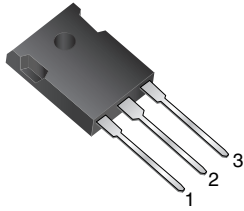
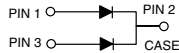


Dual Common Cathode Schottky Rectifier


TO-3P (TO-247AD)


FEATURES

- Power pack
- Guardring for overvoltage protection
- Low 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.

MECHANICAL DATA

Case: TO-3P (TO-247AD)

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 30 A
V_{RRM}	35 V, 45 V, 60 V
I_{FSM}	350 A
V_F at $I_F = 30$ A	0.50 V, 0.56 V
T_J max.	150 °C
Package	TO-3P (TO-247AD)
Circuit configurations	Common cathode

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	M6035P	M6045P	M6060P	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	60	V
Maximum average forward rectified current at (fig.1)	$I_{F(AV)}$	total device		60	A
		per diode		30	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	350			A
Peak repetitive reverse current at $t_p = 2$ μ s, 1 kHz per diode	I_{RRM}	2.0			A
Voltage rate of change (rated V_R)	dV/dt	10 000			V/ μ 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	SYMBOL	TEST CONDITIONS	M6035P	M6045P	M6060P		UNIT	
			TYP.	MAX.	TYP.	MAX.		
Instantaneous forward voltage per diode	V_F ⁽¹⁾	$I_F = 10\text{ A}$ $T_J = 25\text{ }^\circ\text{C}$	0.42	-	0.43	-	V	
			$I_F = 20\text{ A}$	0.49	-	0.52		-
			$I_F = 30\text{ A}$	0.54	0.60	0.59		0.64
		$I_F = 10\text{ A}$ $T_J = 125\text{ }^\circ\text{C}$	0.31	-	0.33	-		
			$I_F = 20\text{ A}$	0.42	-	0.47		-
			$I_F = 30\text{ A}$	0.50	0.55	0.56		0.60
Reverse current per diode	I_R ⁽²⁾	V_R $T_J = 25\text{ }^\circ\text{C}$	135	600	240	600	μA	
			$T_J = 125\text{ }^\circ\text{C}$	110	160	140	160	mA
Typical junction capacitance	C_J	4.0 V, 1 MHz	1150	-	1090	-	pF	

Notes

- (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	M6035P	M6045P	M6060P	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
M6045P-E3/45	6.14	45	30/tube	Tube
M6060P-E3/45	6.14	45	30/tube	Tube

