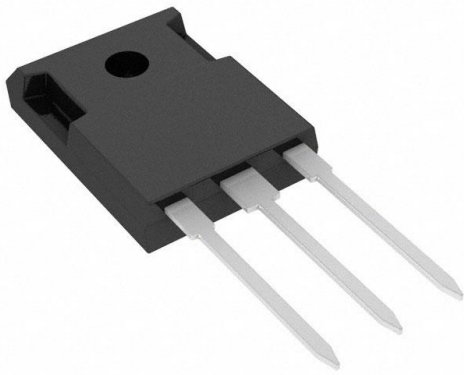


M6060P-E3/45 Datasheet

www.digi-electronics.com



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DiGi Electronics Part Number	M6060P-E3/45-DG
Manufacturer	Vishay General Semiconductor - Diodes Division
Manufacturer Product Number	M6060P-E3/45
Description	DIODE ARR SCHOTT 60V 30A TO247AD
Detailed Description	Diode Array 1 Pair Common Cathode 60 V 30A Through Hole TO-3P-3, SC-65-3

This model M6060P-E3/45 is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:

M6060P-E3/45

Series:

-

Diode Configuration:

1 Pair Common Cathode

Voltage - DC Reverse (Vr) (Max):

60 V

Voltage - Forward (Vf) (Max) @ If:

640 mV @ 30 A

Current - Reverse Leakage @ Vr:

600 μ A @ 60 V

Mounting Type:

Through Hole

Supplier Device Package:

TO-247AD (TO-3P)

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Technology:

Schottky

Current - Average Rectified (Io) (per Diode):

30A

Speed:

Fast Recovery \leq 500ns, > 200mA (Io)

Operating Temperature - Junction:

-65°C ~ 150°C

Package / Case:

TO-3P-3, SC-65-3

Base Product Number:

M6060

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080

Moisture Sensitivity Level (MSL):

1 (Unlimited)

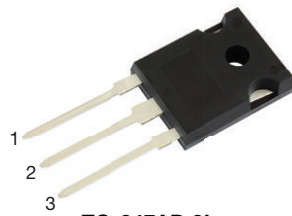
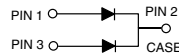
ECCN:

EAR99


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Vishay General Semiconductor

Dual Common Cathode Schottky Rectifier


TO-247AD 3L

RoHS
 COMPLIANT
 HALOGEN
FREE

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

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-247AD 3L

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 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-247AD 3L
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	


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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-M3/P	5.83	P	25/tube	Tube
M6060P-M3/P	5.83	P	25/tube	Tube



