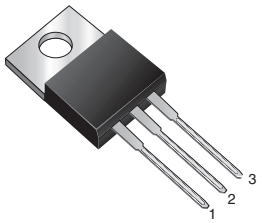
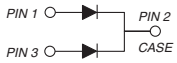
Dual Common Cathode Schottky Rectifier

TO-220AB





FEATURES

- Power pack
- 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.

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
Package	TO-220AB
Diode variations	Common cathode

MECHANICAL DATA

Case: TO-220AB

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

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)	total device	$I_{F(AV)}$	30	A
	per diode		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 µs, 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/µs
Operating junction and storage temperature range		T_J, T_{STG}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage per diode	V_F (1)	I_F = 8 A	T_J = 25 °C	0.430	-	V
		I_F = 15 A		0.490	0.55	
		I_F = 30 A		0.595	-	
		I_F = 8 A	T_J = 125 °C	0.331	-	
		I_F = 15 A		0.413	0.48	
		I_F = 30 A		0.572	-	
Reverse current per diode	I_R (2)	V_R = 40 V	T_J = 25 °C	88	360	µA
			T_J = 100 °C	12	45	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 ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**M30L40C**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$	2.0	°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 °C unless otherwise noted)

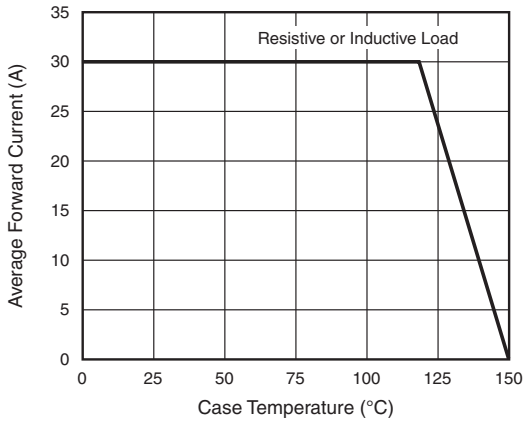


Fig. 1 - Forward Current Derating Curve

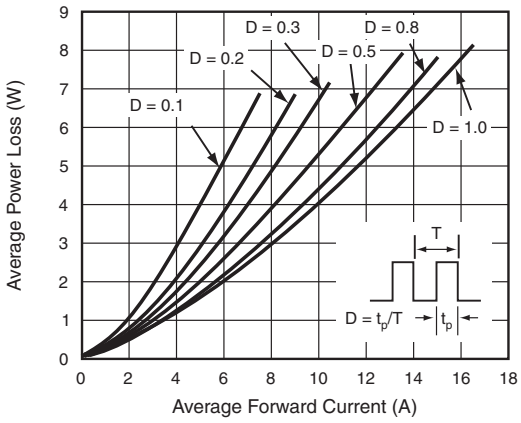


Fig. 2 - Forward Power Loss Characteristics Per Diode

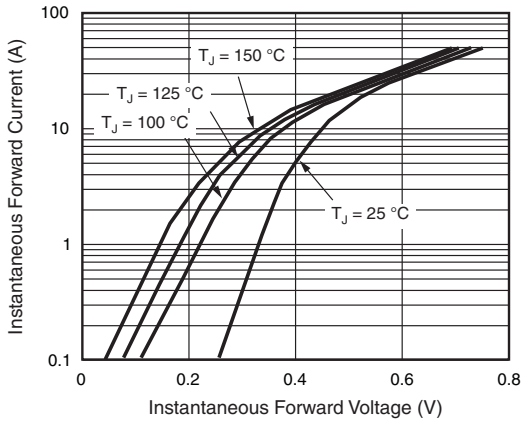


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

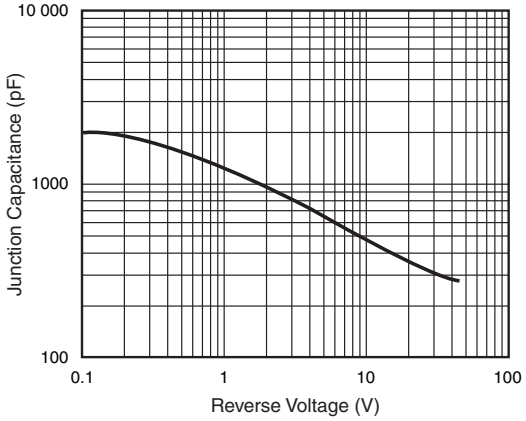


Fig. 5 - Typical Junction Capacitance Per Diode

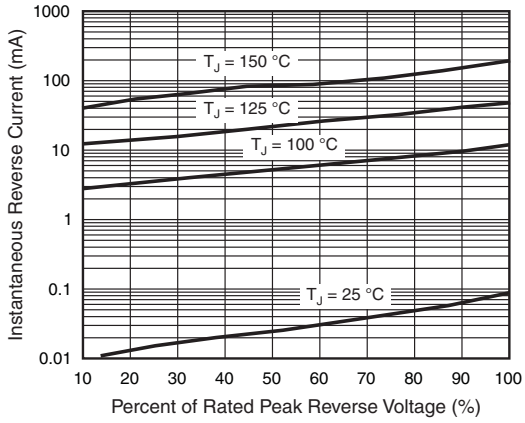


Fig. 4 - Typical Reverse Characteristics Per Diode

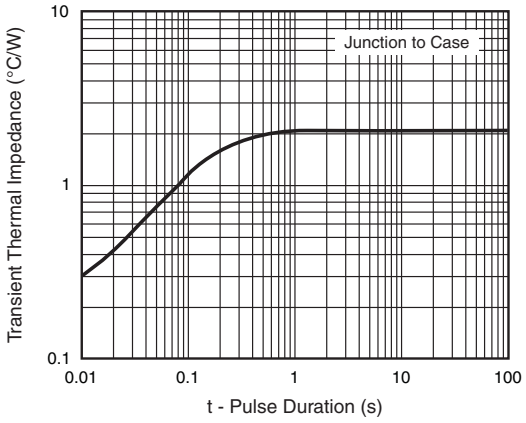
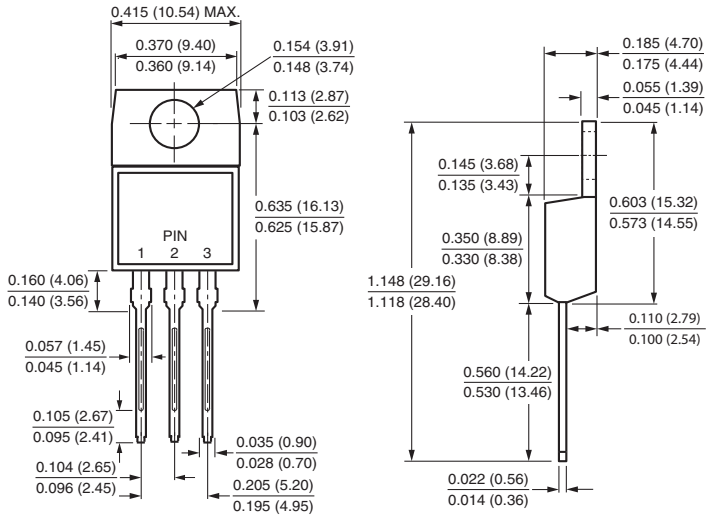


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



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