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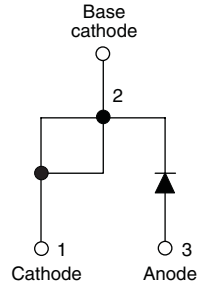
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Input Rectifier Diode, 40 A



TO-247AC modified



DESCRIPTION/FEATURES

The 40EPS..PbF 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.



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 20 A	1 V
I_{FSM}	475 A
V_{RRM}	800/1200 V

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Sinusoidal waveform	40	A
V_{RRM}	Range	800/1200	V
I_{FSM}		475	A
V_F	20 A, $T_J = 25\text{ °C}$	1.0	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
40EPS08PbF	800	900	1
40EPS12PbF	1200	1300	

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	$T_C = 105\text{ °C}$, 180° conduction half sine wave	40	A
Maximum peak one cycle non-repetitive surge current	I_{FSM}	10 ms sine pulse, rated V_{RRM} applied	400	
		10 ms sine pulse, no voltage reapplied	475	
Maximum I^2t for fusing	I^2t	10 ms sine pulse, rated V_{RRM} applied	800	A ² s
		10 ms sine pulse, no voltage reapplied	1131	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$t = 0.1$ to 10 ms, no voltage reapplied	11 310	A ² √s

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

40EPS..PbF High Voltage Series



Vishay High Power Products Input Rectifier Diode, 40 A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	V_{FM}	40 A, $T_J = 25\text{ }^\circ\text{C}$		1.1	V
Forward slope resistance	r_t	$T_J = 150\text{ }^\circ\text{C}$		7.16	$\text{m}\Omega$
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		0.6	$^\circ\text{C}/\text{W}$
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 modified (JEDEC)		40EPS08	
				40EPS12	

