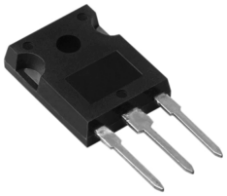
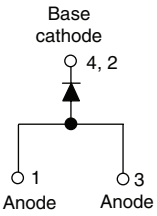
Input Rectifier Diode, 80 A



TO-247AC



DESCRIPTION/FEATURES

The 80EPS.. 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 80 A	1.17 V
I_{FSM}	1450 A
V_{RRM}	800/1200 V

MAJOR RATINGS AND CHARACTERISTICS			
SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Sinusoidal waveform	80	A
V_{RRM}	Range	800/1200	V
I_{FSM}		1450	A
V_F	80 A, T_J = 25 °C	1.17	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
80EPS08	800	900	1
80EPS12	1200	1300	

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	T_C = 100 °C, 180° conduction half sine wave	80	A
Maximum peak one cycle non-repetitive surge current	I_{FSM}	10 ms sine pulse, rated V_{RRM} applied	1450	
		10 ms sine pulse, no voltage reapplied	1500	
Maximum I^2t for fusing	I^2t	10 ms sine pulse, rated V_{RRM} applied	10 500	A^2s
		10 ms sine pulse, no voltage reapplied	14 000	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 ms to 10 ms, no voltage reapplied	105 000	$A^2\sqrt{s}$

ELECTRICAL SPECIFICATIONS					
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**VALUES**	**UNITS**
Maximum forward voltage drop	V_{FM}	80 A, T_J = 25 °C		1.17	V
Forward slope resistance	r_t	T_J = 150 °C		3.17	mΩ
Threshold voltage	$V_{F(TO)}$			0.73	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, flat, smooth and greased	0.2	
Approximate weight				6	g
				0.21	oz.
Mounting torque	minimum			6 (5)	kgf · cm (lbf · in)
	maximum			12 (10)	
Marking device			Case style TO-247AC (JEDEC)	80EPS08	
				80EPS12	

