



Features

- ▶ Cu Clip interconnect for better heat dissipation efficiency
- ▶ Mounted package height reduced by 2.8 mm vs. standard TO-220NIS
- ▶ 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 for better electrical and thermal performance
- ▶ Plating: 100% matte Sn
- ▶ Marking: Pen type laser

TO-220FP

TO-220FP (Full Pak) is a full-pack version of TO-220, which has a better heat dissipation efficiency through Cu clip structure, and with mounted package height reduced by 2.8 mm compared to conventional TO-220NIS package.

Applications

TO-220FP is suitable for medium to high voltage MOSFETs and IGBTs used for:

- ▶ Switching power supplies
- ▶ AC adapters
- ▶ Motor drivers
- ▶ Flat panel display

Reliability Qualification

Amkor devices are assembled with proven reliable semiconductor materials.

- ▶ Temperature & Humidity Storage, Ta = 85°C/RH = 85%, 1000 hrs
- ▶ High Temperature Storage, Ta = 150°C, 1000 hrs
- ▶ Pressure Cooker, Ta = 121°C/RH = 100%/P = 2 atm, 100 hrs
- ▶ Temperature Cycle, -45~150°C, 1000 cycles

Test Service

Amkor offers full turnkey business for all power discrete products. We have 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/V_{SUS}, I Latch, Surge, Isolation/VIL)
 - ▷ Thermal Resistance (ΔV_{DS} , ΔmV , etc.)
- ▶ Program generation/conversion
- ▶ Failure analysis
- ▶ Available test/handling technology
- ▶ Integrated marking, vision inspection and tape & reel services

TO-220FP

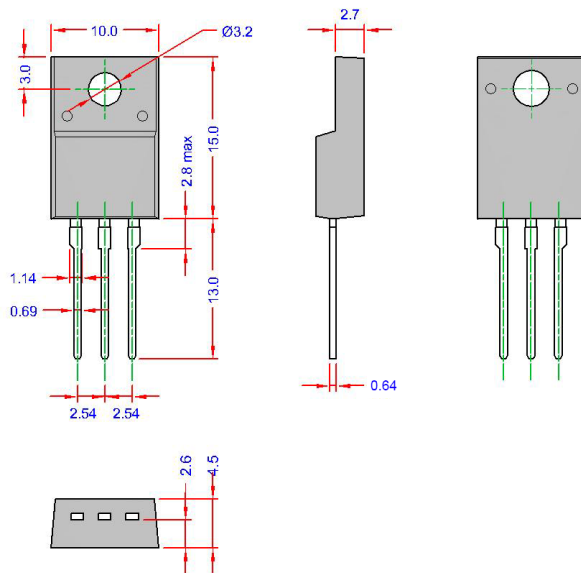
Standard Materials

- ▶ Leadframe: Bare copper
- ▶ Die attach: Solder paste
- ▶ Interconnect: Dual Cu clips
- ▶ Mold compound:
 - ▷ Both halogen and halogen free

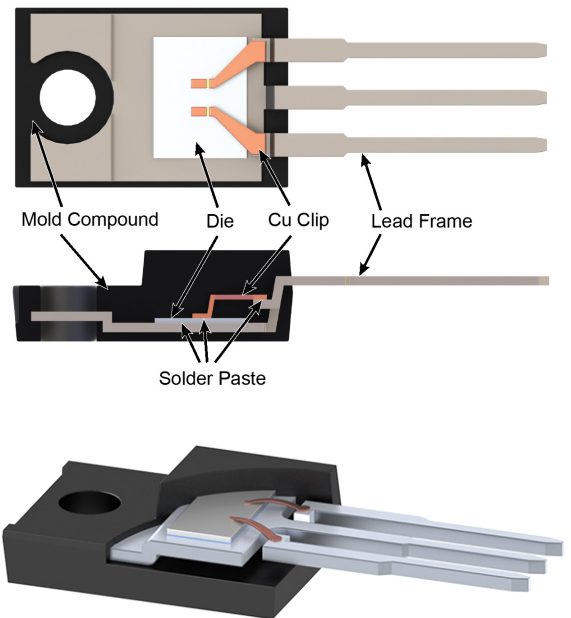
Shipping

- ▶ Tube or loose packing
 - ▷ Tube = 1500 pcs or 2500 pcs per box
 - ▷ Loose = 500 pcs per box
- ▶ Barcode packing label
- ▶ Drop ship

Package Outline Drawing



Cross-section



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