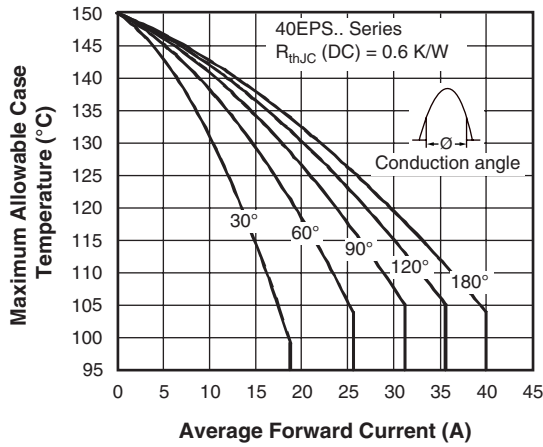


Fig. 1 - Current Rating Characteristics

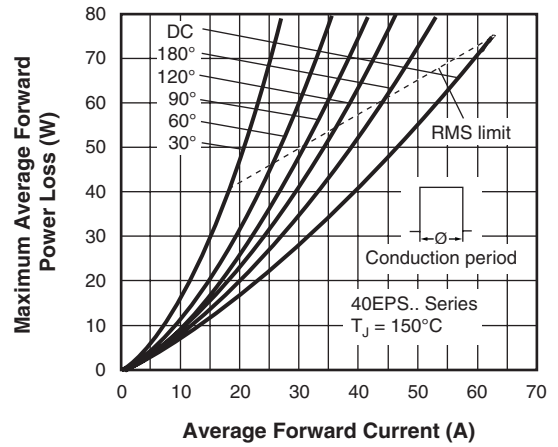


Fig. 4 - Forward Power Loss Characteristics

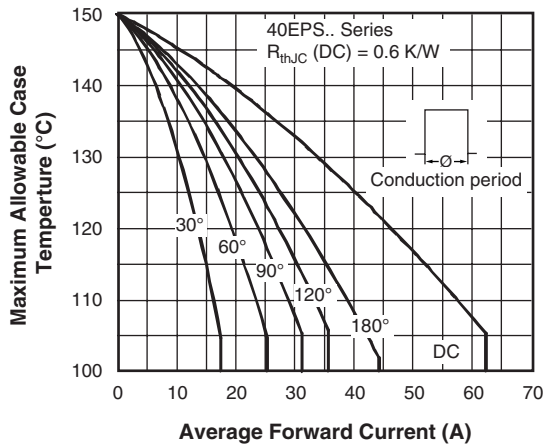


Fig. 2 - Current Rating Characteristics

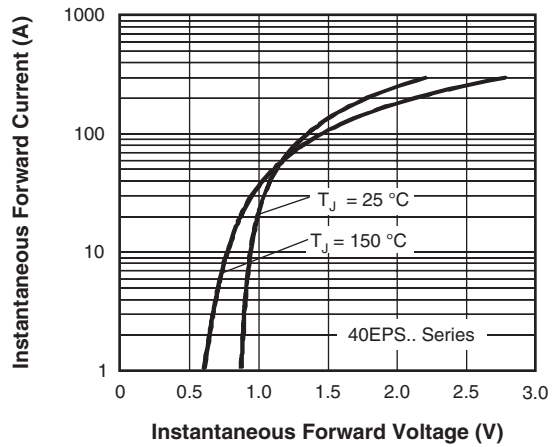


Fig. 5 - Forward Voltage Drop Characteristics

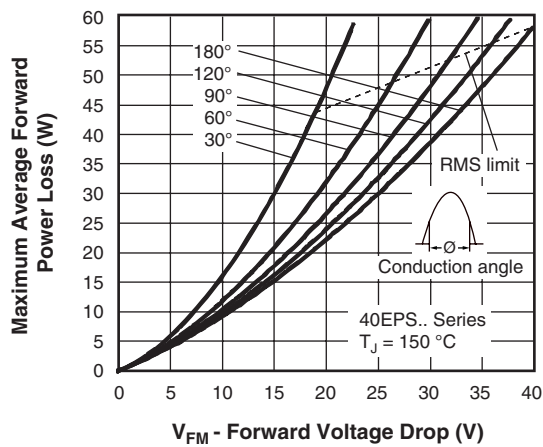


Fig. 3 - Forward Power Loss Characteristics

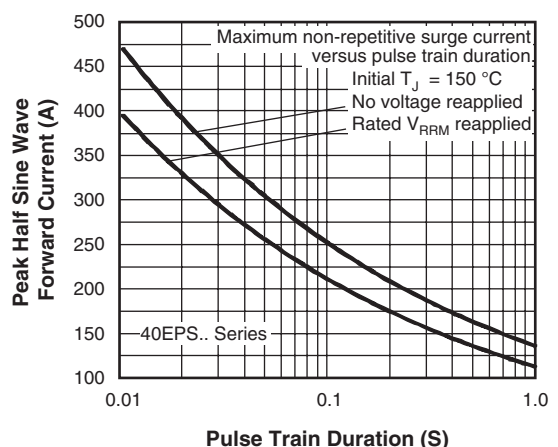


Fig. 6 - Maximum Non-Repetitive Surge Current

40EPS..PbF High Voltage Series

Vishay High Power Products Input Rectifier Diode, 40 A

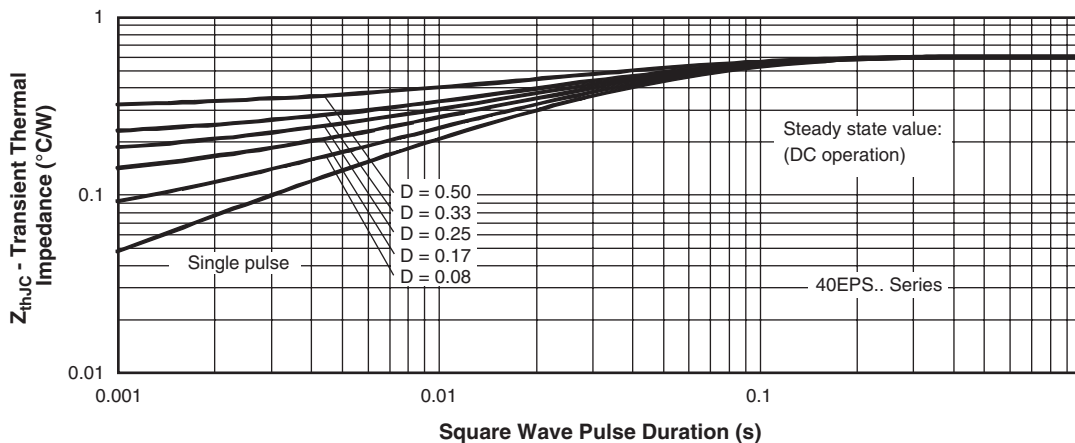


Fig. 7 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code	40	E	P	S	12	PbF
	①	②	③	④	⑤	⑥
	1	-	Current rating (40 = 40 A)			
	2	-	Circuit configuration: E = Single diode			
	3	-	Package: P = TO-247AC modified			
	4	-	Type of silicon: S = Standard recovery rectifier			
	5	-	Voltage rating		08 = 800 V	
	6	-	• None = Standard production • PbF = Lead (Pb)-free		12 = 1200 V	

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



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