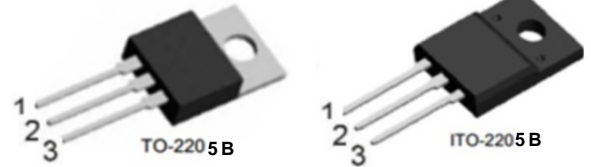




Features

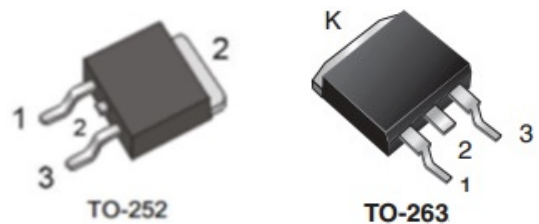
- ◇ Trench Schottky Barrier technology
- ◇ Ultra low forward voltage drop
- ◇ Low power loss,high efficiency
- ◇ Excellent low reverse leakages
- ◇ Excellent high temperature stability
- ◇ High current capability
- ◇ High forward surge capability
- ◇ Lead free finish ,Rohs and WEEE compliant.

Reverse Voltage: 45Volts
 Forward Current: 20.0Amperes



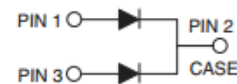
Applications

- ◇ Switching diode
- ◇ Switching mode power supply(SMPS)
- ◇ DC/DC converter
- ◇ LED lighting
- ◇ Adapter for notebook and game station



Mechanical Data

- ◇ Moisture Sensitivity: MSL Level 1,per J-STD-020
- ◇ Terminals:Matte Tin Finish.
Solderable per MIL-STD-202 Method 208
- ◇ Case Material: Molded Plastic;
Molding compound meet UL Flammability Classification Rating 94V-0
- ◇ Case:JEDEC TO-220AB,ITO-220AB,TO-252,TO-263



MAXIMUM RATING

Ratings at 25°C ambient temperature unless otherwise specified.

| PARAMETER | SYMBOL | VALUE | UNITS | |
|--|-----------------|-----------------|------------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 45 | V | |
| Maximum RMS voltage | V_{RWS} | 32 | V | |
| Maximum DC blocking voltage | V_{DC} | 45 | V | |
| Maximum average forward rectified current | $I_{F(AV)}$ | 20 | A | |
| per device Per diode | | 10 | | |
| Peak forward surge current 8.3ms half-sine-wave | I_{FSM} | 200 | A | |
| I^2t Rating for Fusing($t < 8.3ms$) | I^2t | 166 | A ² s | |
| Typical Thermal Resistance | TO-220AB | $R_{\theta JA}$ | 12.0 | °C/W |
| | | $R_{\theta JC}$ | 2.5 | °C/W |
| | | $R_{\theta JL}$ | 3.0 | °C/W |
| | ITO-220AB | $R_{\theta JC}$ | 4.5 | °C/W |
| | TO-252 | $R_{\theta JC}$ | 2.5 | °C/W |
| TO-263 | $R_{\theta JC}$ | 2.5 | °C/W | |
| Typical junction capacitance: $V_R=4.0v, f=1MHz$ | CJ | 500 | pF | |
| Junction temperature | T_J | 150 | °C | |
| Storage temperature range | TSTG | -55~150 | °C | |



ELELTRICAL CHARACTERISTICS

| PARAMETER | TEST CONDITIONS | SYMBOL | VALUE | | | UNITS | |
|--|-------------------|-----------------|-------|-------|-------|-------|---|
| | | | Min | Typ | Max | | |
| Breakdown voltage per diode(min) | IR=0.5mA | VB _R | 45 | - | - | V | |
| Instantaneous forward voltage | IF=10A per leg | TA= 25°C | VF | - | 0.50 | 0.52 | V |
| | | TA= 100°C | VF | - | 0.48 | - | V |
| | | TA= 125°C | VF | - | 0.45 | - | V |
| | IF=5A per leg | TA= 25°C | VF | - | 0.42 | - | V |
| | | TA= 100°C | VF | - | 0.38 | - | V |
| | | TA= 125°C | VF | - | 0.36 | - | V |
| Maximum DC reverse current @Rated DC Blocking Vlotage | TA= 25°C | IR | - | 80.0 | 200 | μ A | |
| | TA=125°C | IR | - | 15000 | 20000 | μ A | |

ORDERING PACK INFORMATION

| Part No. | Packge | Packing | Quatity(pcs/box) | Quatity(pcs/carton) |
|--------------|---------|--------------|------------------|---------------------|
| MBR2045LCT | TO-220 | 50pcs/Tube | 1000 | 5000 |
| MBRF2045LCT | ITO-220 | 50pcs/Tube | 1000 | 5000 |
| MBRD2045LCT | TO-252 | 80pcs/Tube | 4000 | 40000 |
| MBRD2045LCT | TO-252 | 2500pcs/Reel | 2500 | 12500/25000 |
| MBRB2045LCT | TO-263 | 50pcs/Tube | 1000 | 5000/10000 |
| MBRB12045LCT | TO-263 | 800pcs/Reel | 800 | 4000/8000 |