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

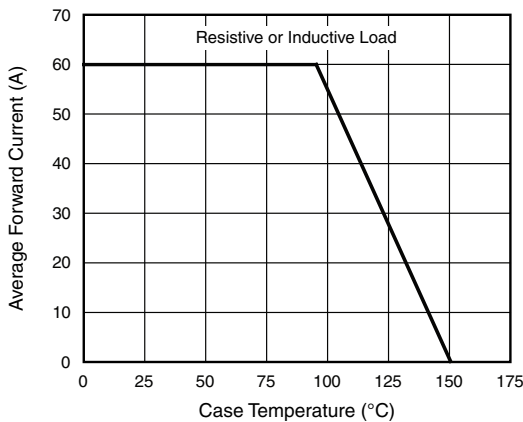


Fig. 1 - Forward Current Derating Curve

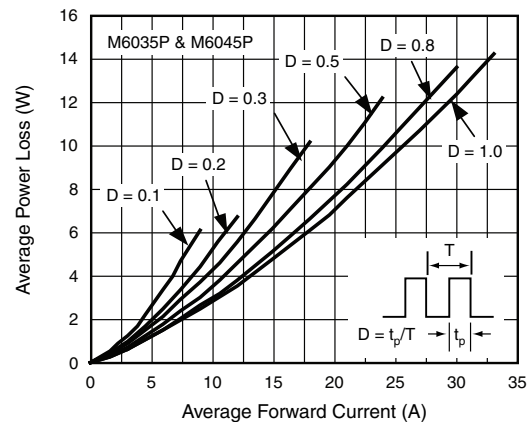


Fig. 2 - Forward Power Loss Characteristics Per Diode

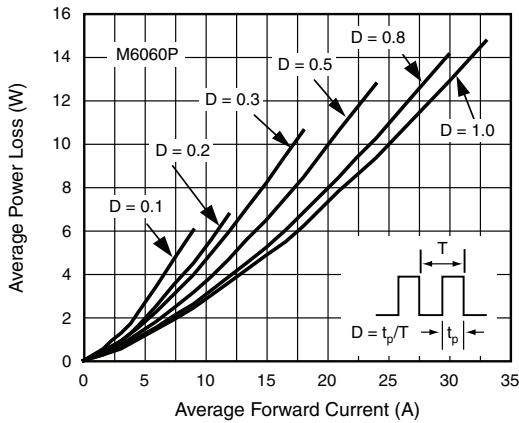


Fig. 3 - Forward Power Loss Characteristics Per Diode

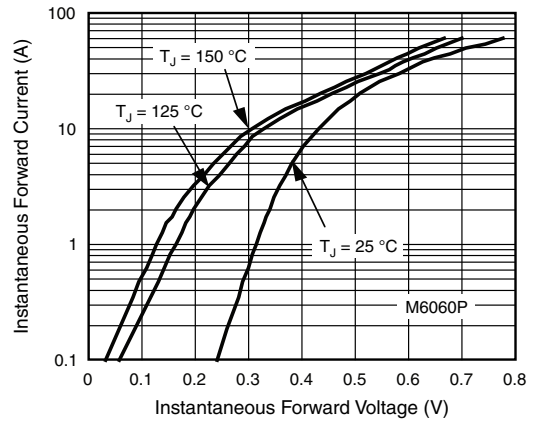


Fig. 6 - Typical Instantaneous Forward Characteristics Per Diode

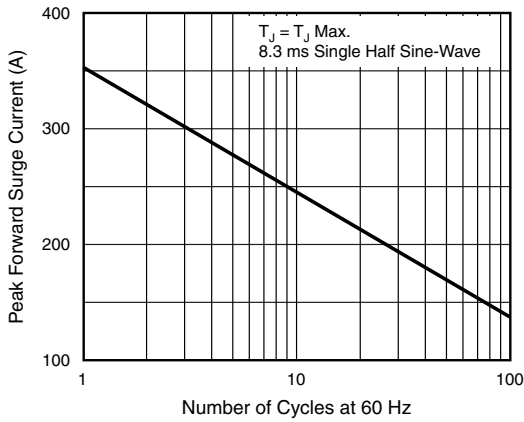


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

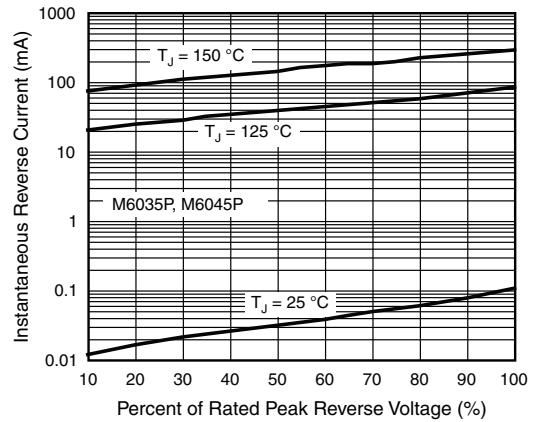


