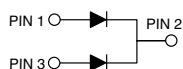
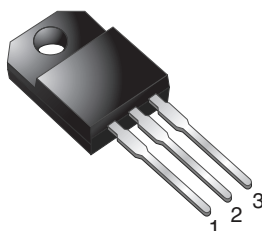


Dual High Voltage Trench MOS Barrier Schottky Rectifier

TMBS®
ITO-220AB


FEATURES

- Trench MOS Schottky technology
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT
HALOGEN
FREE
Available

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters or polarity protection application.

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 5.0 A
V_{RRM}	90 V, 100 V
I_{FSM}	120 A
V_F	0.75 V
T_J max.	150 °C
Package	ITO-220AB
Circuit configuration	Common cathode

MECHANICAL DATA

Case: ITO-220AB

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002

E3 and M3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	MBRF1090CT	MBRF10100CT	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	90	100	V
Working peak reverse voltage	V_{RWM}	90	100	V
Max. DC blocking voltage	V_{DC}	90	100	V
Max. average forward rectified current at $T_C = 105\text{ }^{\circ}\text{C}$	total device	10		A
	per diode	5.0		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	120		A
Non-repetitive avalanche energy at $T_J = 25\text{ }^{\circ}\text{C}$, $L = 60\text{ mH}$ per diode	E_{AS}	60		mJ
Peak repetitive reverse current at $t_p = 2\text{ }\mu\text{s}$, 1 kHz, $T_J = 38\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ per diode	I_{RRM}	0.5		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/ μs
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150		$^{\circ}\text{C}$
Isolation voltage from terminal to heatsink with $t = 1\text{ min}$	V_{AC}	1500		V



ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MBRF1090CT	MBRF10100CT	UNIT
Maximum instantaneous forward voltage per diode ⁽¹⁾	I _F = 5.0 A	T _C = 125 °C	V _F	0.75		V
	I _F = 5.0 A	T _C = 25 °C		0.85		
Maximum reverse current per diode at working peak reverse voltage ⁽²⁾		T _J = 25 °C	I _R	100		μA
		T _J = 100 °C		6.0		mA

Notes⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle⁽²⁾ Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBRF1090CT	MBRF10100CT	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	6.8		$^{\circ}\text{C/W}$

ORDERING INFORMATION (EXAMPLE)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	MBRF10100CT-M3/4W	1.75	4W	50/tube	Tube
ITO-220AB	MBRF10100CT-E3/4W	1.75	4W	50/tube	Tube

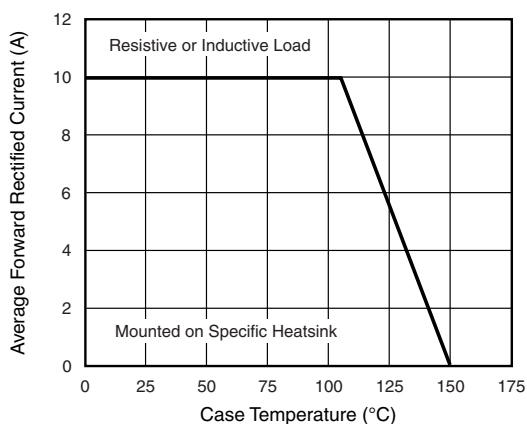
RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

