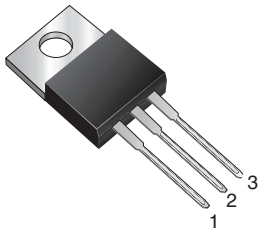
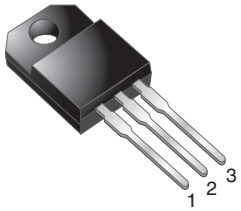
Dual Common Cathode Schottky Rectifier

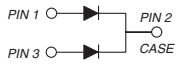
TO-220AB



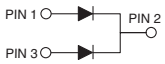
ITO-220AB



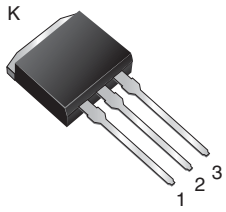
M3060C



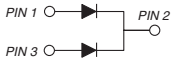
MF3060C



TO-262AA



MI3060C



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, OR-ing, DC/DC converters, or polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-262AA

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 15 A
V_{RRM}	60 V
I_{FSM}	160 A
V_F	0.547 V
T_J max.	150 °C
Package	TO-220AB, ITO-220AB, TO-262AA
Diode variations	Dual Common Cathode

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

PARAMETER		SYMBOL	M3060C	MF3060C	MI3060C	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	60			V
Maximum average forward rectified current	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}	160			A
Peak repetitive reverse current per diode at t_p = 2 µs, 1 kHz		I_{RRM}	0.5			A
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
Isolation voltage from terminal to heatsink with t = 1 min		V_{AC}	1500			V

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 = 5.0 A	T_J = 25 °C	0.482	-	V
		I_F = 7.5 A		0.520	-	
		I_F = 15 A		0.614	0.72	
		I_F = 5.0 A	T_J = 125 °C	0.387	-	
		I_F = 7.5 A		0.443	-	
		I_F = 15 A		0.547	0.62	
Reverse current per diode	I_R (2)	rated V_R	T_J = 25 °C	50	350	µA
			T_J = 125 °C	23	45	mA
Typical junction capacitance per diode	C_J	4.0 V, 1 MHz	T_J = 25 °C	540	-	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**	**M3060C**	**MF3060C**	**MI3060C**	**UNIT**
Thermal resistance per diode	$R_{\theta JC}$	2.0	5.5	2.0	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	M3060C-E3/4W	1.85	4W	50/tube	Tube
ITO-220AB	MF3060C-E3/4W	1.75	4W	50/tube	Tube
TO-262AA	MI3060C-E3/4W	1.46	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

