

40EPF.. Soft Recovery Series

Vishay High Power Products

Fast Soft Recovery
Rectifier Diode, 40 A



ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	V_{FM}	40 A, $T_J = 25\text{ }^{\circ}\text{C}$		1.25	V
Forward slope resistance	r_t	$T_J = 125\text{ }^{\circ}\text{C}$		4.4	$\text{m}\Omega$
Threshold voltage	$V_{F(TO)}$			1.1	V
Maximum reverse leakage current	I_{RM}	$T_J = 25\text{ }^{\circ}\text{C}$	$V_R = \text{Rated } V_{RRM}$	0.1	mA
		$T_J = 150\text{ }^{\circ}\text{C}$		7.0	

RECOVERY CHARACTERISTICS					
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS	
Reverse recovery time	t_{rr}	I_F at 40 Apk 25 A/ μs 25 $^{\circ}\text{C}$	180	ns	
Reverse recovery current	I_{rr}		3.2	A	
Reverse recovery charge	Q_{rr}		0.5	μC	
Snap factor	S		0.5		

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	0.6	°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 (5)	kgf · cm (lbf · in)
	maximum		12 (10)	
Marking device		Case style TO-247AC modified (JEDEC)	40EPF06	

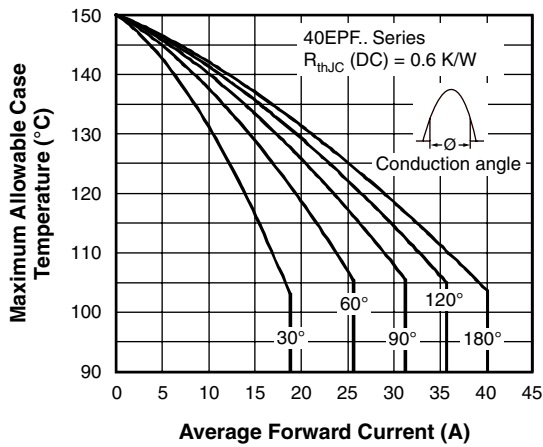


Fig. 1 - Current Rating Characteristics

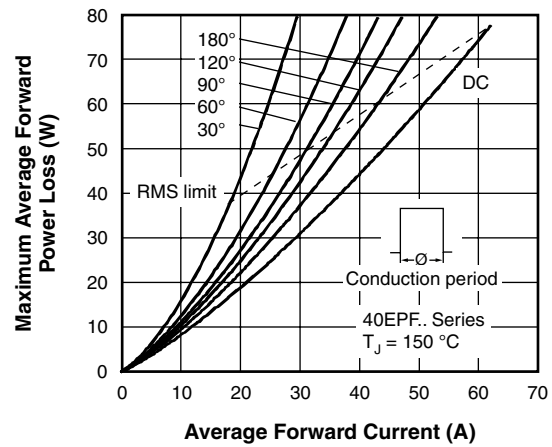


Fig. 4 - Forward Power Loss Characteristics

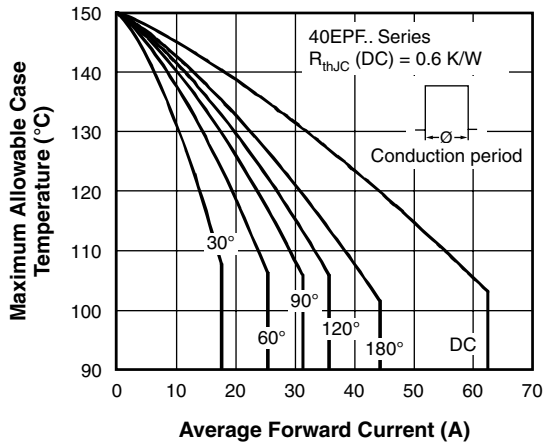


Fig. 2 - Current Rating Characteristics

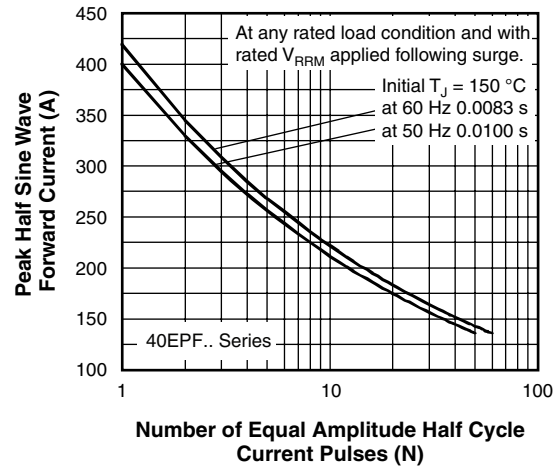


Fig. 5 - Maximum Non-Repetitive Surge Current

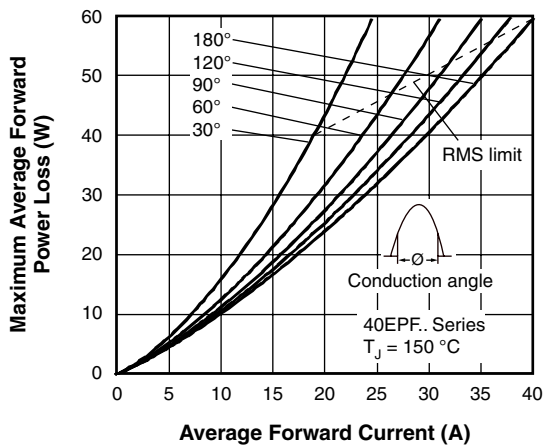


Fig. 3 - Forward Power Loss Characteristics

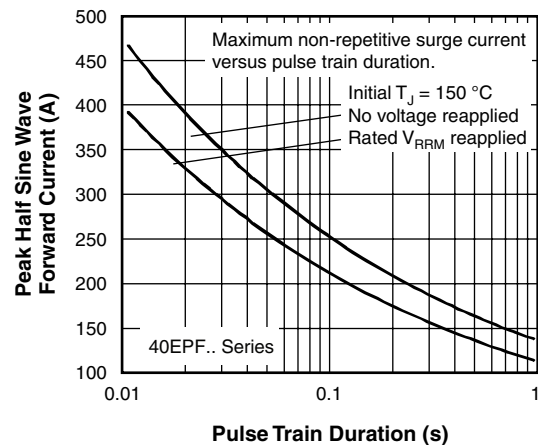


Fig. 6 - Maximum Non-Repetitive Surge Current

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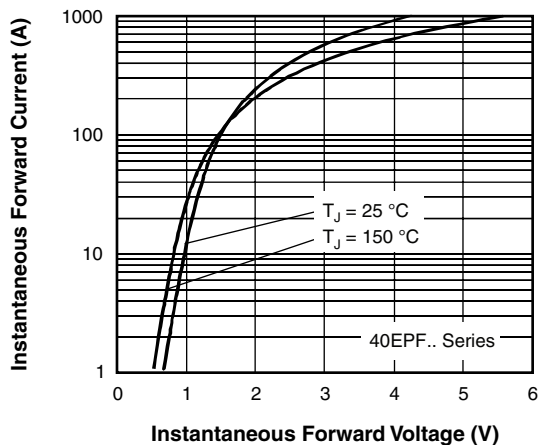


