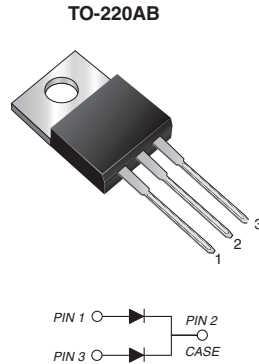




**THE DATASHEET OF
M30L45C-E3/4W**



Dual Common Cathode Schottky Rectifier


RoHS
COMPLIANT

FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder bath temperature 275 °C maximum, 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-220AB

Epoxy meets UL 94V-0 flammability rating

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

E3 suffix for consumer grade, 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}	45 V
E_{AS}	20 mJ
I_{FSM}	280 A
V_F at $I_F = 15 A$	0.46 V
T_J max.	150 °C
Package	TO-220AB
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	M30L45C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum average forward rectified current (fig.1)	$I_{F(AV)}$	total device	30
		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 $t_p = 2\ \mu s$, 1 kHz	I_{RRM}	1.0	A
Non-repetitive avalanche energy at 25 °C, $I_{AS} = 2 A$, per diode	E_{AS}	20	mJ
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 ⁽¹⁾	V_F	$T_A = 25\text{ }^\circ\text{C}$	$I_F = 8\text{ A}$	0.45	-	V
			$I_F = 15\text{ A}$	0.52	0.60	
			$I_F = 30\text{ A}$	0.67	-	
		$T_A = 125\text{ }^\circ\text{C}$	$I_F = 8\text{ A}$	0.36	-	
			$I_F = 15\text{ A}$	0.46	0.50	
			$I_F = 30\text{ A}$	0.63	-	
Reverse current per diode ⁽²⁾	I_R	$V_R = 45\text{ V}$	$T_A = 25\text{ }^\circ\text{C}$	210	1000	μA
			$T_A = 125\text{ }^\circ\text{C}$	60	120	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	M30L45C	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
M30L45C-E3/4W	2.07	4W	50/tube	Tube

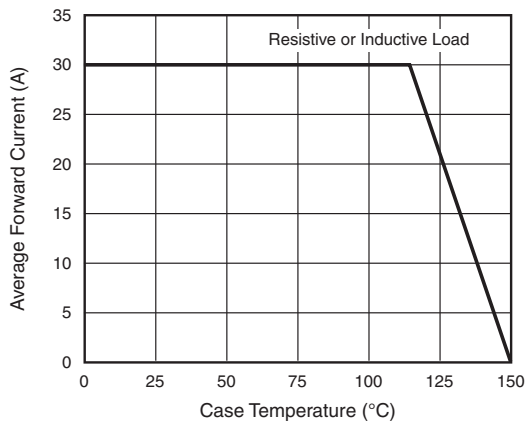
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

