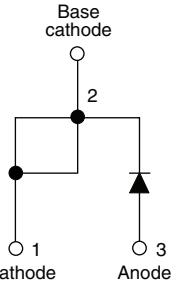
Input Rectifier Diode, 60 A

TO-247AC modified



DESCRIPTION/FEATURES

The 60EPS16 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	1.07 V
I_{FSM}	950 A
V_{RRM}	1600 V

MAJOR RATINGS AND CHARACTERISTICS			
SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Sinusoidal waveform	60	A
V_{RRM}		1600	V
I_{FSM}		950	A
V_F	60 A, T_J = 25 °C	1.07	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
60EPS16	1600	1700	1

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	T_C = 118 °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^2s
		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	$A^2\sqrt{s}$

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	V_{FM}	30 A, T_J = 25 °C		1.0	V
		60 A, T_J = 25 °C		1.07	
Forward slope resistance	r_t	T_J = 150 °C		3.96	mΩ
Threshold voltage	$V_{F(TO)}$			0.74	V
Maximum reverse leakage current	I_{RM}	T_J = 25 °C	V_R = Rated V_{RRM}	0.1	mA
		T_J = 150 °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	°C
Maximum thermal resistance, junction to case		R_{thJC}	DC operation	0.35	°C/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			6.0 (5)	kgf · cm (lbf · in)
	maximum			12 (10)	
Marking device			Case style TO-247AC modified (JEDEC)	60EPS16	