Fig. 7 - Forward Voltage Drop Characteristics

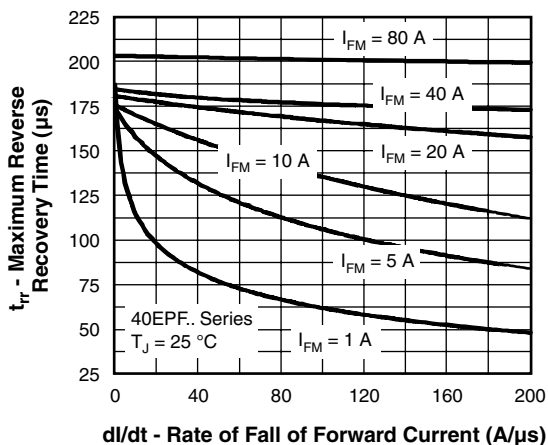


Fig. 8 - Recovery Time Characteristics, $T_J = 25\text{ }^{\circ}\text{C}$

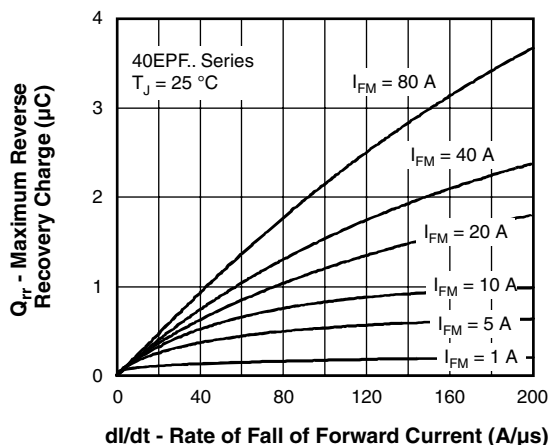


Fig. 10 - Recovery Charge Characteristics, $T_J = 25\text{ }^{\circ}\text{C}$

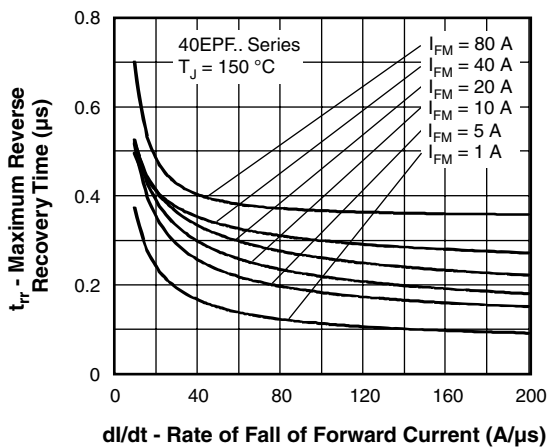


Fig. 9 - Recovery Time Characteristics, $T_J = 150\text{ }^{\circ}\text{C}$

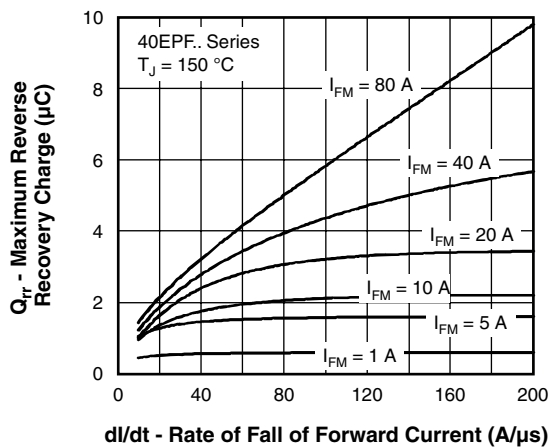


Fig. 11 - Recovery Charge Characteristics, $T_J = 150\text{ }^{\circ}\text{C}$

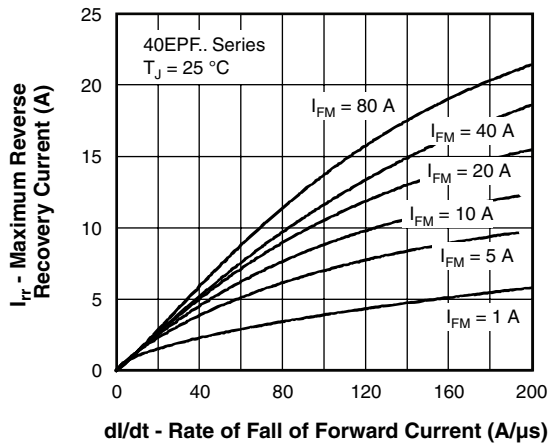


Fig. 12 - Recovery Current Characteristics, $T_J = 25^\circ C$

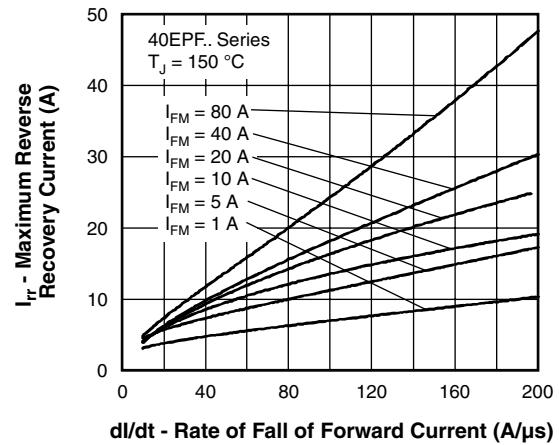


