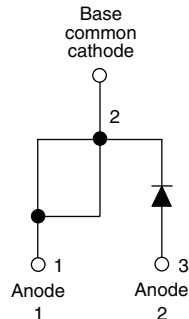


## Input Rectifier Diode, 60 A



TO-247AC modified



### DESCRIPTION/FEATURES

The 60EPS.. rectifier High Voltage Series has been optimized for very low forward voltage drop, with moderate leakage. The glass passivation technology used has reliable operation up to 150 °C junction temperature.

Typical applications are in input rectification and these products are designed to be used with Vishay HPP switches and output rectifiers which are available in identical package outlines.

This product has been designed and qualified for industrial level.

PRODUCT SUMMARY	
$V_F$ at 60 A	1.09 V
$I_{FSM}$	950 A
$V_{RRM}$	800/1200 V

MAJOR RATINGS AND CHARACTERISTICS			
SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Sinusoidal waveform	60	A
$V_{RRM}$		800/1200	V
$I_{FSM}$		950	A
$V_F$	60 A, $T_J = 25\text{ °C}$	1.09	V
$T_J$		- 40 to 150	°C

VOLTAGE RATINGS			
PART NUMBER	$V_{RRM}$ , MAXIMUM PEAK REVERSE VOLTAGE V	$V_{RSM}$ , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	$I_{RRM}$ AT 150 °C mA
60EPS08	800	900	1
60EPS12	1200	1300	

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	$T_C = 118\text{ °C}$ , 180° conduction half sine wave	60	A
Maximum peak one cycle non-repetitive surge current	$I_{FSM}$	10 ms sine pulse, rated $V_{RRM}$ applied	950	
		10 ms sine pulse, no voltage reapplied	1100	
Maximum $I^2t$ for fusing	$I^2t$	10 ms sine pulse, rated $V_{RRM}$ applied	4512	A <sup>2</sup> s
		10 ms sine pulse, no voltage reapplied	6300	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$t = 0.1$ to 10 ms, no voltage reapplied	63 000	A <sup>2</sup> √s

# 60EPS.. High Voltage Series



Vishay High Power Products Input Rectifier Diode, 60 A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	$V_{FM}$	30 A, $T_J = 25\text{ }^\circ\text{C}$		1.0	V
		60 A, $T_J = 25\text{ }^\circ\text{C}$		1.09	V
Forward slope resistance	$r_t$	$T_J = 150\text{ }^\circ\text{C}$		3.96	$\text{m}\Omega$
Threshold voltage	$V_{F(TO)}$			0.74	V
Maximum reverse leakage current	$I_{RM}$	$T_J = 25\text{ }^\circ\text{C}$	$V_R = \text{Rated } V_{RRM}$	0.1	mA
		$T_J = 150\text{ }^\circ\text{C}$		1.0	

THERMAL - MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction and storage temperature range	$T_J, T_{Stg}$			- 40 to 150	$^\circ\text{C}$
Maximum thermal resistance, junction to case	$R_{thJC}$	DC operation		0.35	$^\circ\text{C}/\text{W}$
Maximum thermal resistance, junction to ambient	$R_{thJA}$			40	
Typical thermal resistance, case to heatsink	$R_{thCS}$	Mounting surface, smooth and greased		0.2	
Approximate weight				6	g
				0.21	oz.
Mounting torque	minimum			6 (5)	$\text{kgf} \cdot \text{cm}$ $(\text{lbf} \cdot \text{in})$
	maximum			12 (10)	
Marking device		Case style TO-247AC modified (JEDEC)		60EPS08	
				60EPS12	



