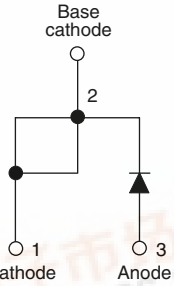
Input Rectifier Diode, 60 A

TO-247AC modified



DESCRIPTION/FEATURES

The 60EPS16PbF 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.

Pb-free Available

RoHS* COMPLIANT

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 and lead (Pb)-free.

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
60EPS16PbF	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	$A^2\sqrt{s}$

* Pb containing terminations are not RoHS compliant, exemptions may apply

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)
Mounting torque maximum			12 (10)	
Marking device		Case style TO-247AC modified (JEDEC)	60EPS16	

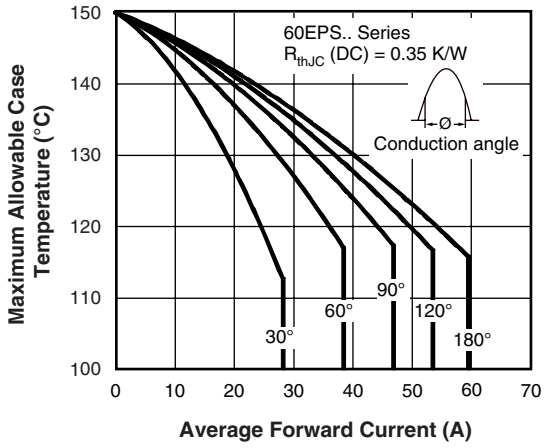


Fig. 1 - Current Rating Characteristics

