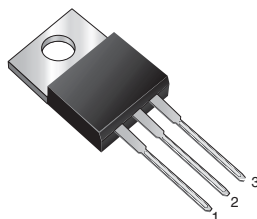


Dual Common-Cathode Schottky Rectifier

TO-220AB


FEATURES

- Guardring for overvoltage protection
- 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

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-220AB

Molding compound meets UL 94V-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}	40 V
E_{AS}	20 mJ
I_{FSM}	280 A
V_F at $I_F = 15$ A	0.413 V
T_J max.	150 °C

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

PARAMETER	SYMBOL	M30L40C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	40	V
Maximum average forward rectified current (Fig.1)	$I_{F(AV)}$	30	A
		15	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	280	A
Peak repetitive reverse current per diode at $t_p = 2$ μ s, 1 kHz	I_{RRM}	1.0	A
Non-repetitive avalanche energy at 25 °C, $I_{AS} = 2$ A, $L = 10$ mH per diode	E_{AS}	20	mJ
Voltage rate of change (rated V_R)	dV/dt	10 000	V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 150	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode	V_F ⁽¹⁾	$I_F = 8\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	0.430	V
		$I_F = 15\text{ A}$		0.490	
		$I_F = 30\text{ A}$		0.595	
		$I_F = 8\text{ A}$	$T_J = 125\text{ }^{\circ}\text{C}$	0.331	
		$I_F = 15\text{ A}$		0.413	
		$I_F = 30\text{ A}$		0.572	
Reverse current per diode	I_R ⁽²⁾	$V_R = 40\text{ V}$	$T_J = 25\text{ }^{\circ}\text{C}$	88	μA
			$T_J = 100\text{ }^{\circ}\text{C}$	12	mA
Typical junction capacitance per diode	C_J	4.0 V, 1 MHz	750	-	pF

Note
⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width $\leq 40\text{ ms}$
THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	M30L40C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
M30L40C-E3/4W	2.068	4W	50/tube	Tube

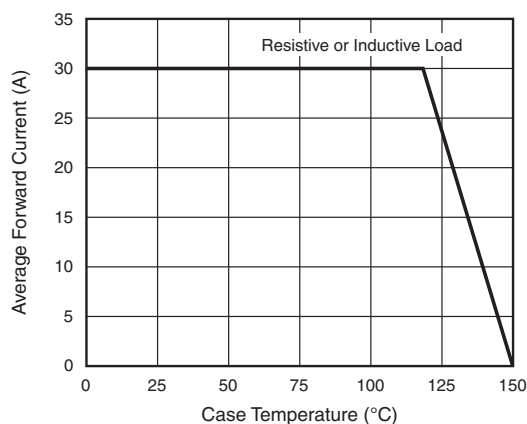
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

