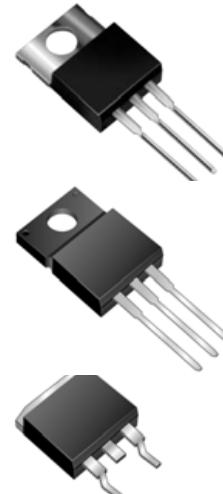




Dual Schottky Barrier Rectifier  
Reverse Voltage 45Volts , Forward Current 10A

## Features

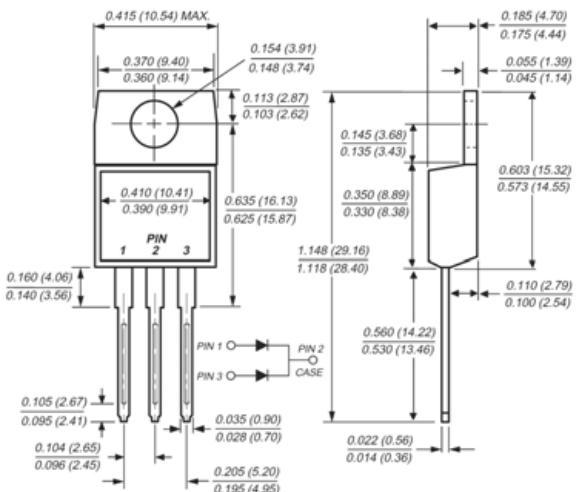
- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Dual rectifier construction, positive center tap
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Guardring for overvoltage protection
- ◆ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds, 0.25" (6.35mm) from case



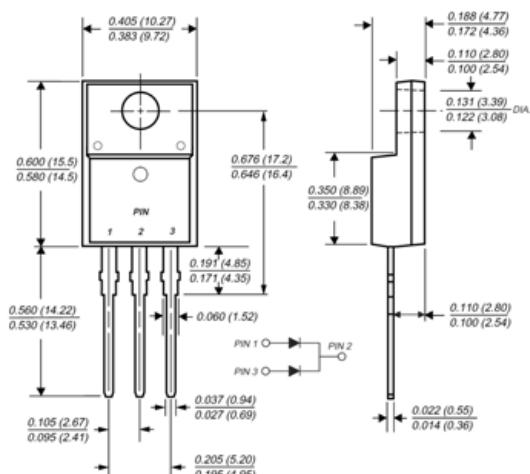
## Mechanical Data

- ◆ Case: JEDEC TO-220AB, TO-220F , TO-263AB molded plastic body
- ◆ Terminals: Plated leads, solderable per MIL-STD-750, Method 2026
- ◆ Polarity: As marked
- ◆ Mounting Position: Any
- ◆ Mounting Torque: 10 in-lbs maximum
- ◆ Weight: 0.08 ounce, 2.24 grams

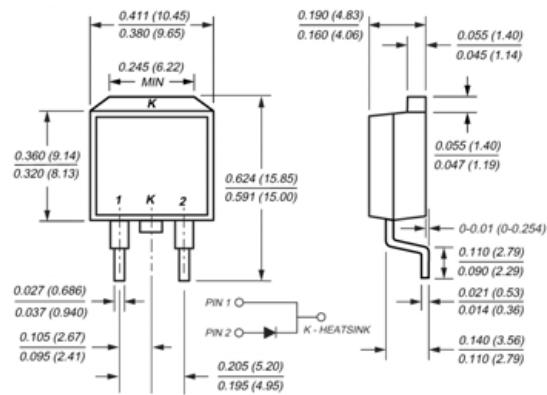
### TO-220AB



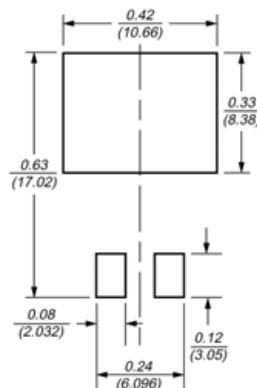
### TO-220F



### TO-263AB(D<sup>2</sup>PAK)



### Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)