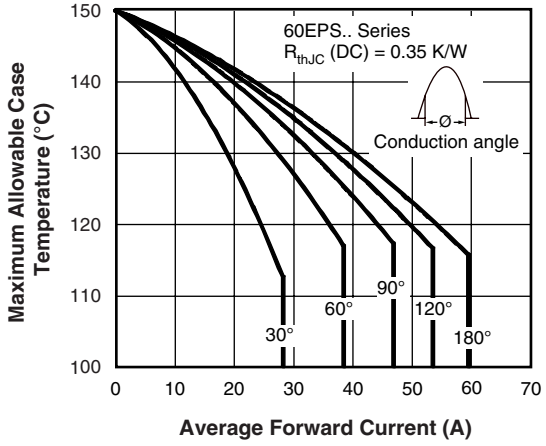


Fig. 1 - Current Rating Characteristics

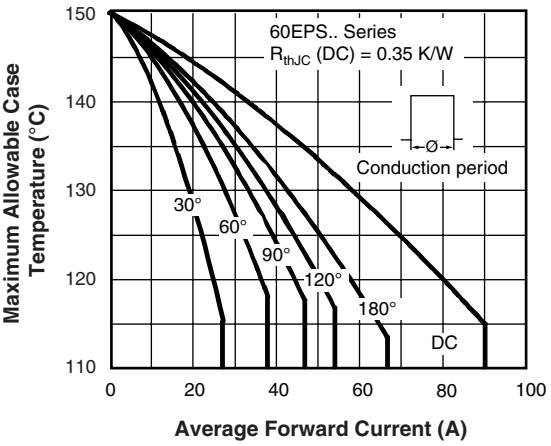


Fig. 2 - Current Rating Characteristics

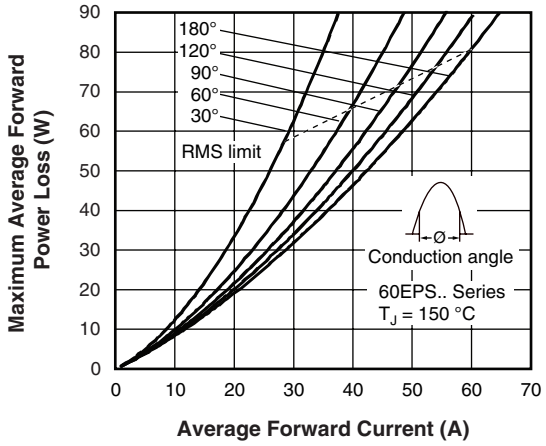


Fig. 3 - Forward Power Loss Characteristics

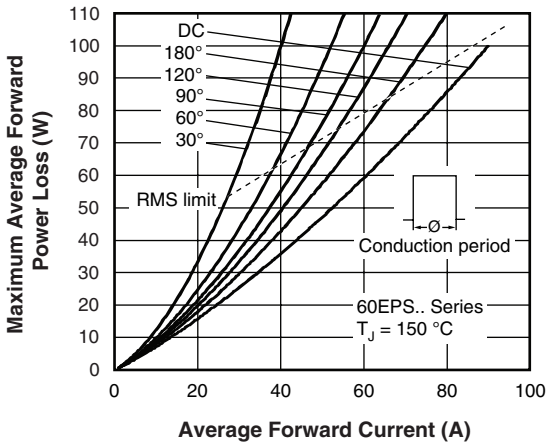


Fig. 4 - Forward Power Loss Characteristics

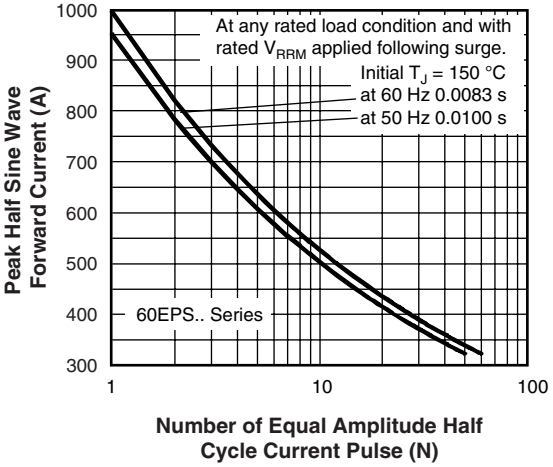


Fig. 5 - Maximum Non-Repetitive Surge Current

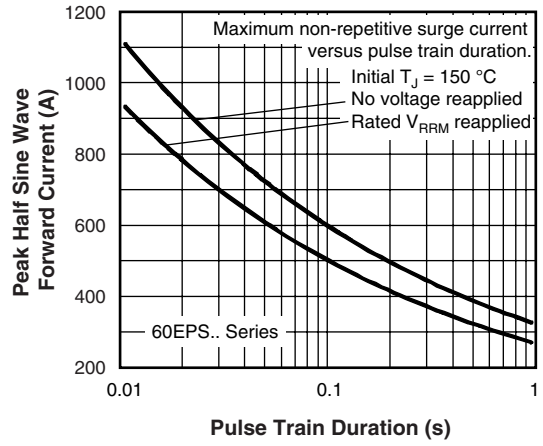


Fig. 6 - Maximum Non-Repetitive Surge Current

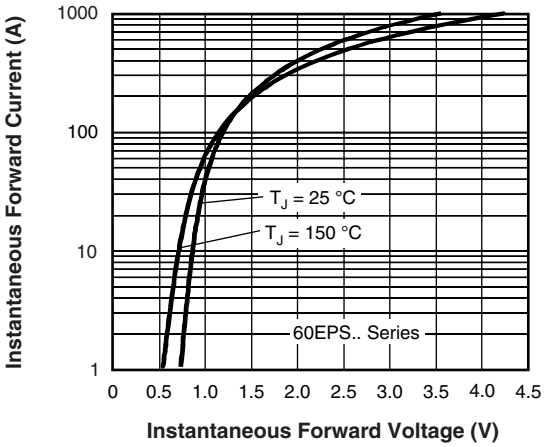


Fig. 7 - Forward Voltage Drop Characteristics

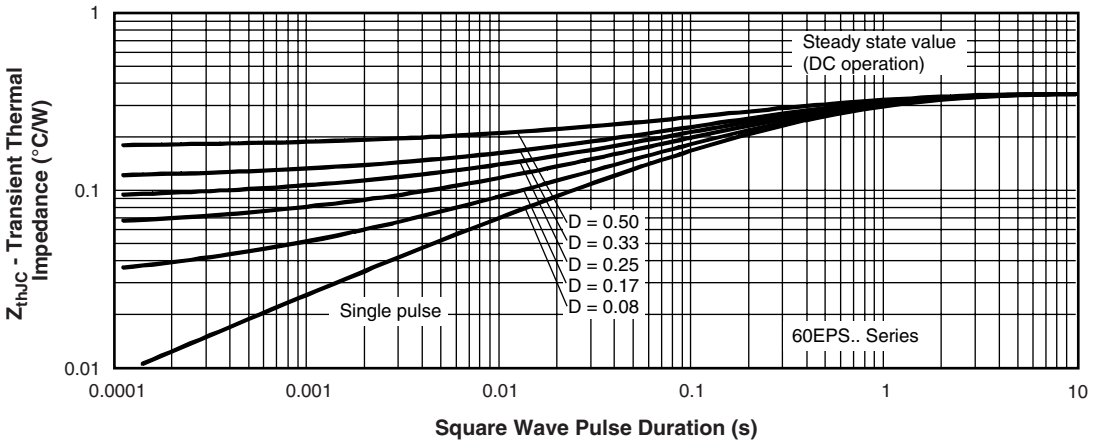


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code

60	E	P	S	16	-
1	2	3	4	5	6

1 - Current rating (60 = 60 A)

2 - Circuit configuration:
E = Single diode

3 - Package:
P = TO-247AC modified

4 - Type of silicon:
S = Standard recovery rectifier

5 - Voltage rating (16 = 1600 V)

6 - • None = Standard production
• PbF = Lead (Pb)-free

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95253
Part marking information	http://www.vishay.com/doc?95255

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