

15ETX06PbF, 15ETX06FPPbF

Vishay High Power Products

Hyperfast Rectifier,
15 A FRED Pt™



DYNAMIC RECOVERY CHARACTERISTICS (T _C = 25 °C unless otherwise specified)						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Reverse recovery time	t _{rr}	I _F = 1 A, dI _F /dt = 100 A/μs, V _R = 30 V	-	18	22	ns
		I _F = 15 A, dI _F /dt = 100 A/μs, V _R = 30 V	-	20	32	
		T _J = 25 °C	-	22	-	
		T _J = 125 °C	-	52	-	
Peak recovery current	I _{RRM}	T _J = 25 °C	-	2.4	-	A
		T _J = 125 °C	-	5.1	-	
Reverse recovery charge	Q _{rr}	T _J = 25 °C	-	25	-	μC
		T _J = 125 °C	-	150	-	
Reverse recovery time	t _{rr}	I _F = 15 A dI _F /dt = 800 A/μs V _R = 390 V	-	37	-	ns
Peak recovery current	I _{RRM}		-	16	-	A
Reverse recovery charge	Q _{rr}		-	350	-	nC

THERMAL - MECHANICAL SPECIFICATIONS						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 65	-	175	°C
Thermal resistance, junction to case (FULL-PAK)	R _{thJC}		-	1.0	1.3	°C/W
			-	3.0	3.5	
Thermal resistance, junction to ambient per leg	R _{thJA}	Typical socket mount	-	-	70	
Thermal resistance, case to heatsink	R _{thCS}	Mounting surface, flat, smooth and greased	-	0.5	-	
Weight			-	2.0	-	g
			-	0.07	-	oz.
Mounting torque			6.0 (5.0)	-	12 (10)	kgf · cm (lbf · in)
Marking device		Case style TO-220AC	15ETX06			
		Case style TO-220 FULL-PAK	15ETX06FP			



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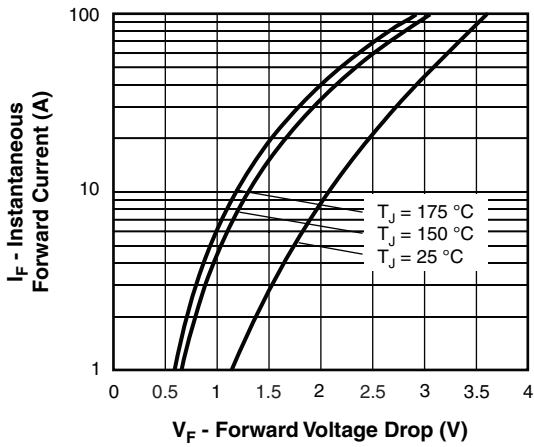