Fig. 13 - Recovery Current Characteristics, $T_J = 150^\circ C$

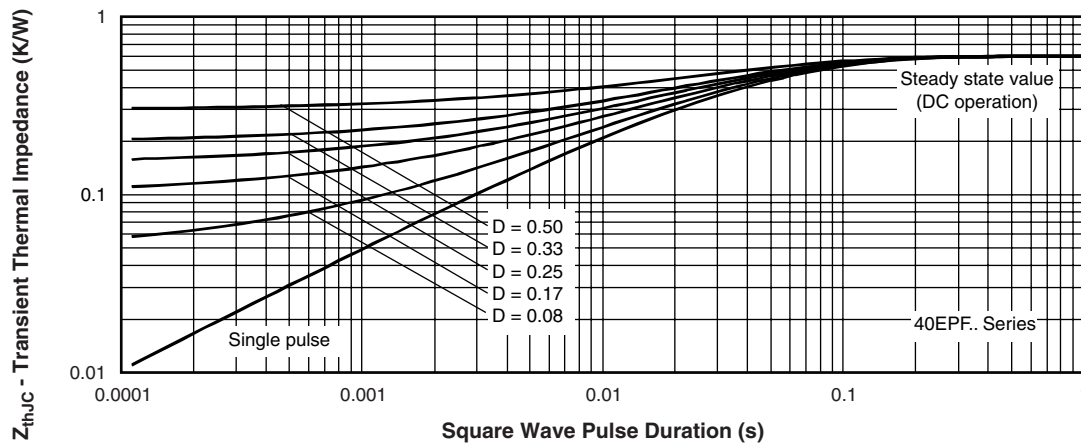


Fig. 14 - Thermal Impedance Z_{thJC} Characteristics

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ORDERING INFORMATION TABLE

Device code	40	E	P	F	06	-
	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: F = Fast diode			
	5	-	Voltage code x 100 = V_{RRM}			02 = 200 V 04 = 400 V 06 = 600 V
	6	-	• None = Standard production • PbF = Lead (Pb)-free			

LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95253
Part marking information	www.vishay.com/doc?95255
SPICE model	www.vishay.com/doc?95274



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