# 60EPS.. High Voltage Series

Input Rectifier Diode, 60 A Vishay High Power Products

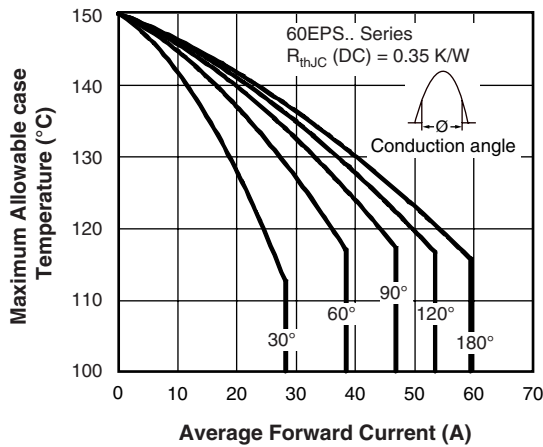


Fig. 1 - Current Rating Characteristics

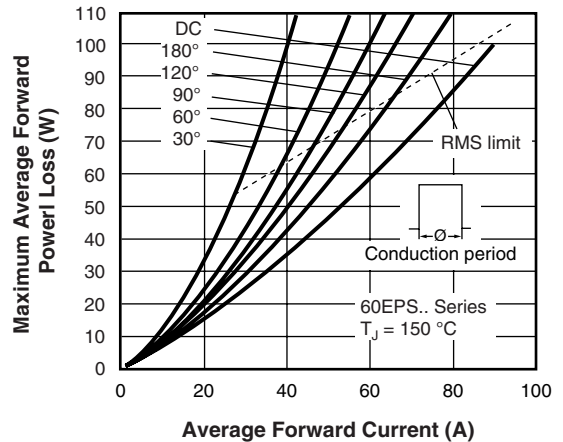


Fig. 4 - Forward Power Loss Characteristics

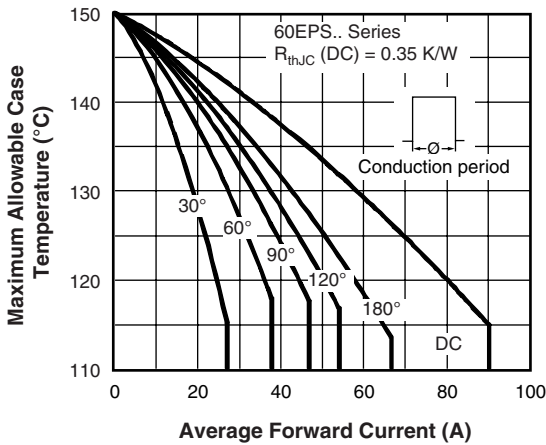


Fig. 2 - Current Rating Characteristics

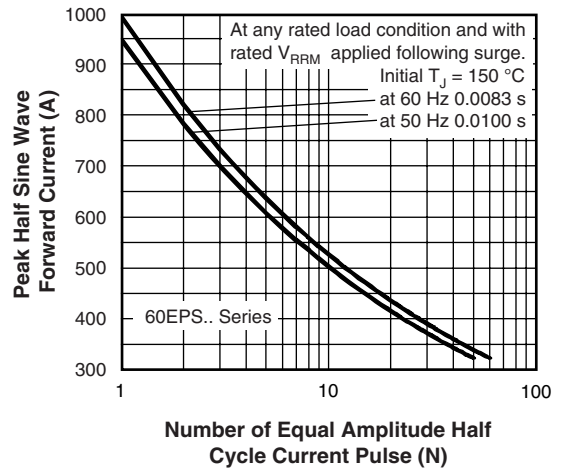


Fig. 5 - Maximum Non-Repetitive Surge Current

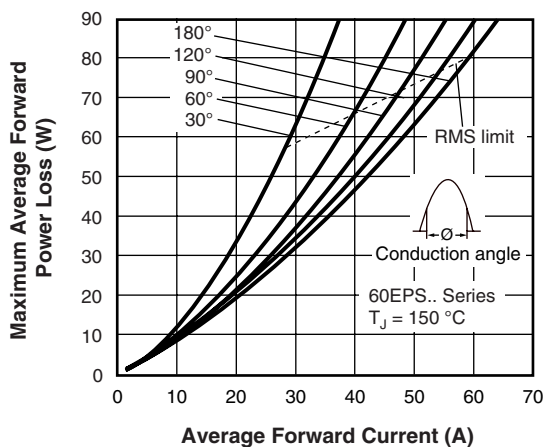


Fig. 3 - Forward Power Loss Characteristics

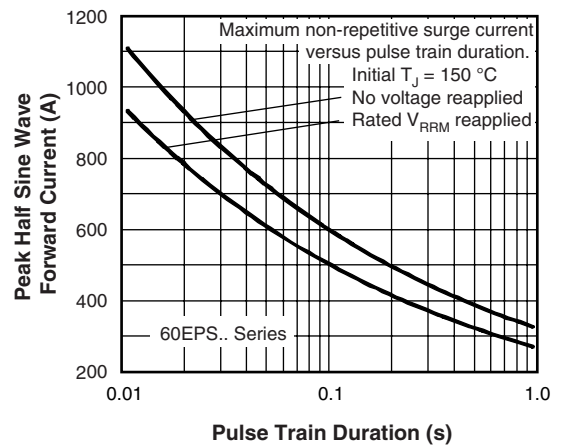


Fig. 6 - Maximum Non-Repetitive Surge Current

# 60EPS.. High Voltage Series

Vishay High Power Products Input Rectifier Diode, 60 A

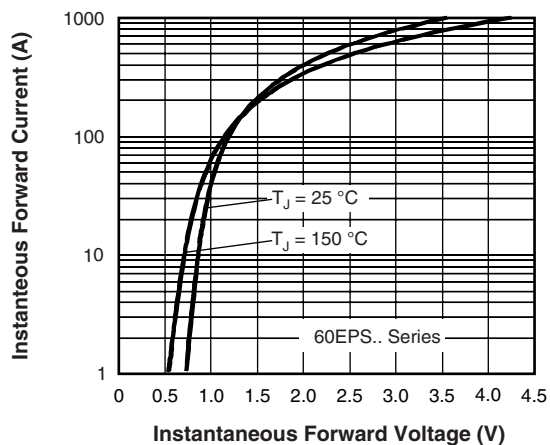


Fig. 7 - Forward Voltage Drop Characteristics

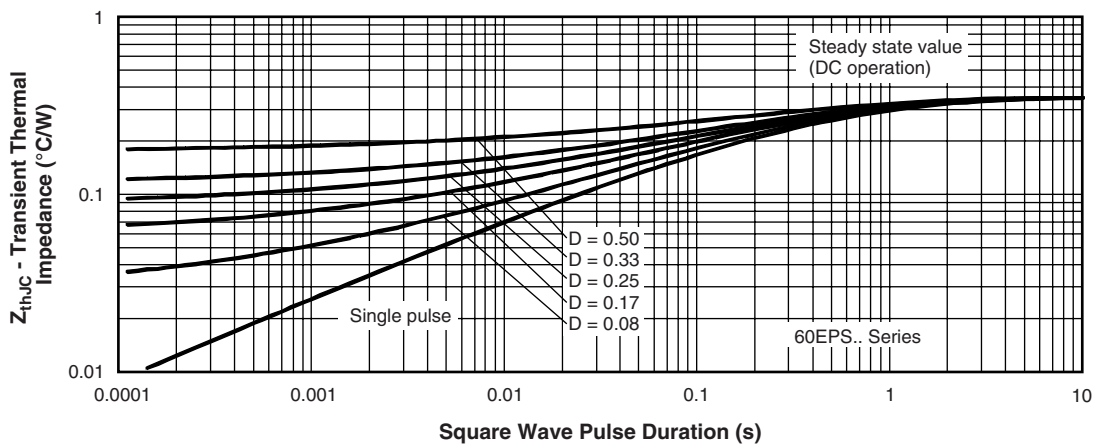


Fig. 8 - Thermal Impedance  $Z_{thJC}$  Characteristics



# 60EPS.. High Voltage Series

Input Rectifier Diode, 60 A Vishay High Power Products

## ORDERING INFORMATION TABLE

Device code	60	E	P	S	12	-
	1	2	3	4	5	6
<b>1</b>	-	Current rating (60 = 60 A)				
<b>2</b>	-	Circuit configuration: E = Single diode				
<b>3</b>	-	Package: P = TO-247AC modified				
<b>4</b>	-	Type of silicon: S = Standard recovery rectifier				
<b>5</b>	-	Voltage code x 100 = $V_{RRM}$				
<b>6</b>	-	• None = Standard production • PbF = Lead (Pb)-free				

08 = 800 V  
12 = 1200 V

LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95253">http://www.vishay.com/doc?95253</a>
Part marking information	<a href="http://www.vishay.com/doc?95255">http://www.vishay.com/doc?95255</a>



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