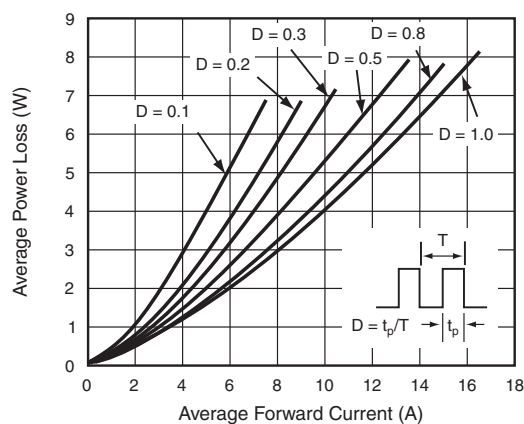


Fig. 2 - Forward Power Loss Characteristics Per Diode

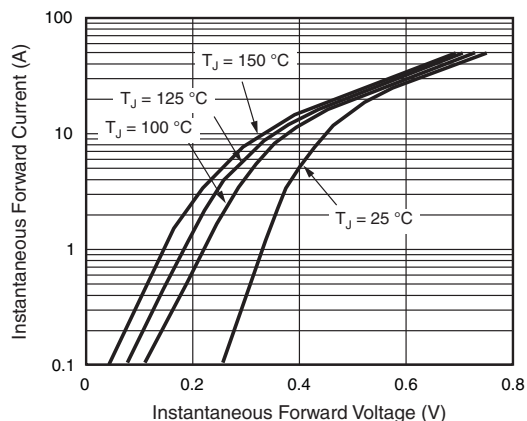


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

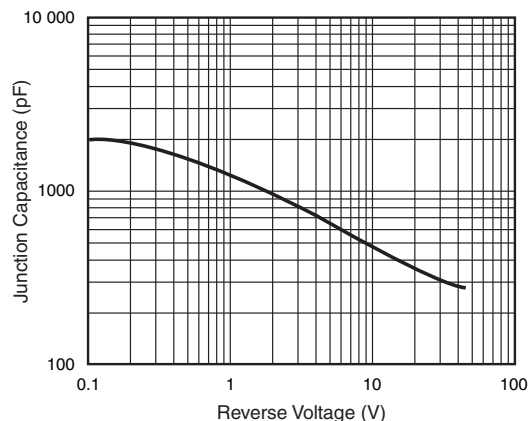


Fig. 5 - Typical Junction Capacitance Per Diode

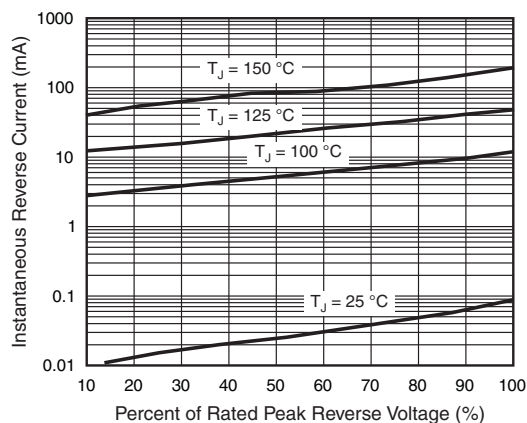


Fig. 4 - Typical Reverse Characteristics Per Diode

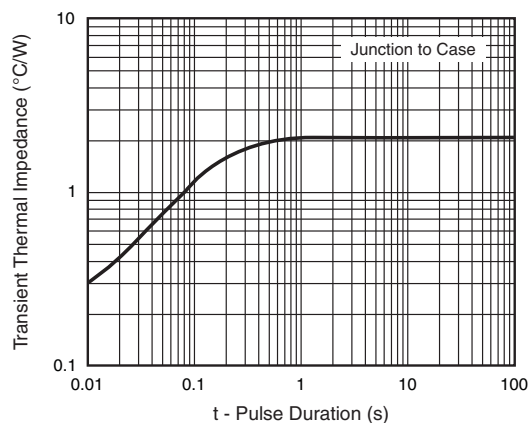
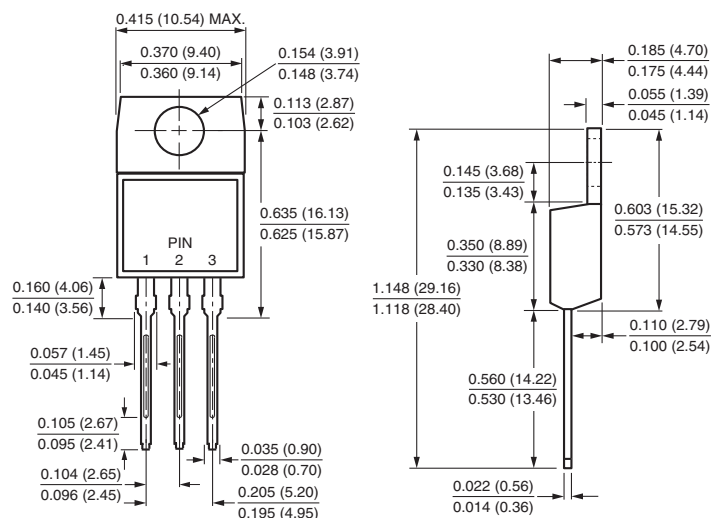


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB





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