RATING AND CHARACTERISTICS CURVES

FIG.1-FORWARD CURRENT DERATING CURVE

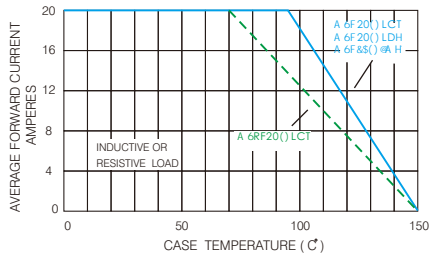


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

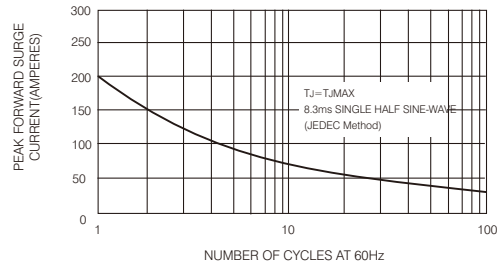


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

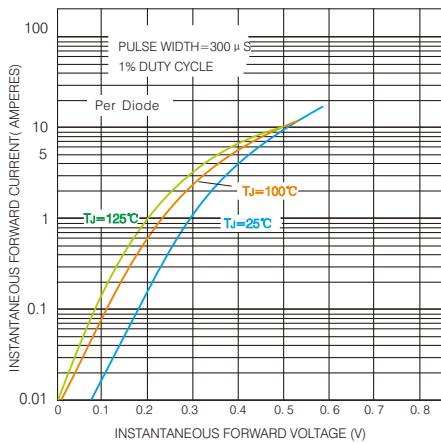


FIG.4-TYPICAL REVERSE CHARACTERISTICS

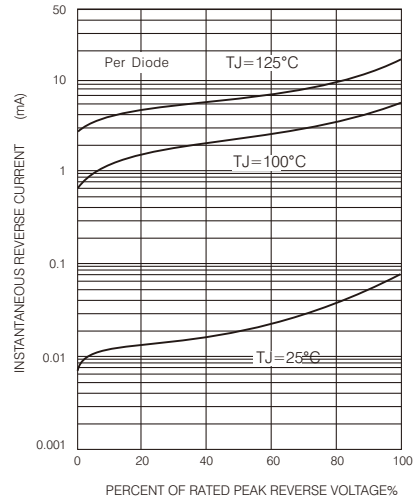
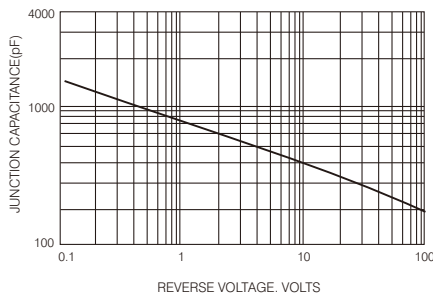


FIG.5-TYPICAL JUNCTION CAPACITANCE

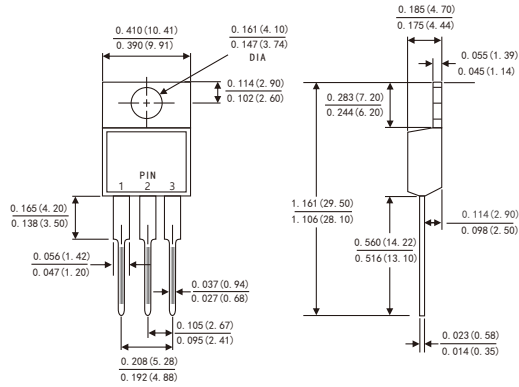




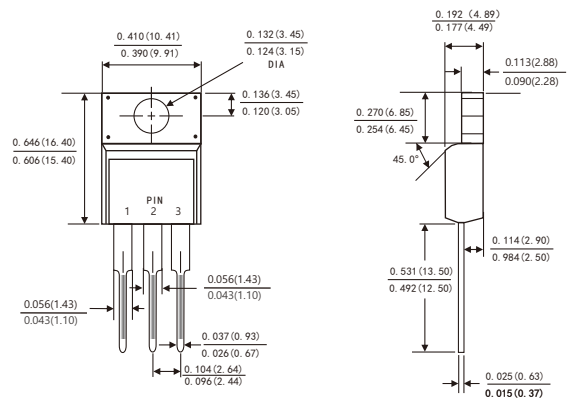
PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

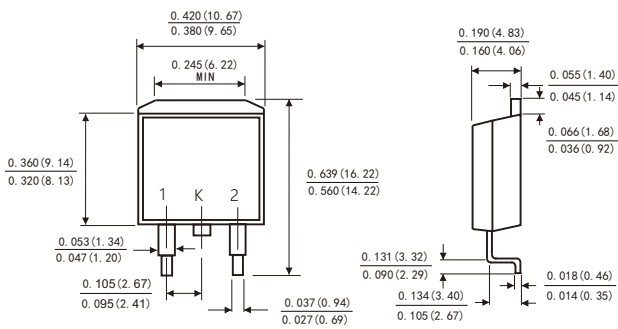
TO-220AB



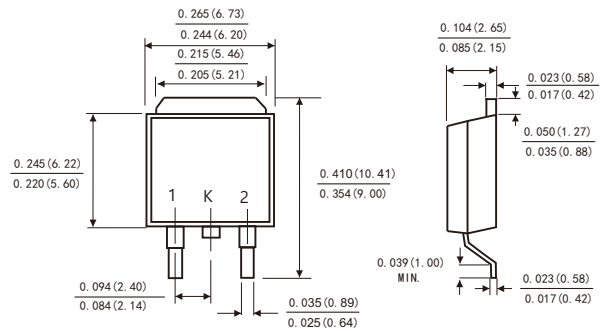
ITO-220AB



TO-263

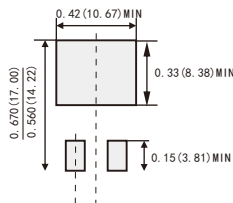


TO-252



Suggested Pad Layout

(TO-263)



Suggested Pad Layout

(TO-252)

