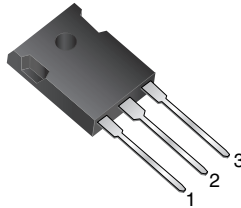
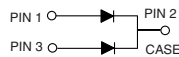


## Dual Common-Cathode Schottky Rectifier



TO-247AD (TO-3P)



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

### FEATURES

- Guardring for overvoltage protection
- Low 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 application.

### MECHANICAL DATA

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

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	M6035P	M6045P	M6060P	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	35	45	60	V
Maximum average forward rectified total device current (Fig. 1) per diode	$I_{F(AV)}$	60 30			A
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 $t_p = 2$ $\mu$ s, 1 kHz per diode	$I_{RRM}$	2.0			A
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 <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	M6035P	M6045P	M6060P		UNIT
				TYP.	MAX.	TYP.	MAX.	
Instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 10 A I <sub>F</sub> = 20 A I <sub>F</sub> = 30 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.42	-	0.43	-	V
				0.49	-	0.52	-	
	0.54	0.60		0.59	0.64			
	I <sub>F</sub> = 10 A I <sub>F</sub> = 20 A I <sub>F</sub> = 30 A	T <sub>J</sub> = 125 °C		0.31	-	0.33	-	
0.42			-	0.47	-			
0.50			0.55	0.56	0.60			
Reverse current per diode <sup>(2)</sup>	V <sub>R</sub>	T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	135 110	600 160	240 140	600 160	μA mA
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	1150	-	1090	-	pF

Notes:

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	M6035P	M6045P	M6060P	UNIT
Typical thermal resistance per diode	R <sub>θJC</sub>		2.0		°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<sub>A</sub> = 25 °C unless otherwise noted)