## Maximum Ratings and Electrical Characteristics

(  $T_c = 25^\circ\text{C}$  unless otherwise noted )

MAXIMUM RATINGS and ELECTRICAL CHARACTERISTICS( $\text{TC}=25^\circ\text{C}$ unless otherwise noted )				
PARAMETER	TEST CONDITIONS		SYMBOL	MBRF1045CT
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>		45
Working peak reverse voltage		V <sub>RWM</sub>		45
Maximum DC blocking voltage		V <sub>DC</sub>		45
Maximum average forward rectified current at $T_c=105^\circ\text{C}$ total device per diode		I <sub>F(AV)</sub>	10 5	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode		I <sub>FSM</sub>	125	A
Peak repetitive reverse current per leg at $t_p=2.0\text{us}$ , 1KHz		I <sub>RRM</sub>	0.5	A
Voltage rate of change (rated VR)		DV/dt	10000	V/us
Operating junction temperature range		T <sub>J</sub>	−55 to+150	°C
Storage temperature range		T <sub>TSG</sub>	−55 to+150	°C
Isolation voltage (TO220F only) from terminal to heatsink $t = 1 \text{ sec}$		V <sub>AC</sub>	1500	V
Maximum instantaneous forward voltage per leg	I <sub>F</sub> =5A I <sub>F</sub> =5A	T <sub>C</sub> =25°C T <sub>C</sub> =125°C	V <sub>F</sub>	0.70 0.65
Maximum reverse current per leg at working peak Reverse voltage		T <sub>J</sub> =25°C T <sub>J</sub> =100°C	I <sub>R</sub>	100 15
				uA mA

Thermal Characteristics  $T_a=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Max	Unit
R <sub>θJC</sub>	Thermal Resistance, Junction to Case per Leg	4.0	°C /W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient per Leg	62.5	°C /W

### Note:

1. Screw mounting with 4-40 screw, where washer diameter is  $\leq 4.9\text{mm}(0.19 "$  )
2. Pulse test: 300us pulse width, 1% duty cycle

## RATINGS AND CHARACTERISTIC CURVES

(  $T_A = 25^\circ\text{C}$  unless otherwise noted )