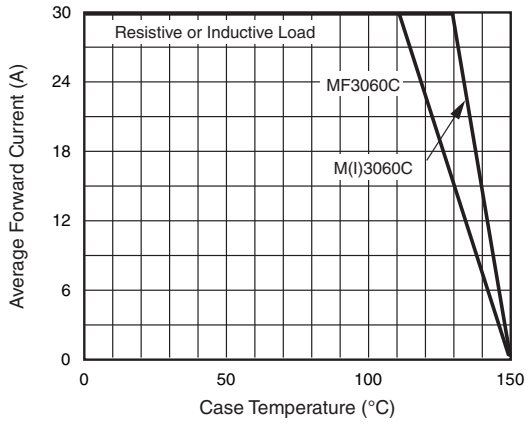


Fig. 1 - Forward Current Derating Curve

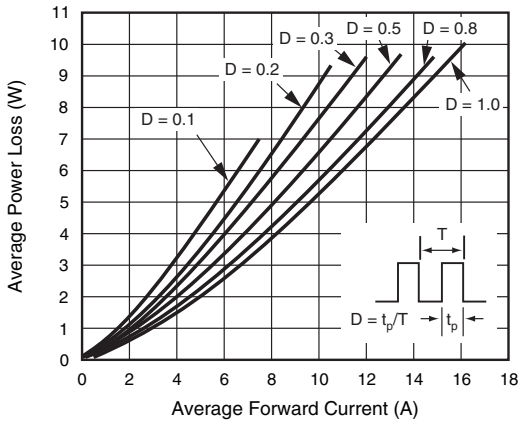


Fig. 2 - Forward Power Loss Characteristics Per Diode

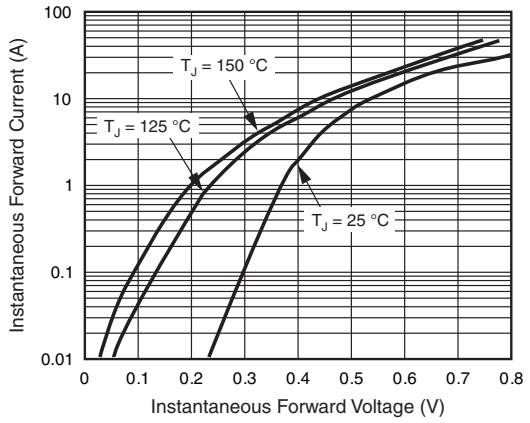


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

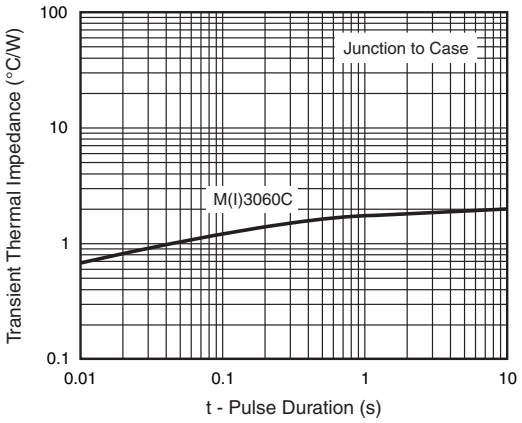


Fig. 6 - Typical Transient Thermal Impedance Per Diode

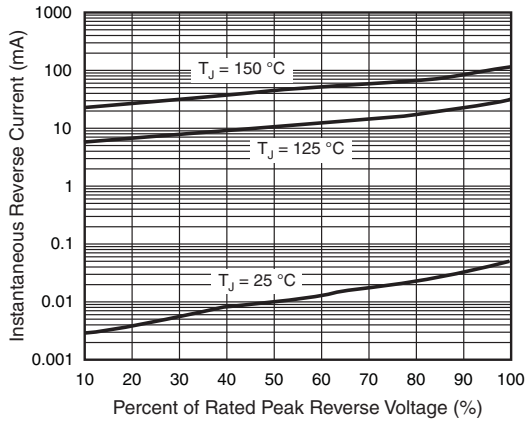