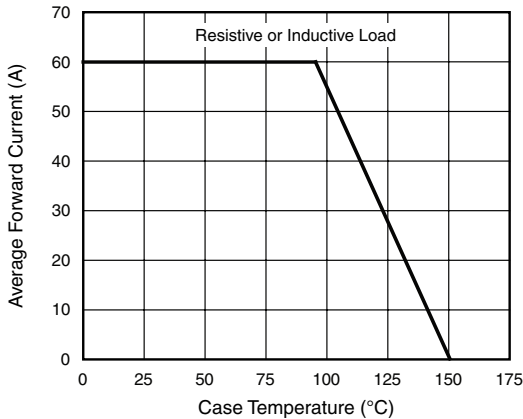


Figure 1. Forward Current Derating Curve

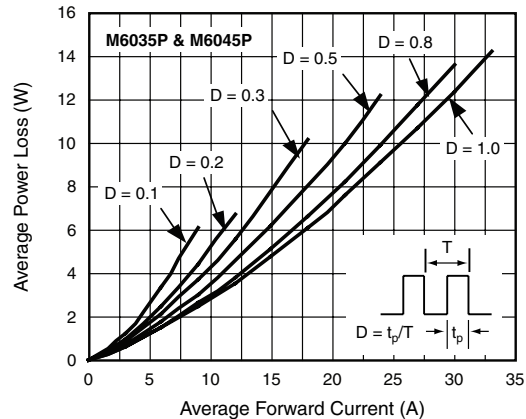


Figure 2. Forward Power Loss Characteristics Per Diode

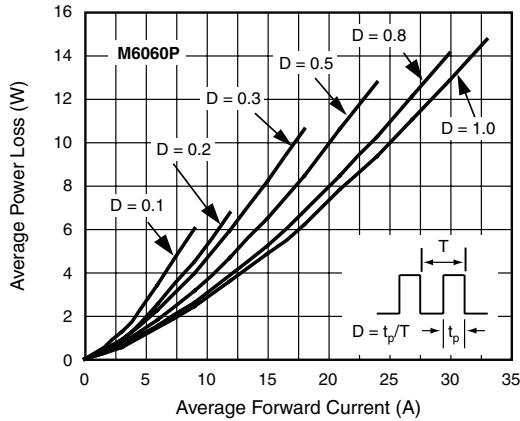


Figure 3. Forward Power Loss Characteristics Per Diode

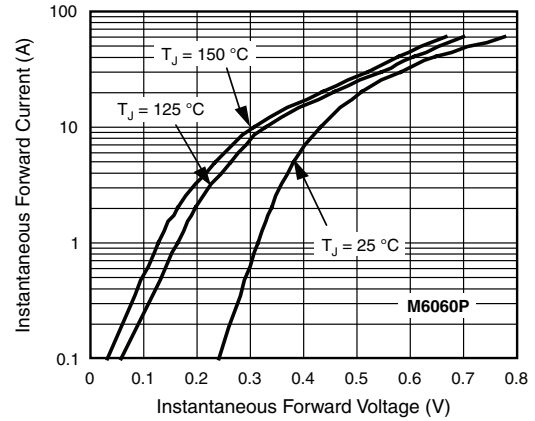


Figure 6. Typical Instantaneous Forward Characteristics Per Diode

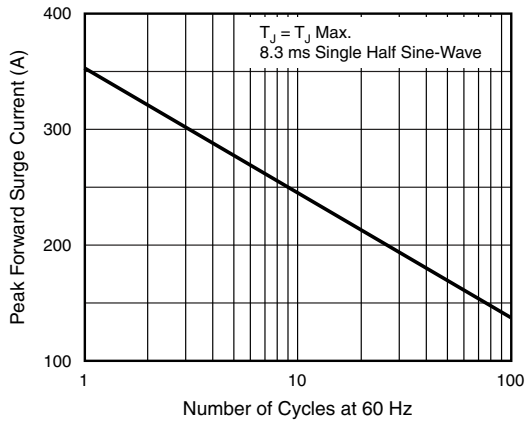


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

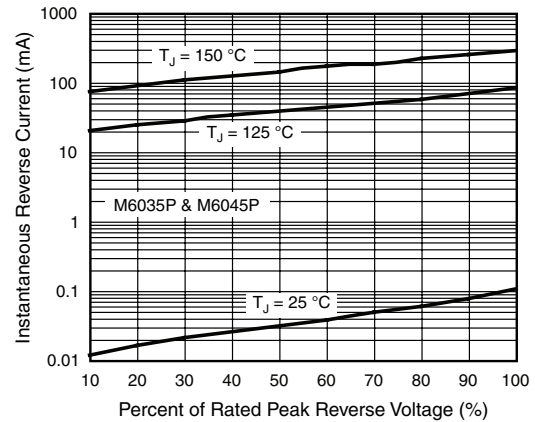


Figure 7. Typical Reverse Characteristics Per Diode

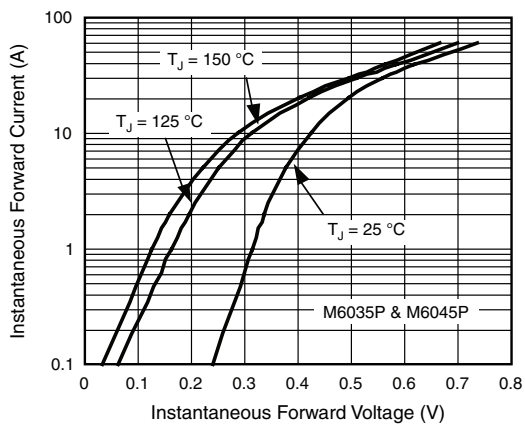


Figure 5. Typical Instantaneous Forward Characteristics Per Diode

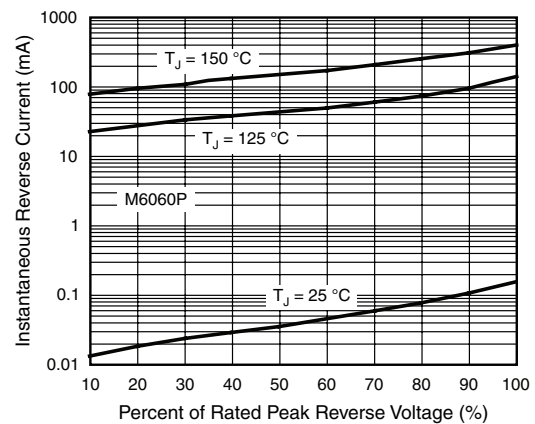


Figure 8. Typical Reverse Characteristics Per Diode

# M6035P thru M6060P

Vishay General Semiconductor

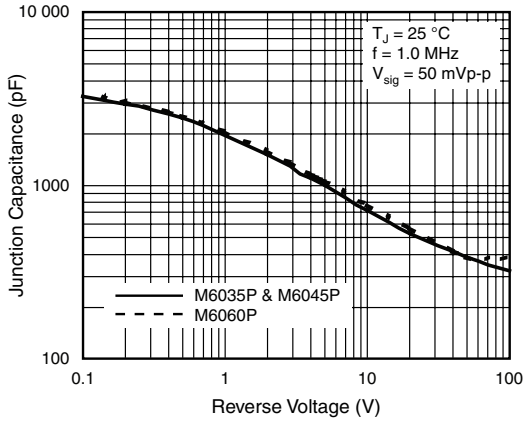


Figure 9. Typical Junction Capacitance Per Diode

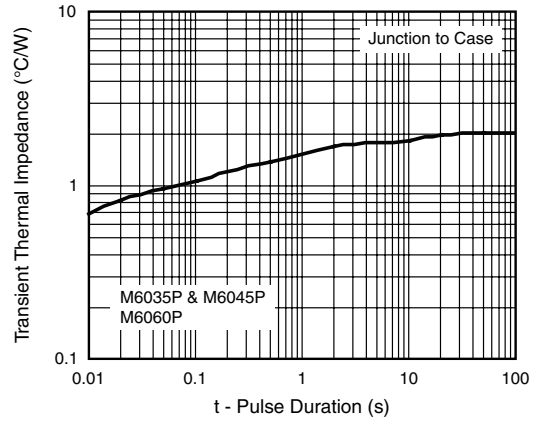
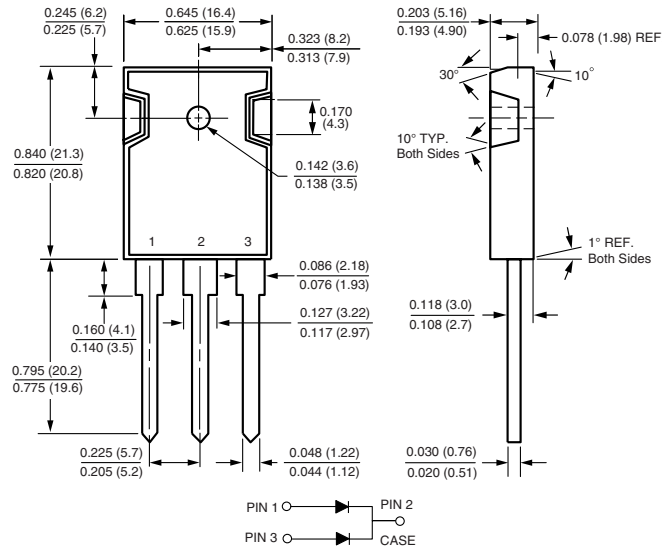


Figure 10. Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-247AD (TO-3P)





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