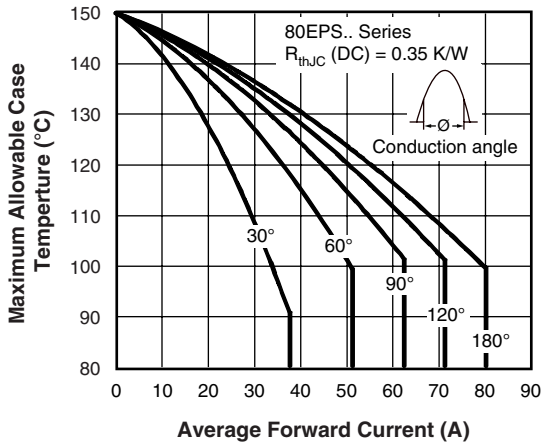


Fig. 1 - Current Rating Characteristics

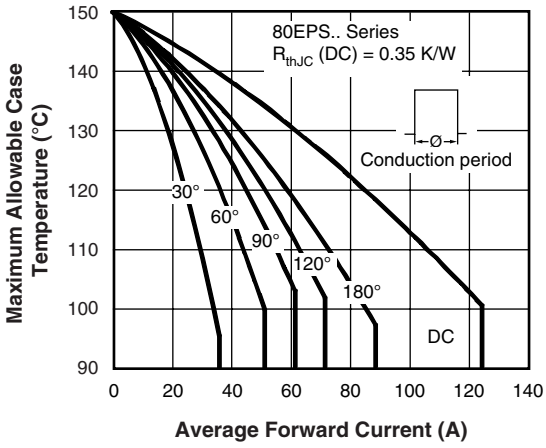


Fig. 2 - Current Rating Characteristics

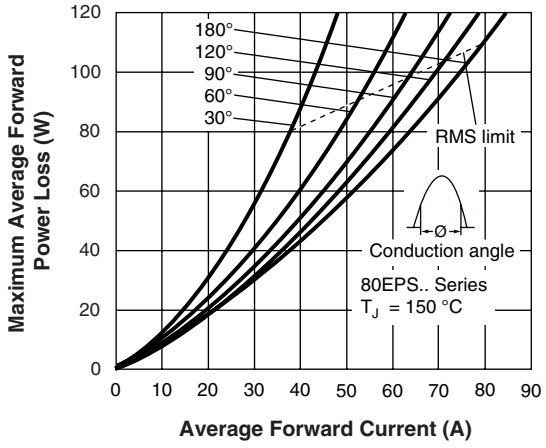


Fig. 3 - Forward Power Loss Characteristics

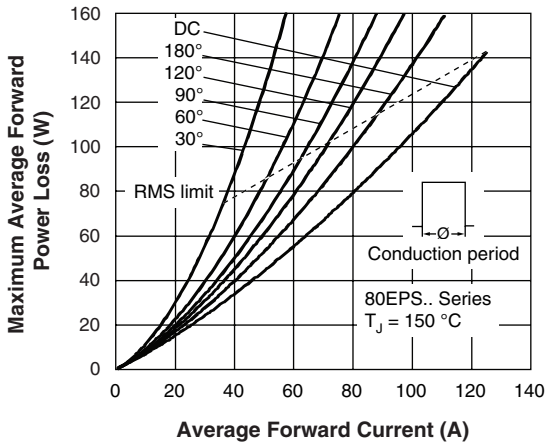


Fig. 4 - Forward Power Loss Characteristics

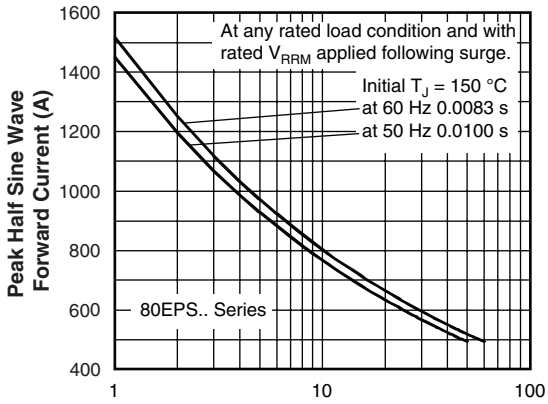


Fig. 5 - Maximum Non-Repetitive Surge Current

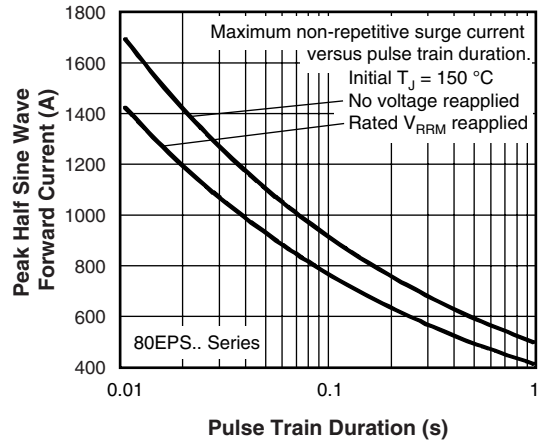


Fig. 6 - Maximum Non-Repetitive Surge Current

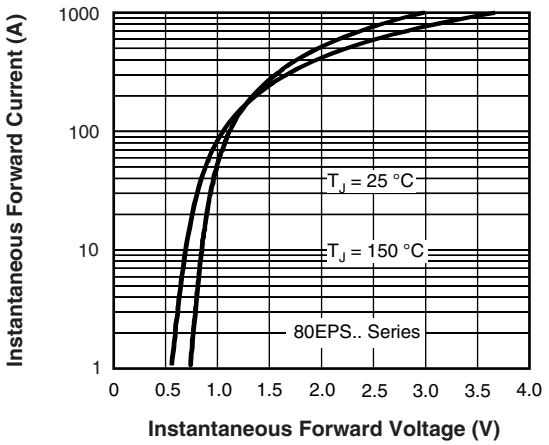


Fig. 7 - Forward Voltage Drop Characteristics

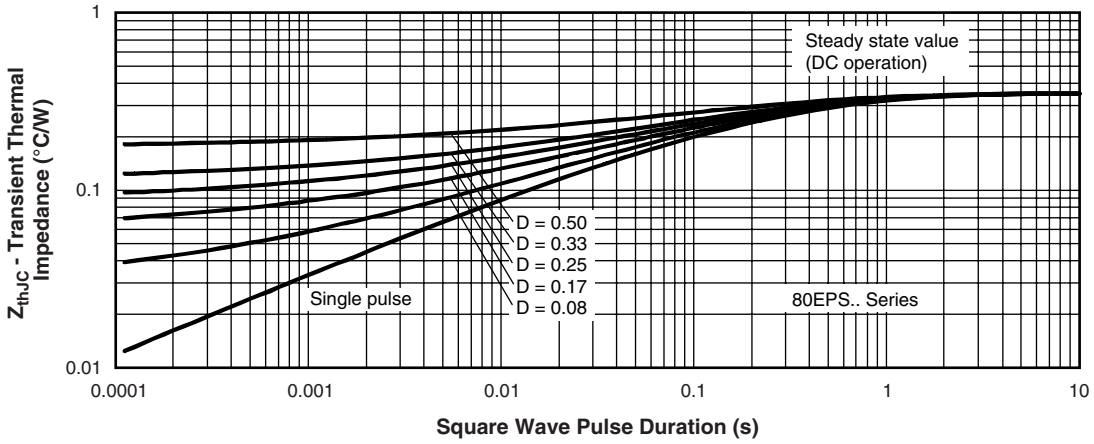


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code

80	E	P	S	12	-
1	2	3	4	5	6

1 - Current rating (80 = 80 A)

2 - Circuit configuration:
E = Single diode

3 - Package:
P = TO-247AC

4 - Type of silicon:
S = Standard recovery rectifier

5 - Voltage ratings (08 = 800 V, 12 = 1200 V)

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

LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95223
Part marking information	www.vishay.com/doc?95226

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