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

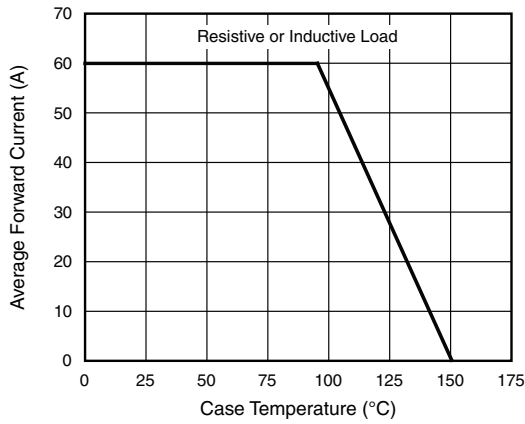


Fig. 1 - Forward Current Derating Curve

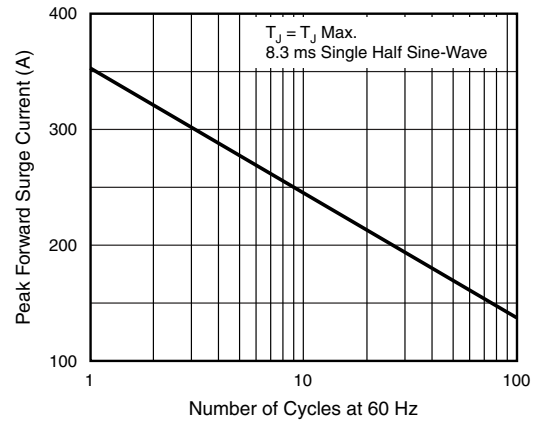


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

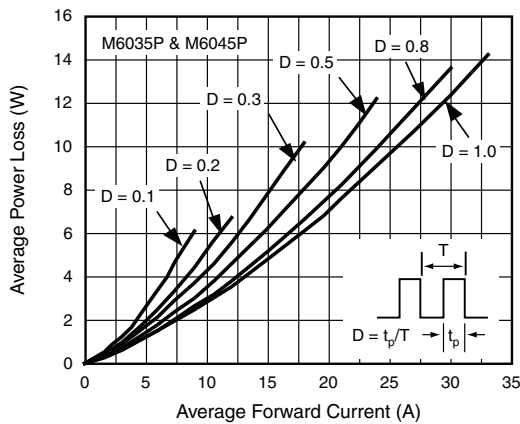


Fig. 2 - Forward Power Loss Characteristics Per Diode

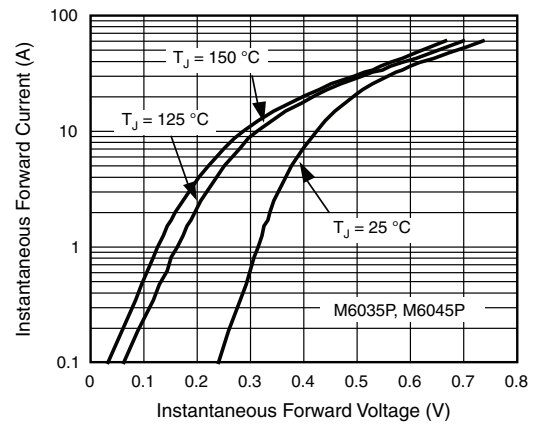


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

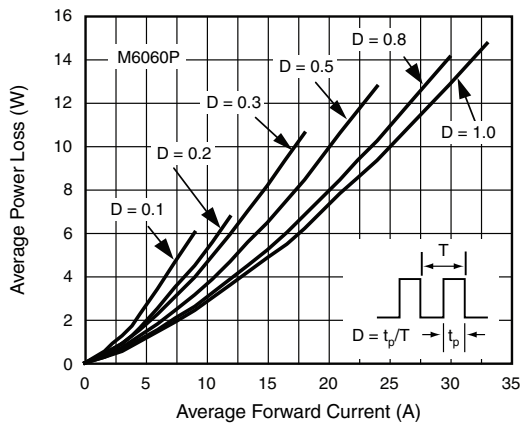


Fig. 3 - Forward Power Loss Characteristics Per Diode

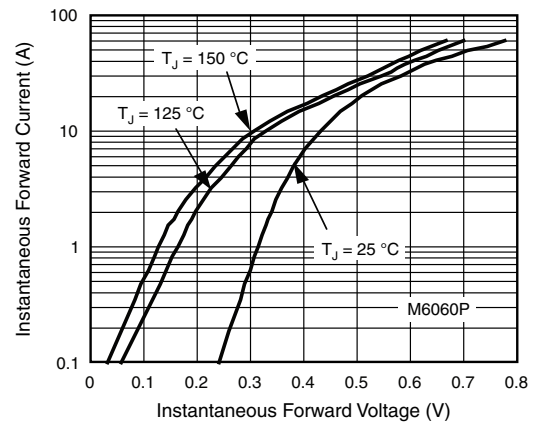


Fig. 6 - Typical Instantaneous Forward Characteristics Per Diode



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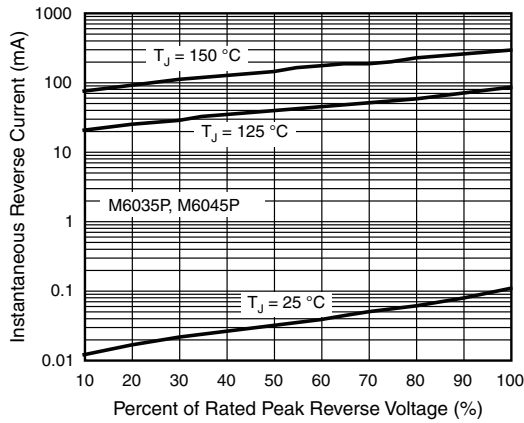