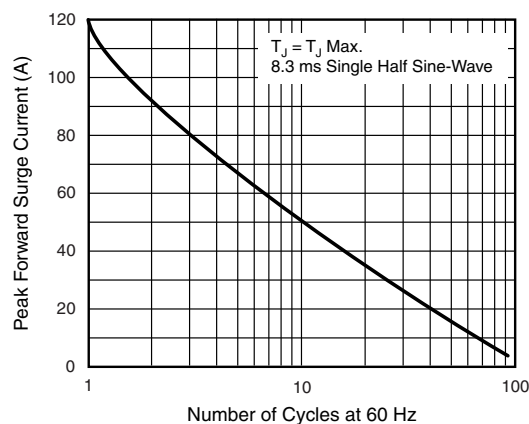


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

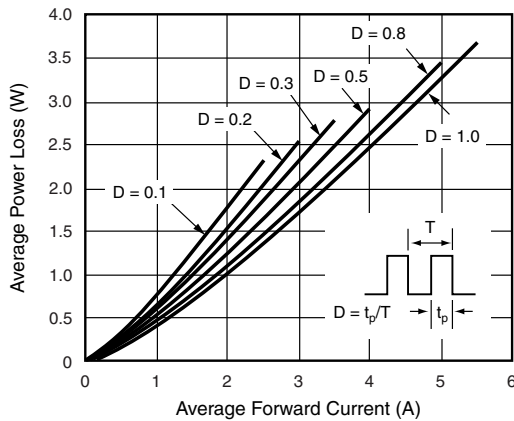


Fig. 3 - Forward Power Loss Characteristics Per Diode

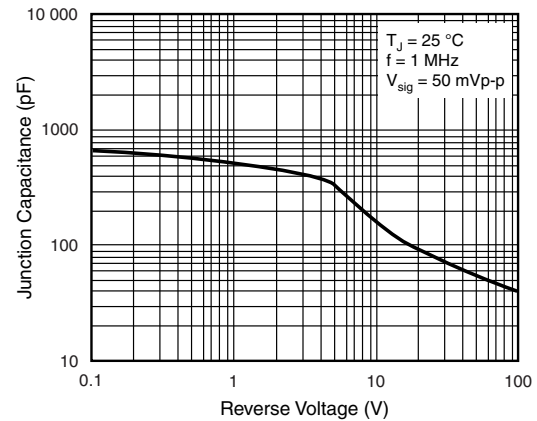


Fig. 6 - Typical Junction Capacitance Per Diode

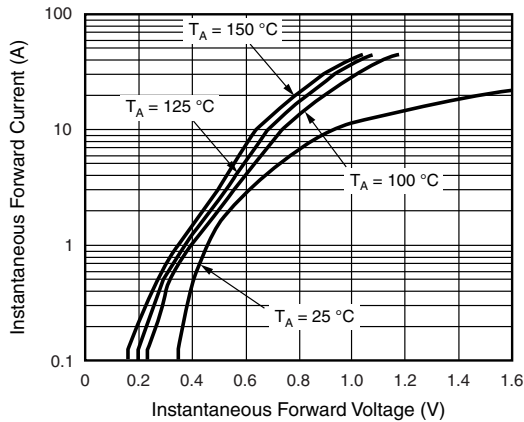


Fig. 4 - Typical Instantaneous Forward Characteristics Per Diode

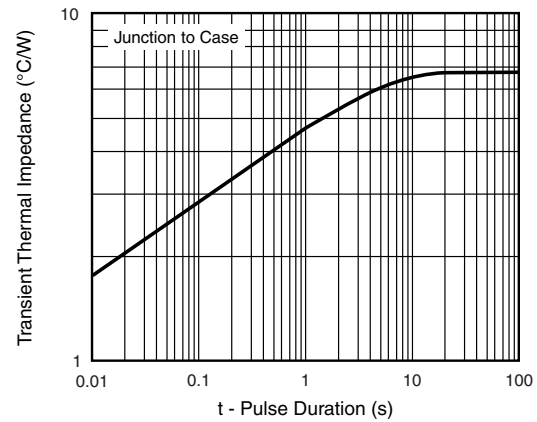


Fig. 7 - Typical Transient Thermal Impedance Per Diode

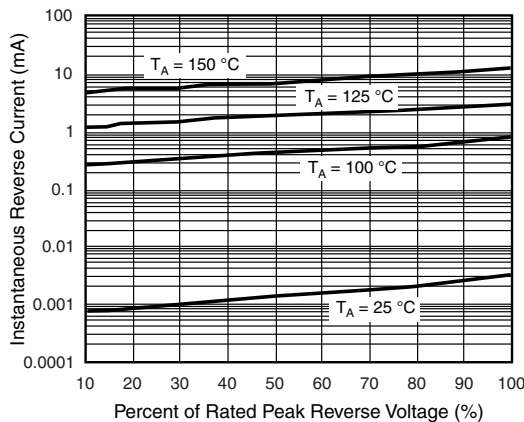
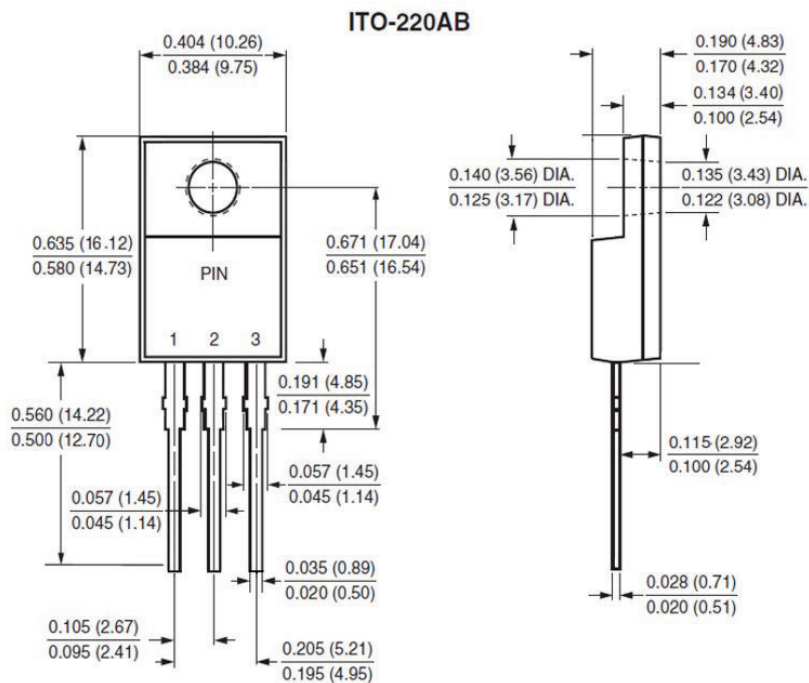


Fig. 5 - Typical Reverse Characteristics Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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