Fig. 7 - Typical Reverse Characteristics Per Diode

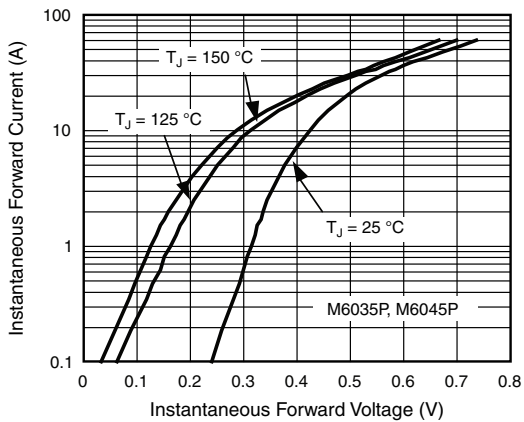


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

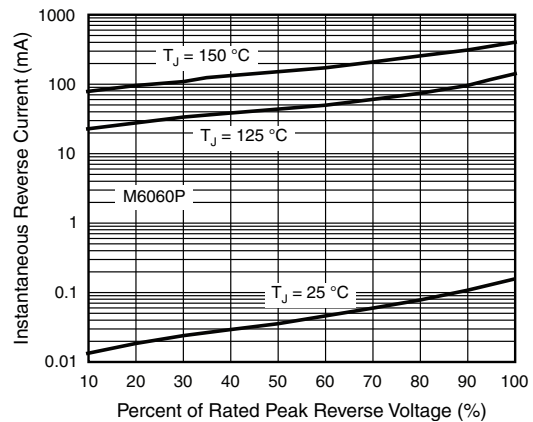


Fig. 8 - Typical Reverse Characteristics Per Diode

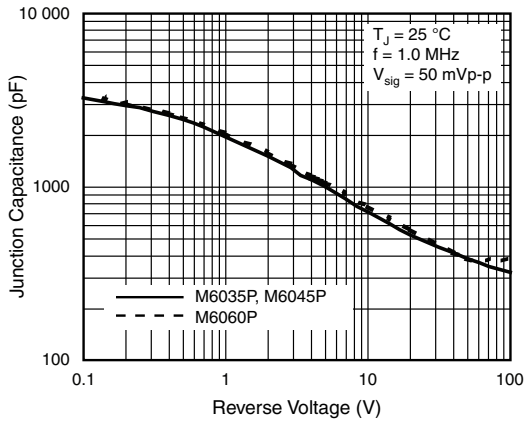


Fig. 9 - Typical Junction Capacitance Per Diode

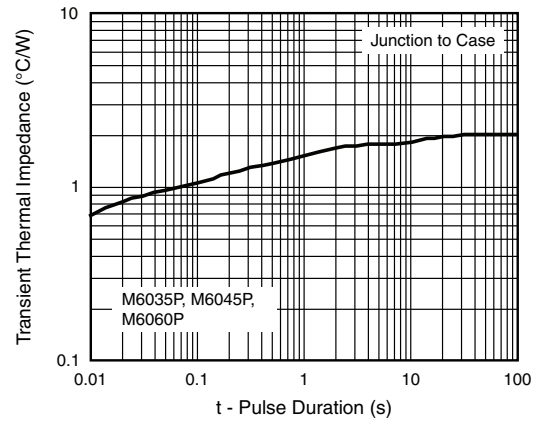
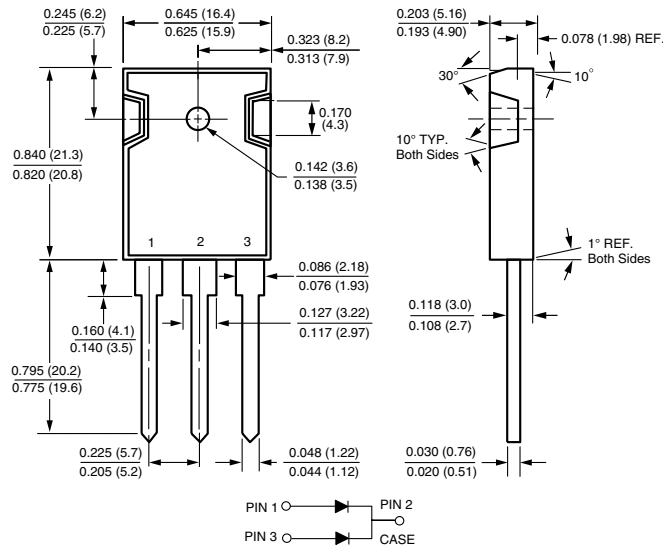


Fig. 10 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-3P (TO-247AD)





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