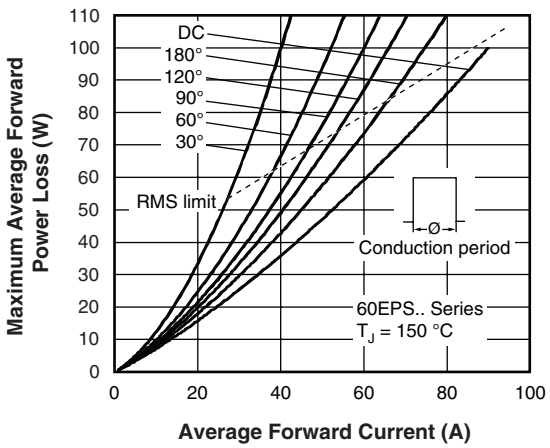


Fig. 4 - Forward Power Loss Characteristics

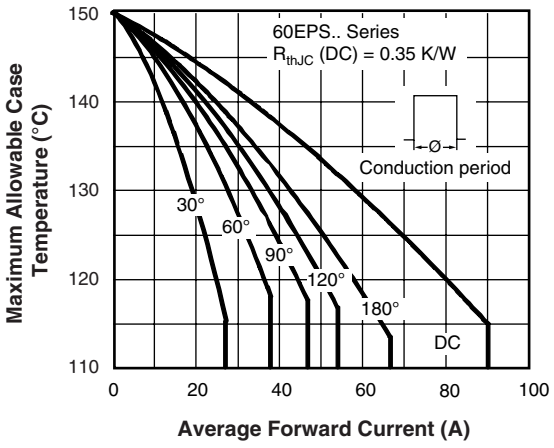


Fig. 2 - Current Rating Characteristics

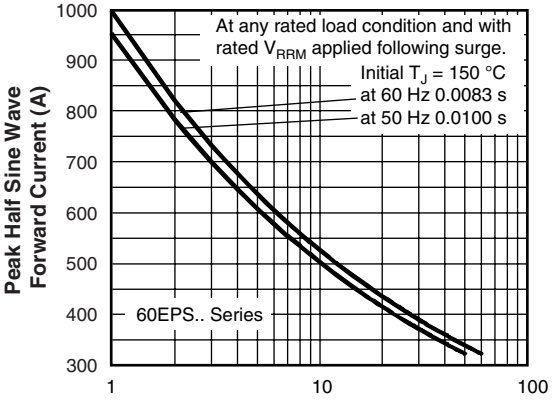


Fig. 5 - Maximum Non-Repetitive Surge Current

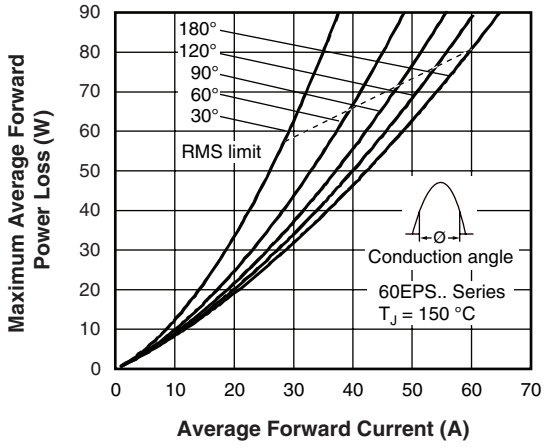


Fig. 3 - Forward Power Loss Characteristics

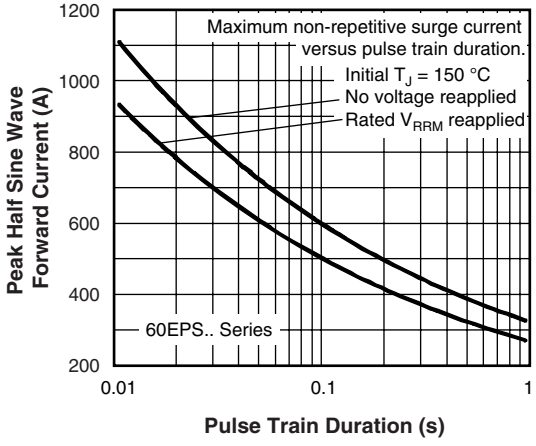


Fig. 6 - Maximum Non-Repetitive Surge Current

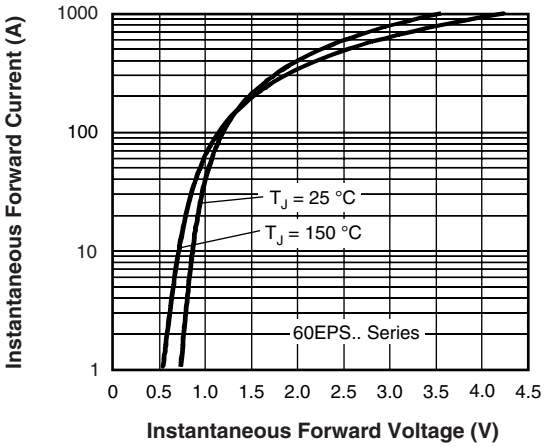


Fig. 7 - Forward Voltage Drop Characteristics

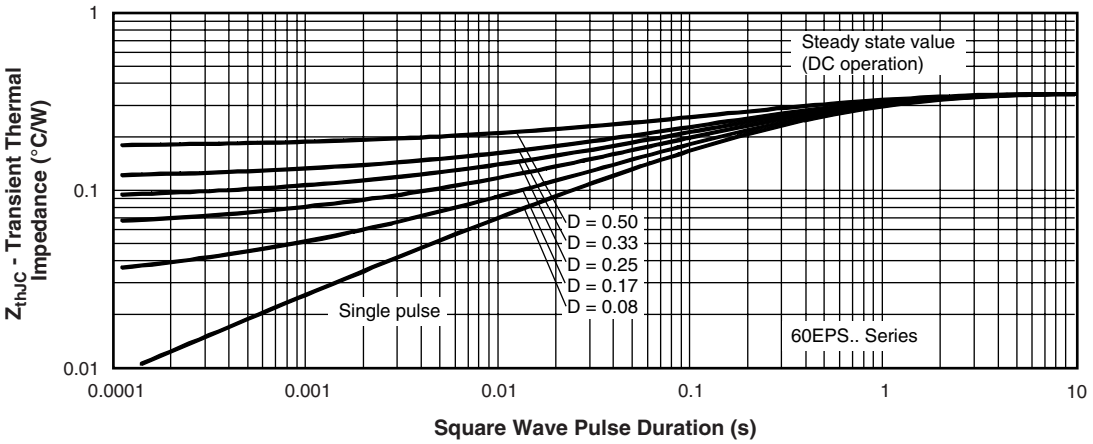


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code

60	E	P	S	16	PbF
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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