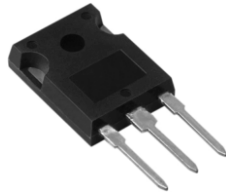
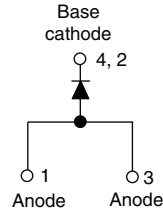


## Input Rectifier Diode, 80 A



TO-247AC



### DESCRIPTION/FEATURES

The 80EPS16PbF 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.

Compliant to RoHS directive 2002/95/EC.



Available  
**RoHS\***  
COMPLIANT

### PRODUCT SUMMARY

$V_F$ at 80 A	1.17 V
$I_{FSM}$	1450 A
$V_{RRM}$	1600 V

### MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Sinusoidal waveform	80	A
$V_{RRM}$		1600	V
$I_{FSM}$		1450	A
$V_F$	80 A, $T_J = 25\text{ °C}$	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
80EPS16PbF	1600	1700	1

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	$T_C = 100\text{ °C}$ , 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 <sup>2</sup> s
		10 ms sine pulse, no voltage reapplied	14 000	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$t = 0.1\text{ ms to }10\text{ ms}$ , no voltage reapplied	105 000	A <sup>2</sup> √s

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

# 80EPS16PbF High Voltage Series



Vishay High Power Products Input Rectifier Diode, 80 A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	$V_{FM}$	80 A, $T_J = 25\text{ }^\circ\text{C}$		1.17	V
Forward slope resistance	$r_t$	$T_J = 150\text{ }^\circ\text{C}$		3.17	$\text{m}\Omega$
Threshold voltage	$V_{F(TO)}$			0.73	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)	kgf · cm (lbf · in)
	maximum			12 (10)	
Marking device		Case style TO-247AC (JEDEC)		80EPS16	



