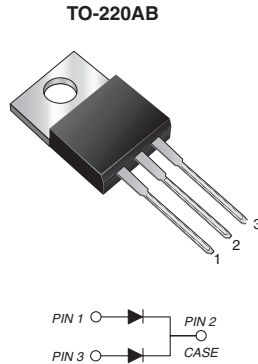


Dual Common-Cathode Schottky Rectifier



FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection applications.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	15 A x 2
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

MECHANICAL DATA

Case: TO-220AB

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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	M30L45C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	30 15	A
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	E_{AS}	20	mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 150	°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode ⁽¹⁾	I _F = 8 A I _F = 15 A I _F = 30 A	T _A = 25 °C	V _F	0.45 0.52 0.67	- 0.60 -	V
	I _F = 8 A I _F = 15 A I _F = 30 A	T _A = 125 °C		0.36 0.46 0.63	- 0.50 -	
Reverse current per diode ⁽²⁾	V _R = 45 V	T _A = 25 °C T _A = 125 °C	I _R	210 60	1000 120	μA mA
Typical junction capacitance per diode	4.0 V, 1 MHz		C _J	750	-	pF

Notes:

- (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	M30L45C	UNIT
Typical thermal resistance per diode	R _{θJC}	2.0	°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 °C unless otherwise noted)

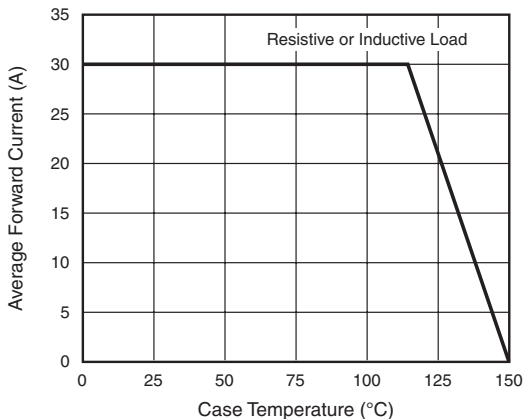


Figure 1. Forward Current Derating Curve

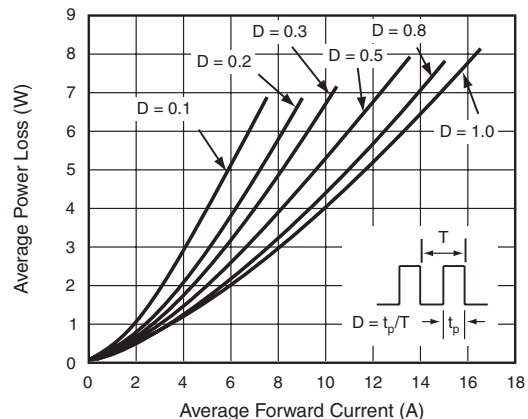


Figure 2. Forward Power Loss Characteristics Per Diode

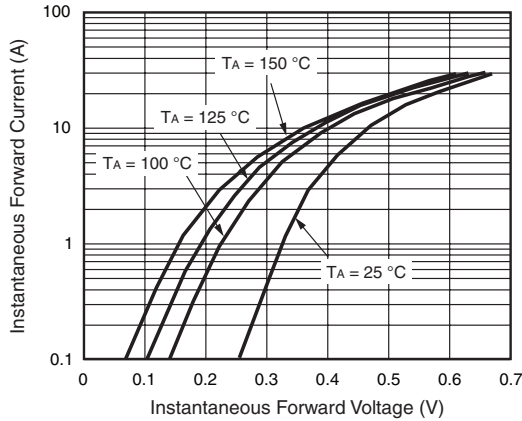


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

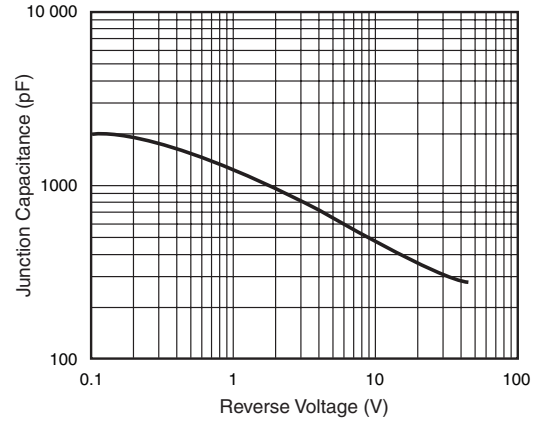


Figure 5. Typical Junction Capacitance Per Diode

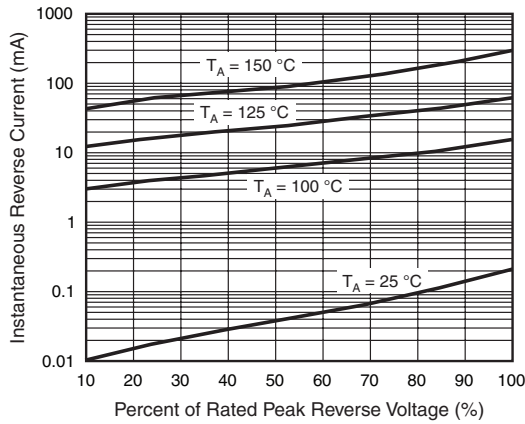


Figure 4. Typical Reverse Characteristics Per Diode

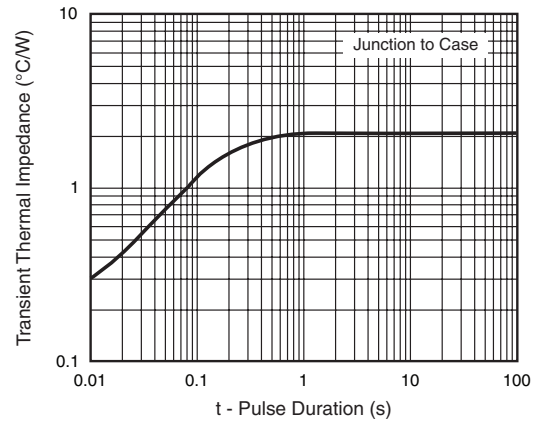
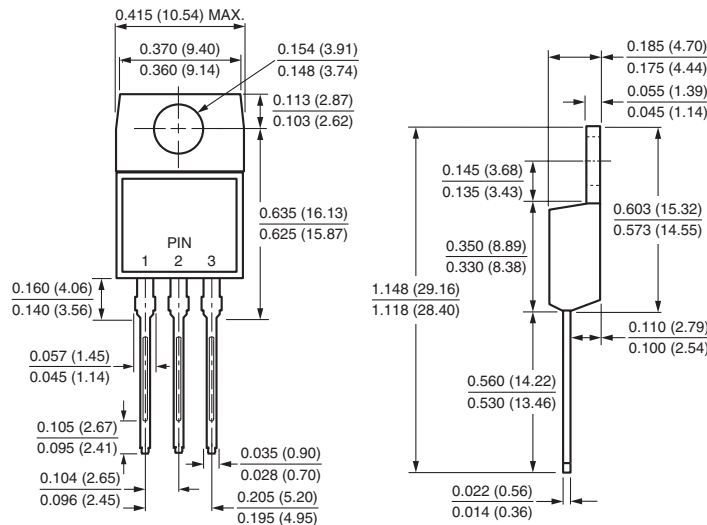


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB





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