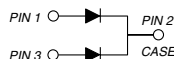
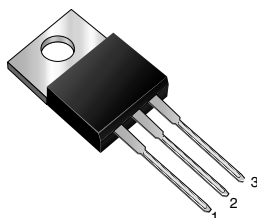


## Dual Common-Cathode Schottky Rectifier

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 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

$I_{F(AV)}$	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

### 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	M30L40C	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	40	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 $t_p = 2$ $\mu$ 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/ $\mu$ 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	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 8\text{ A}$ $I_F = 15\text{ A}$ $I_F = 30\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F$	0.430 0.490 0.595	- 0.55 -	V
	$I_F = 8\text{ A}$ $I_F = 15\text{ A}$ $I_F = 30\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$		0.331 0.413 0.572	- 0.48 -	
Reverse current per diode <sup>(2)</sup>	$V_R = 40\text{ V}$	$T_J = 25\text{ }^\circ\text{C}$ $T_J = 100\text{ }^\circ\text{C}$	$I_R$	88 12	360 45	$\mu\text{A}$ mA
Typical junction capacitance per diode	4.0 V, 1 MHz		$C_J$	750	-	pF

**Notes:**

- (1) Pulse test: 300  $\mu\text{s}$  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)

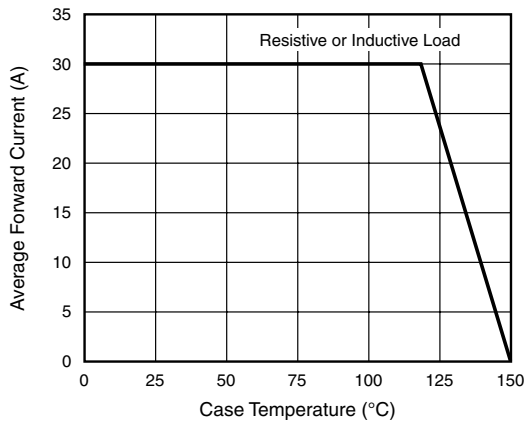


Figure 1. Forward Current Derating Curve

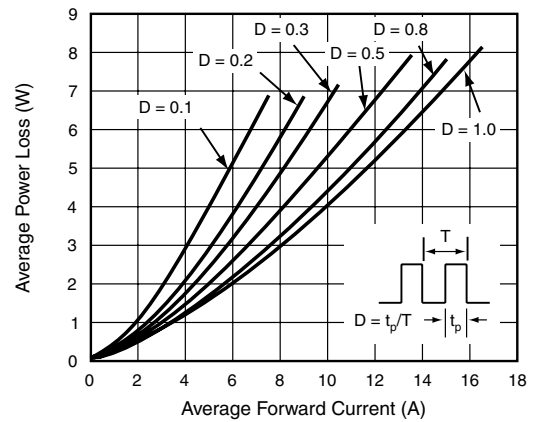


Figure 2. Forward Power Loss Characteristics Per Diode

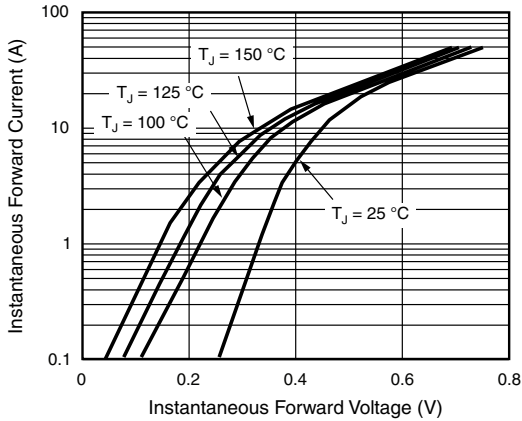


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

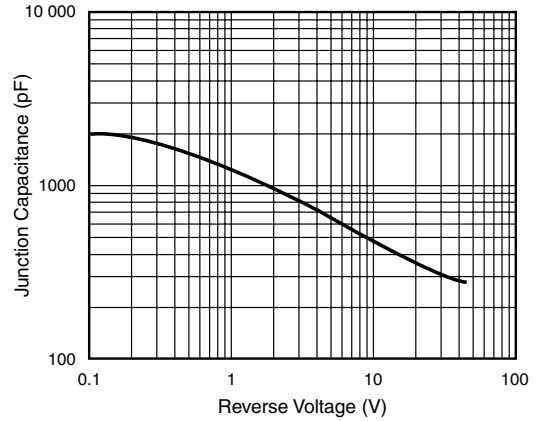


Figure 5. Typical Junction Capacitance Per Diode

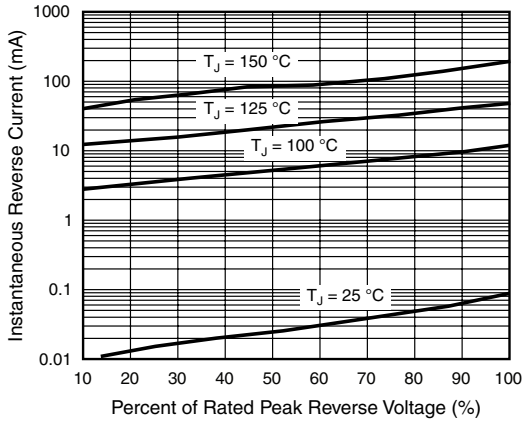


Figure 4. Typical Reverse Characteristics Per Diode

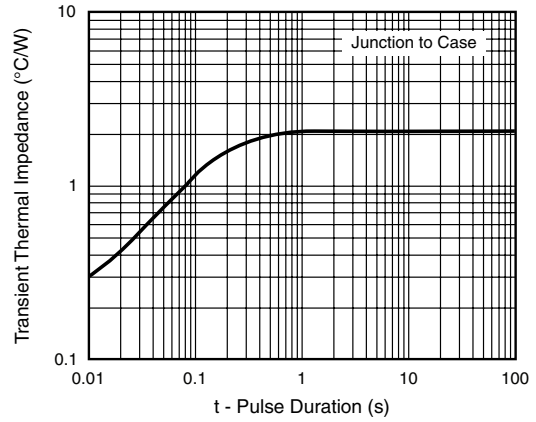
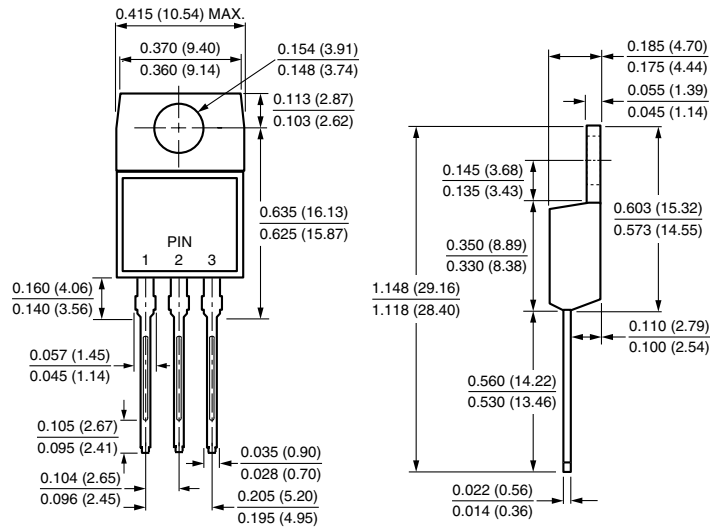


Figure 6. Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**TO-220AB**





## Disclaimer

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