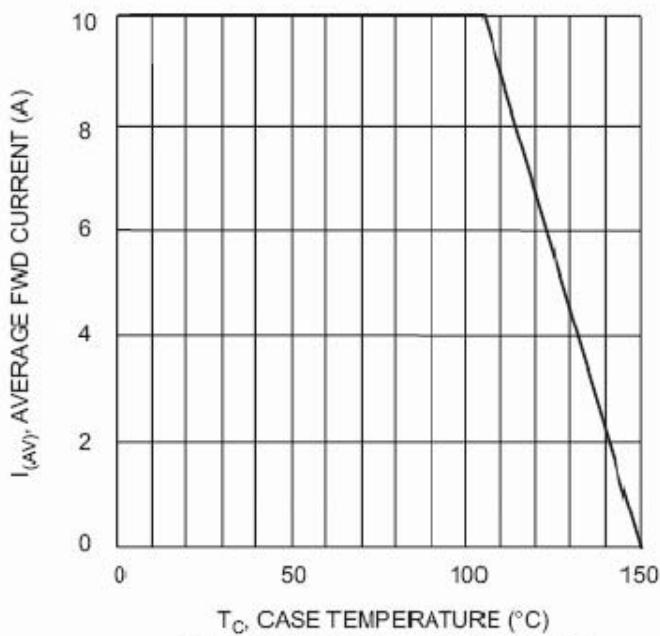


Fig. 1 Forward Current Derating Curve

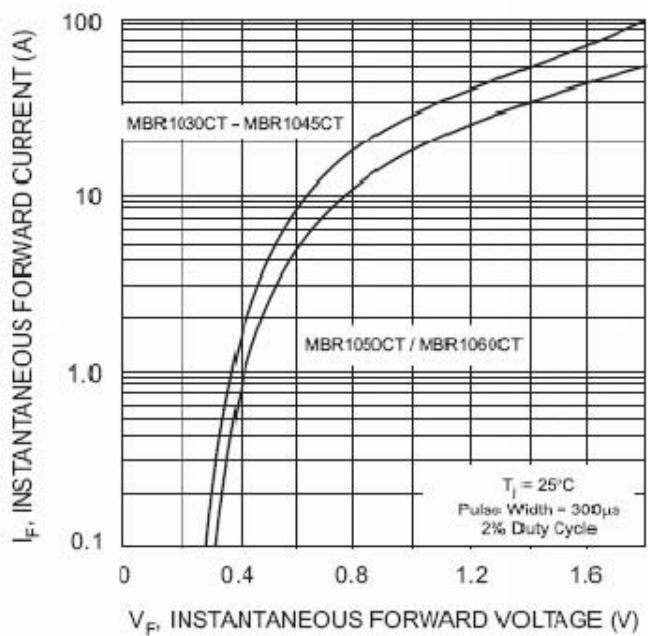


Fig. 2 Typical Forward Characteristics

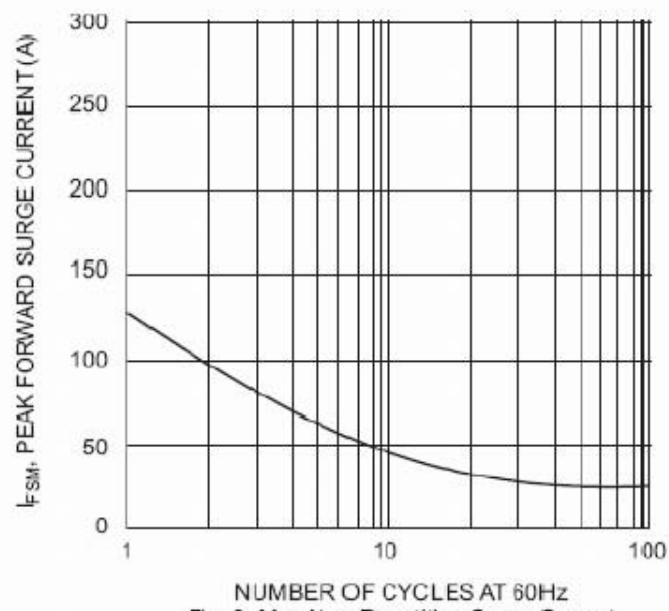


Fig. 3 Max Non-Repetitive Surge Current

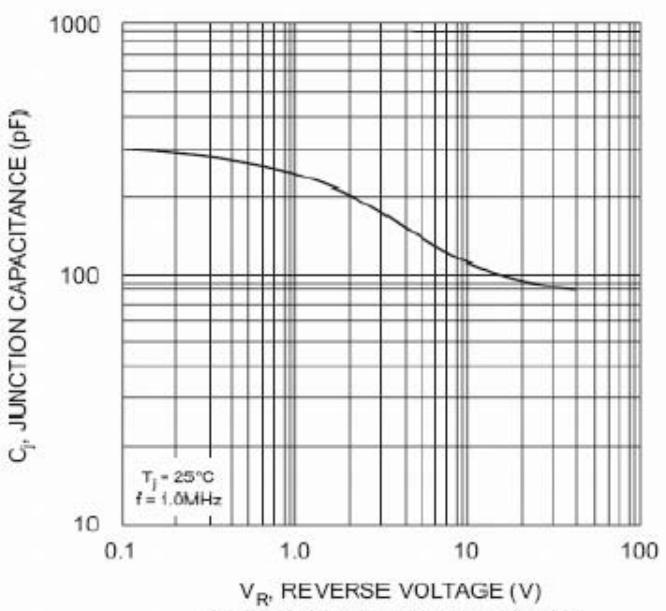


Fig. 4 Typical Junction Capacitance