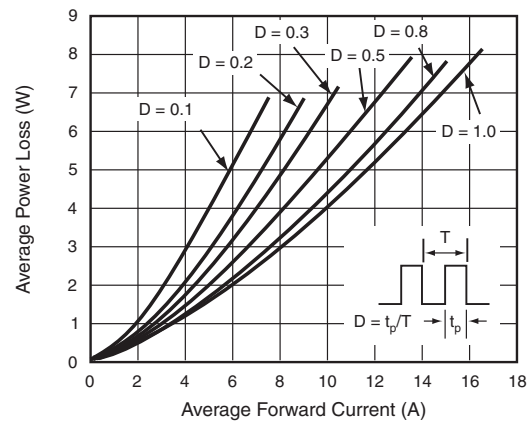


Fig. 2 - Forward Power Loss Characteristics Per Diode

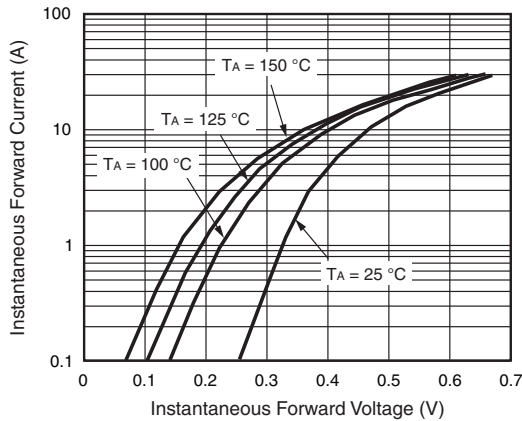


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

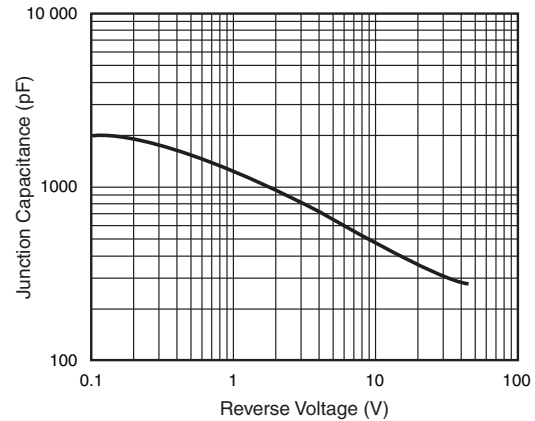


Fig. 5 - Typical Junction Capacitance Per Diode

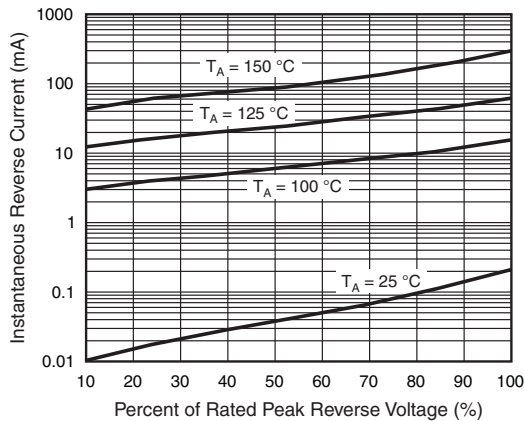


Fig. 4 - Typical Reverse Characteristics Per Diode

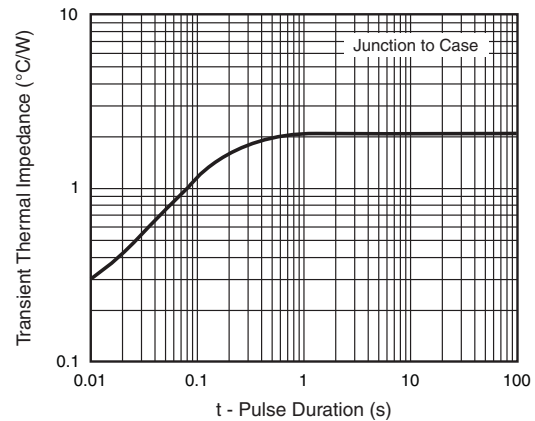
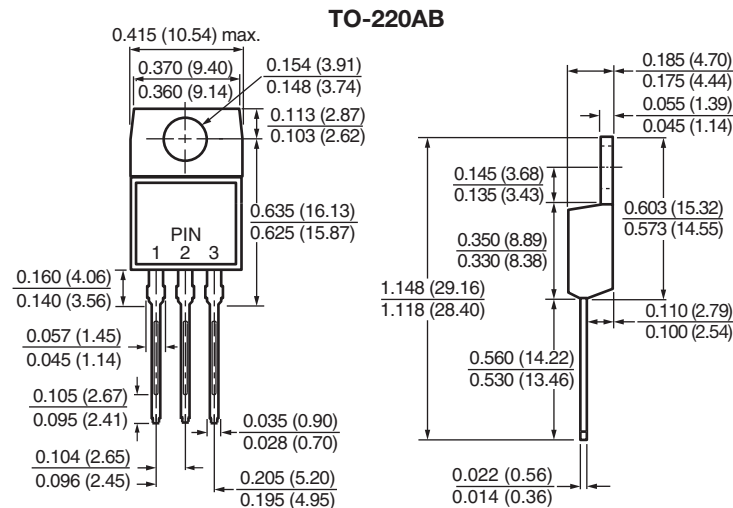


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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