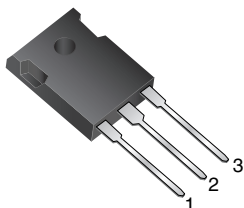


Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



TO-3P (TO-247AD)



RoHS
COMPLIANT

FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- 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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-3P (TO-247AD)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
V_{RRM}	90 V, 100 V
I_{FSM}	265 A
V_F	0.67 V
I_R	5.0 μ A
T_J max.	175 °C
Package	TO-3P (TO-247AD)
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MBR30H90PT	MBR30H100PT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	90	100	V
Working peak reverse voltage	V_{RWM}	90	100	V
Maximum DC blocking voltage	V_{DC}	90	100	V
Maximum average forward rectified current total device per diode	$I_{F(AV)}$	30		A
		15		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	265		A
Peak repetitive reverse surge current at $t_p = 2 \mu s$, 1 kHz per diode	I_{RRM}	1.0		A
Non-repetitive avalanche energy ($I_{AS} = 0.5 A$, $L = 60 mH$) per diode	E_{AS}	7.5		mJ
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 +175		$^{\circ}C$

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

PARAMETER	SYMBOL	TEST CONDITIONS		MBR30H90PT	MBR30H100PT	UNIT
Maximum instantaneous forward voltage per diode	$V_F^{(1)}$	$I_F = 15\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.82		V
		$I_F = 15\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.67		
		$I_F = 30\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.93		
		$I_F = 30\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.80		
Maximum instantaneous reverse current at rated DC blocking voltage per diode	$I_R^{(1)}$		$T_J = 25\text{ }^{\circ}\text{C}$	5.0		μA
			$T_J = 125\text{ }^{\circ}\text{C}$	6.0		mA

Note(1) Pulse test: 300 μs pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	MBR30H90PT	MBR30H100PT	UNIT
Thermal resistance, junction to case per diode	$R_{\theta JC}$	1.6		$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD	MBR30H100PT-E3/4W	6.13	45	30/tube	Tube

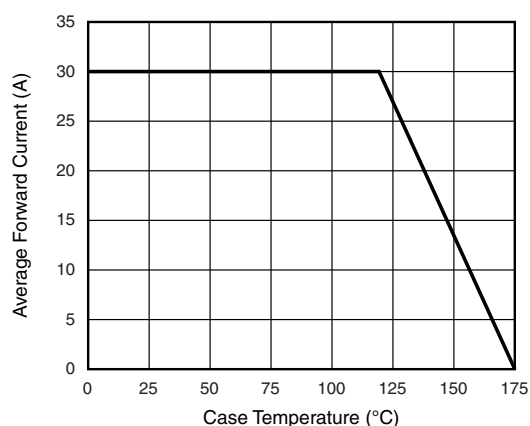
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Derating Curve

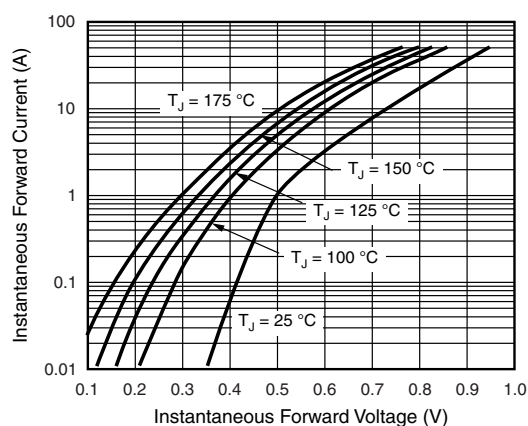


Fig. 2 - Typical Instantaneous Forward Characteristics Per Diode

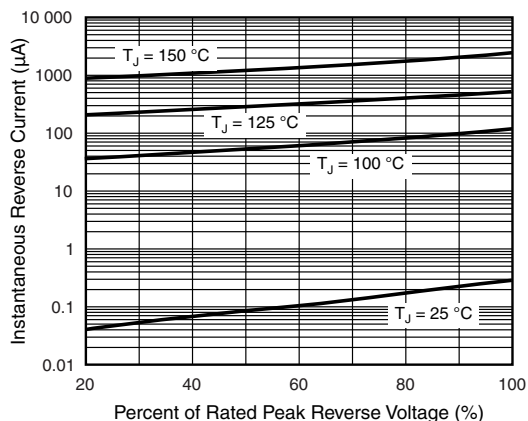


Fig. 3 - Typical Reverse Characteristics Per Diode

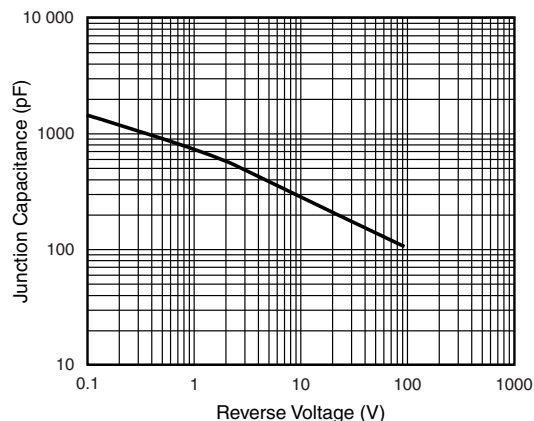
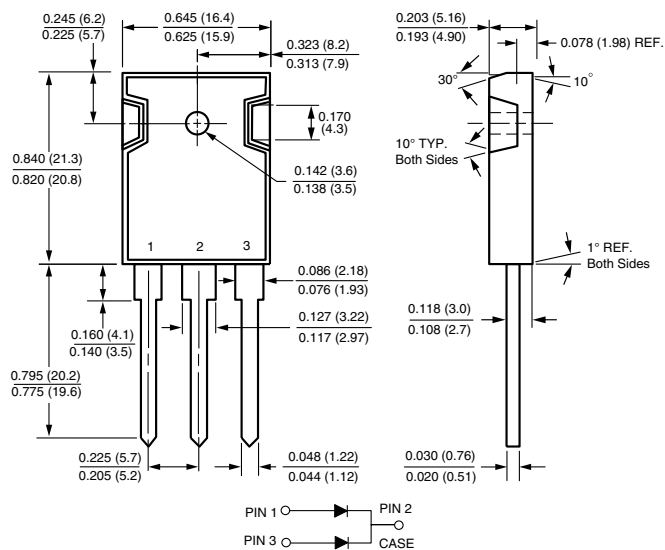


Fig. 4 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-3P (TO-247AD)





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