Fig. 7 - Typical Reverse Characteristics Per Diode

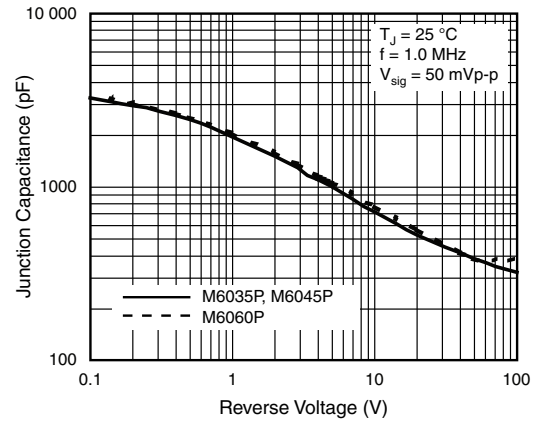


Fig. 9 - Typical Junction Capacitance Per Diode

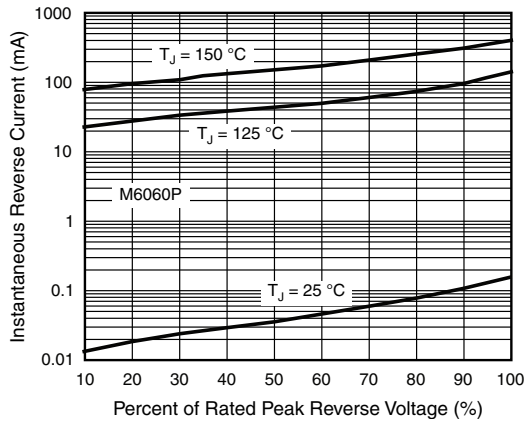


Fig. 8 - Typical Reverse Characteristics Per Diode

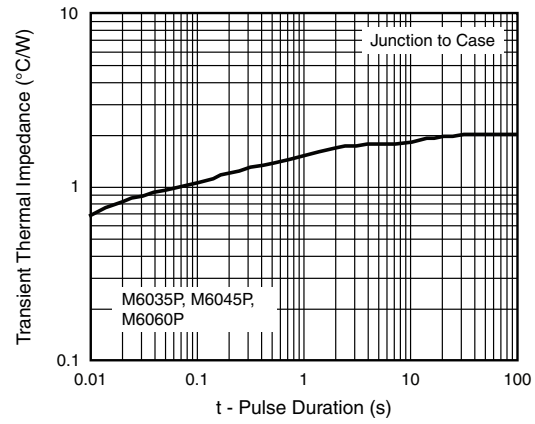


Fig. 10 - Typical Transient Thermal Impedance Per Diode

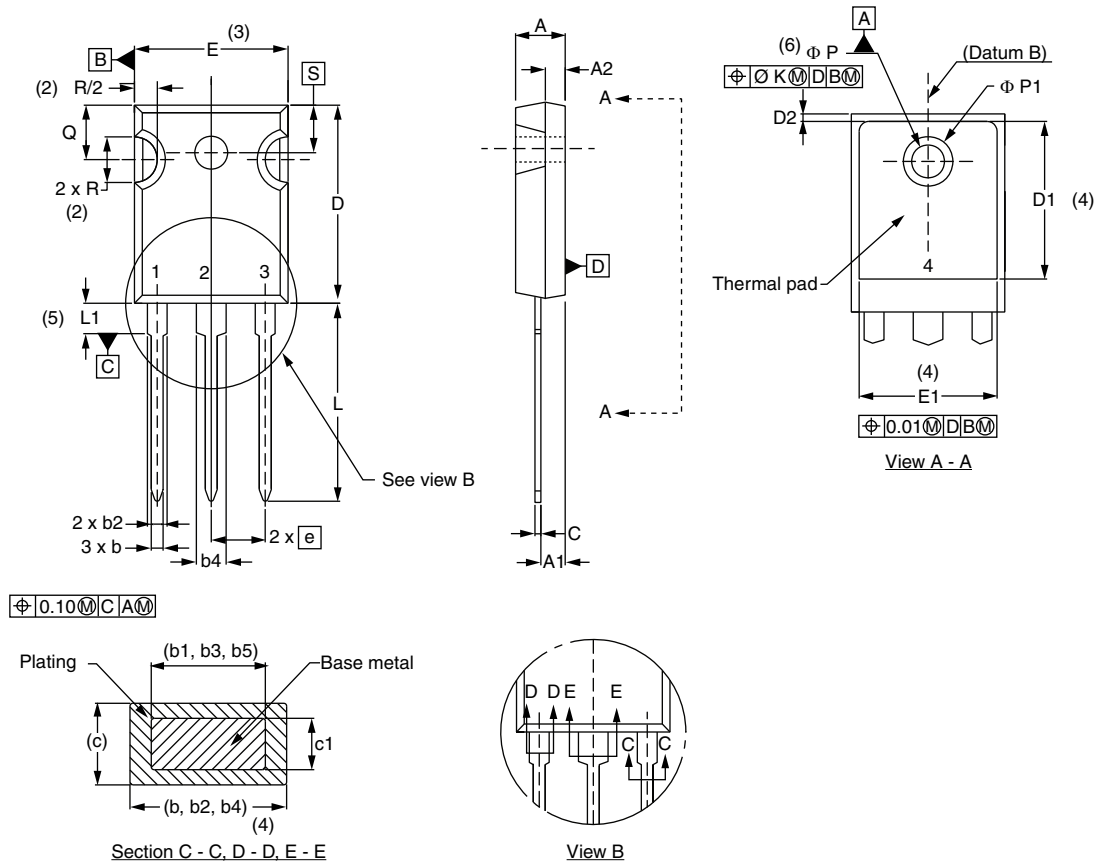


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PACKAGE OUTLINE DIMENSIONS in millimeters (inches) TO-247AD 3L



SYMBOL	MILLIMETERS		INCHES		NOTES	SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.			MIN.	MAX.	MIN.	MAX.	
A	4.65	5.31	0.183	0.209		D2	0.51	1.30	0.020	0.051	
A1	2.21	2.59	0.087	0.102		E	15.29	15.87	0.602	0.625	3
A2	1.50	2.49	0.059	0.098		E1	13.46	-	0.53	-	
b	0.99	1.40	0.039	0.055		e	5.46 BSC		0.215 BSC		
b1	0.99	1.35	0.039	0.053		ϕK	0.254		0.010		
b2	1.65	2.39	0.065	0.094		L	19.81	20.32	0.780	0.800	
b3	1.65	2.34	0.065	0.092		L1	3.71	4.29	0.146	0.169	
b4	2.59	3.43	0.102	0.135		ϕP	3.56	3.66	0.14	0.144	
b5	2.59	3.38	0.102	0.133		$\phi P1$	-	6.98	-	0.275	
c	0.38	0.89	0.015	0.035		Q	5.31	5.69	0.209	0.224	
c1	0.38	0.84	0.015	0.033		R	4.52	5.49	0.178	0.216	
D	19.71	20.70	0.776	0.815	3	S	5.51 BSC		0.217 BSC		
D1	13.08	-	0.515	-	4						

Notes

- (1) Dimensioning and tolerancing per ASME Y14.5M-1994
- (2) Contour of slot optional
- (3) Dimension D and E do not include mold flash. These dimensions are measured at the outermost extremes of the plastic body
- (4) Thermal pad contour optional with dimensions D1 and E1
- (5) Lead finish uncontrolled in L1
- (6) ϕP to have a maximum draft angle of 1.5 to the top of the part with a maximum hole diameter of 3.91 mm (0.154")
- (7) Outline conforms to JEDEC® outline TO-247 with exception of dimension A min., D, E min., Q min., S, and note 4



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