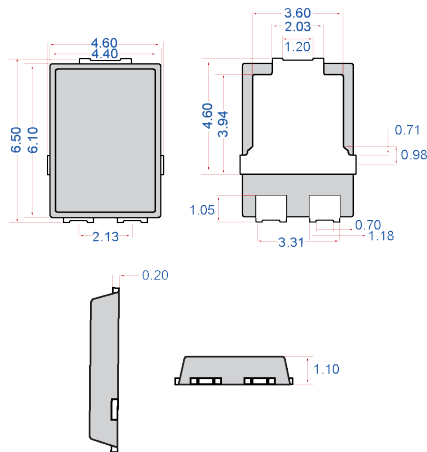
- ▶ Leadframe: Bare copper
- ▶ Die attach: Solder paste
- ▶ Interconnect: Cu clips
- ▶ Mold compound: Halogen-free

Shipping

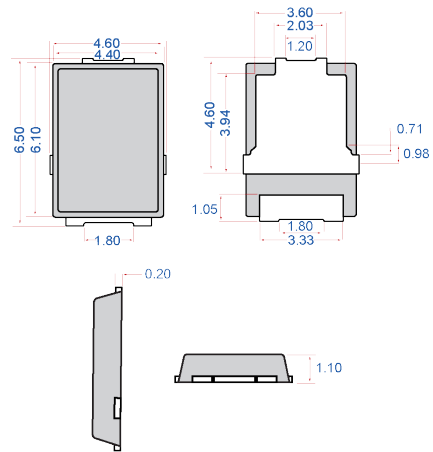
- ▶ Tape and reel packing
 - ▷ 6000 pcs per reel
 - ▷ Tape width: 12 mm
 - ▷ Reel Φ = 330 mm
- ▶ Barcode packing label
- ▶ Drop ship

Package Outline Drawing

3 Lead

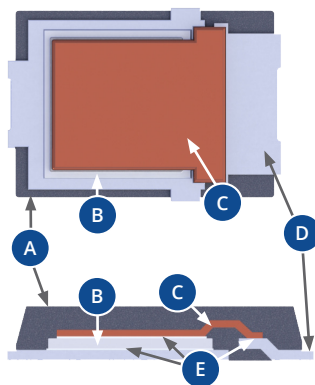


2 Lead (Future Development)



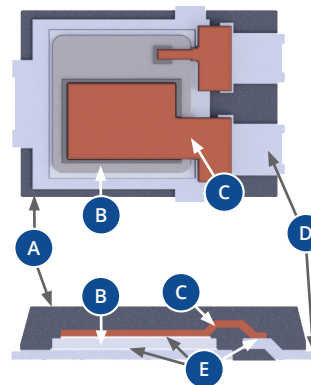
Cross Sections (3 Lead)

Single Clip



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

Dual Clip



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



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