Fig. 4 - Typical Reverse Characteristics Per Diode

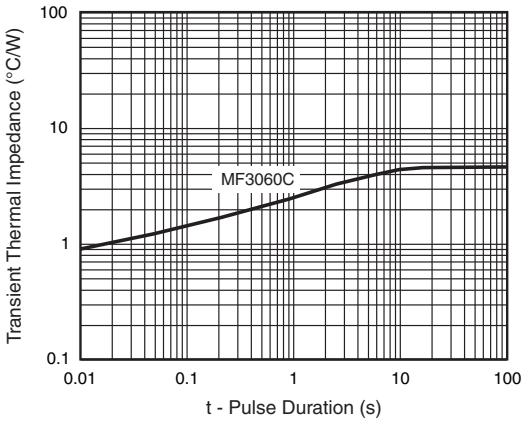


Fig. 7 - Typical Transient Thermal Impedance Per Diode

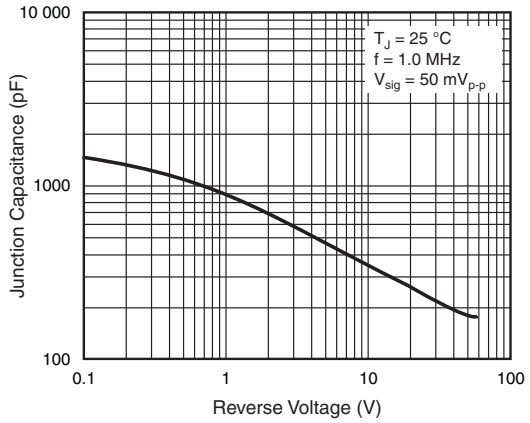
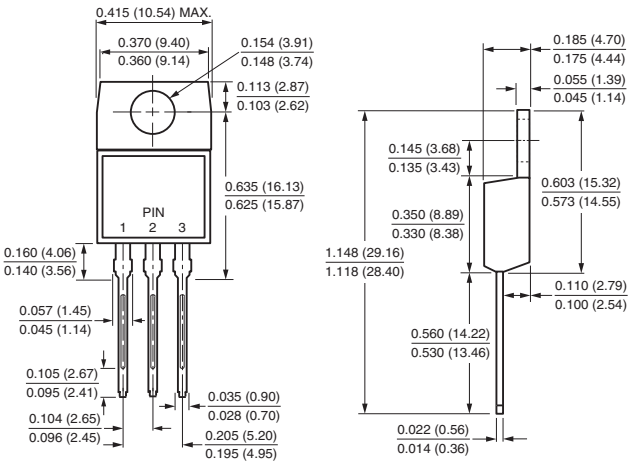


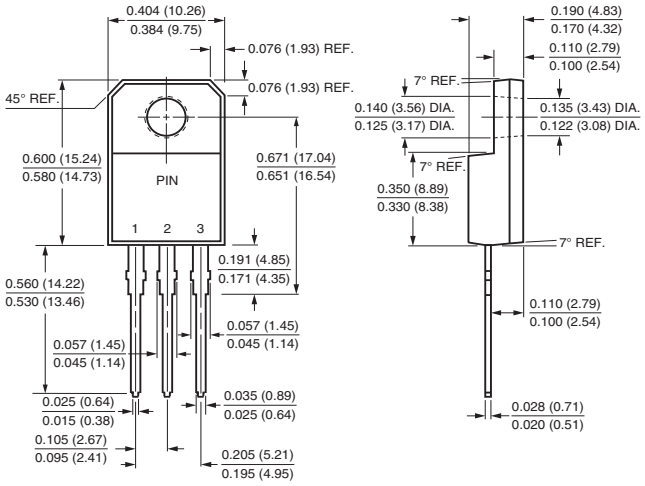
Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

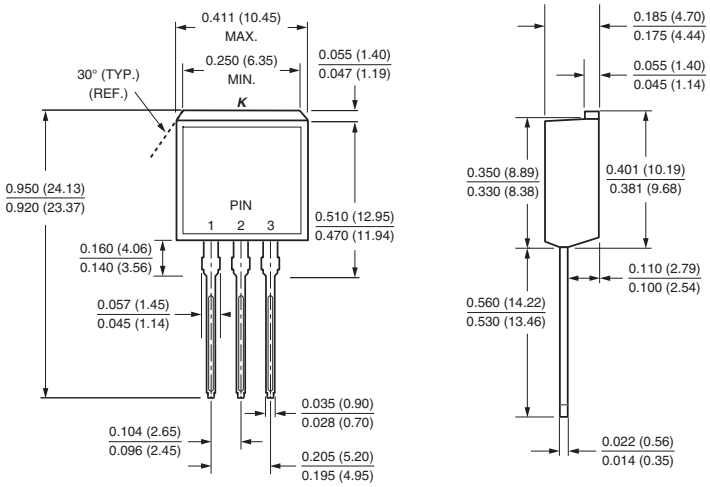
TO-220AB



ITO-220AB



TO-262AA



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