# 80EPS16PbF High Voltage Series

Input Rectifier Diode, 80 A Vishay High Power Products

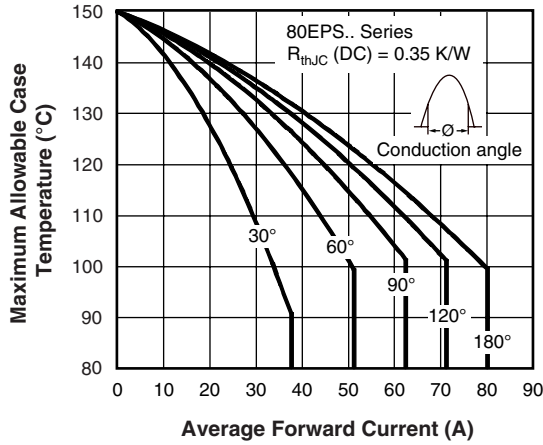


Fig. 1 - Current Rating Characteristics

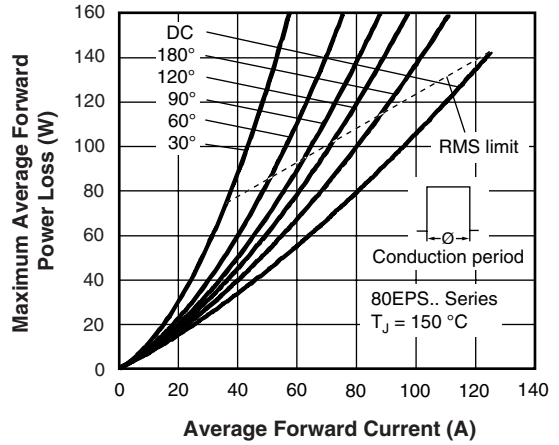


Fig. 4 - Forward Power Loss Characteristics

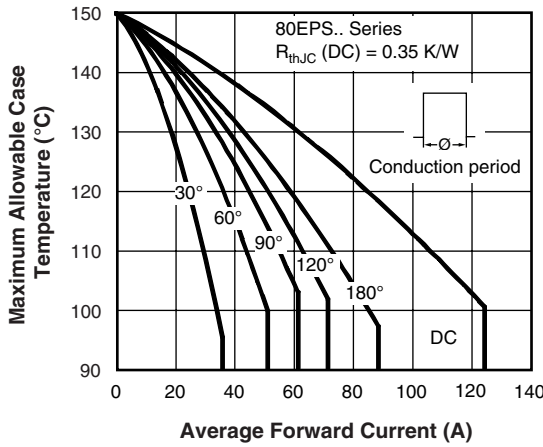


Fig. 2 - Current Rating Characteristics

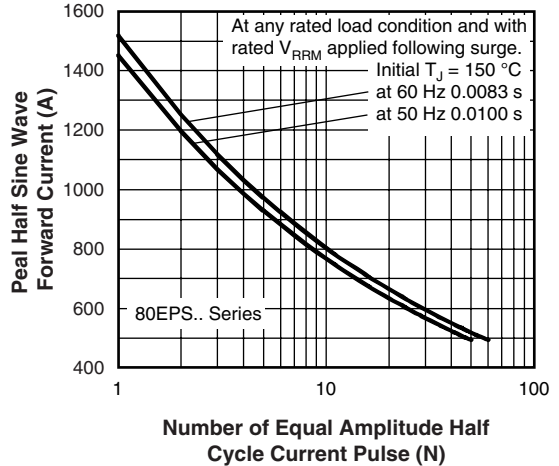


Fig. 5 - Maximum Non-Repetitive Surge Current

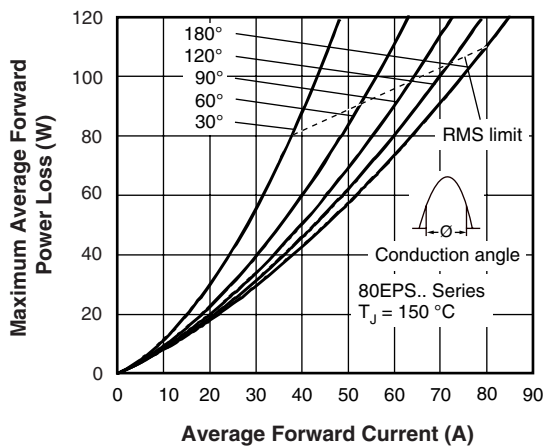


Fig. 3 - Forward Power Loss Characteristics

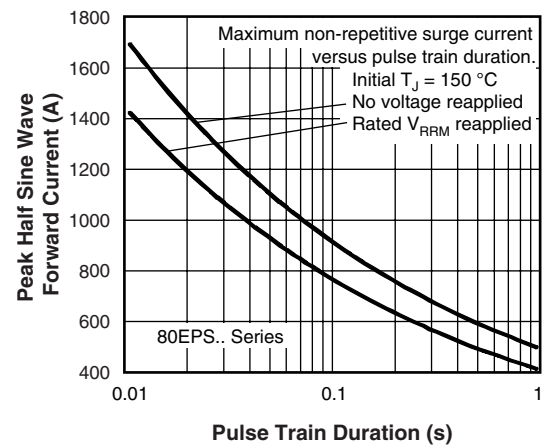


Fig. 6 - Maximum Non-Repetitive Surge Current

# 80EPS16PbF High Voltage Series

Vishay High Power Products Input Rectifier Diode, 80 A

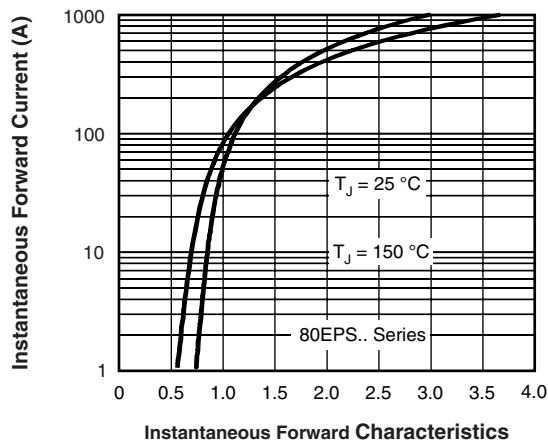


Fig. 7 - Forward Voltage Drop Characteristics

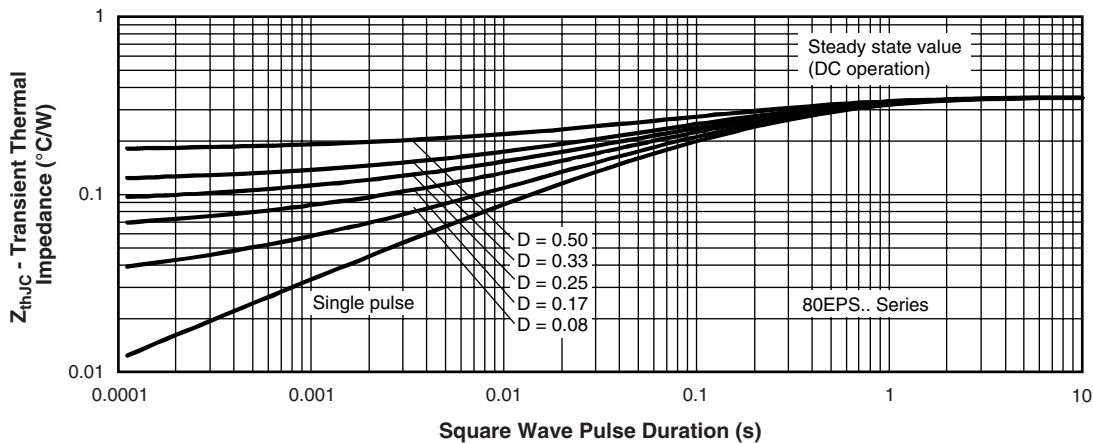


Fig. 8 - Thermal Impedance  $Z_{thJC}$  Characteristics



# 80EPS16PbF High Voltage Series

Input Rectifier Diode, 80 A Vishay High Power Products

## ORDERING INFORMATION TABLE

Device code	80	E	P	S	16	PbF
	①	②	③	④	⑤	⑥
	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 rating (16 = 1600 V)

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

LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95223">www.vishay.com/doc?95223</a>
Part marking information	<a href="http://www.vishay.com/doc?95226">www.vishay.com/doc?95226</a>



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