Fig. 1 - Typical Forward Voltage Drop Characteristics

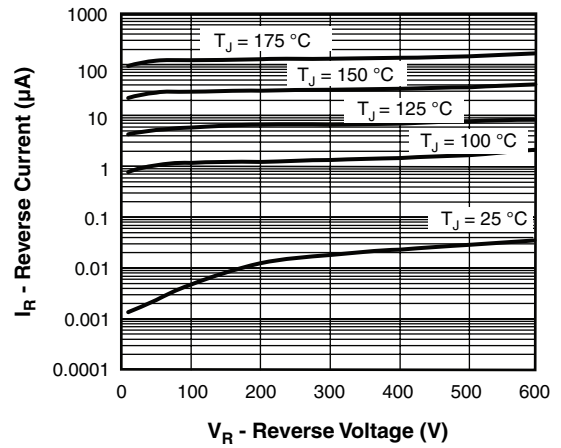


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

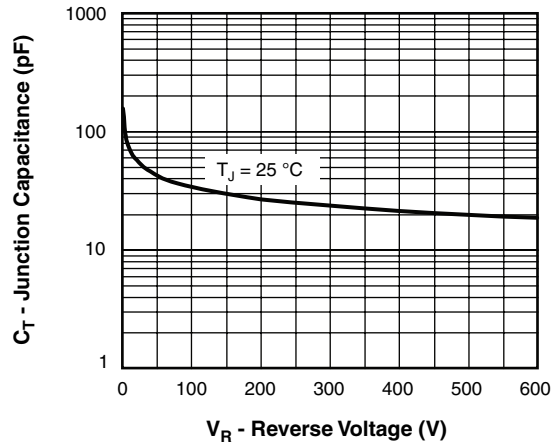


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

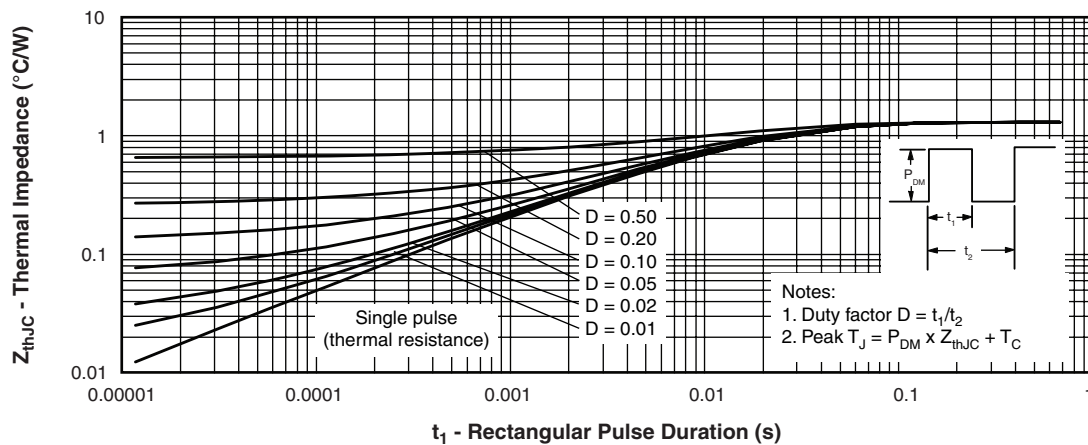


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

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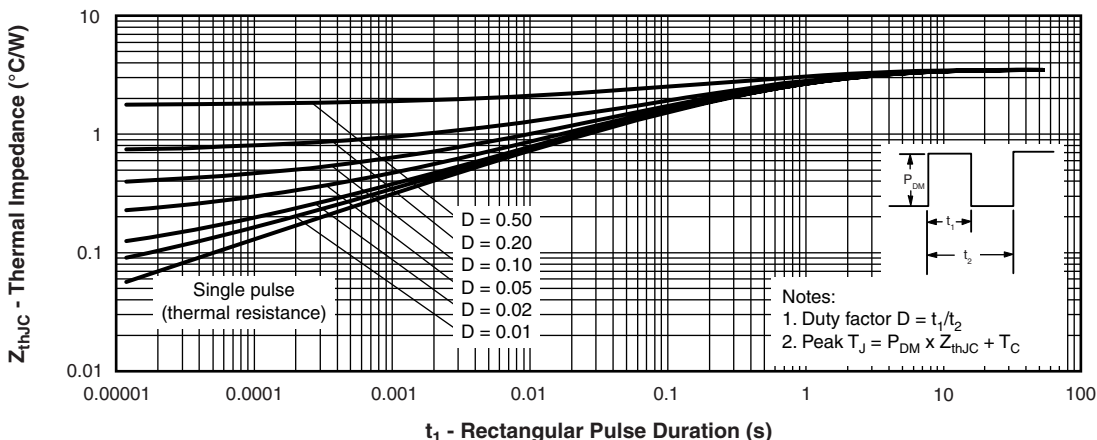


Fig. 5 - Maximum Thermal Impedance Z_{thJC} Characteristics (FULL-PAK)

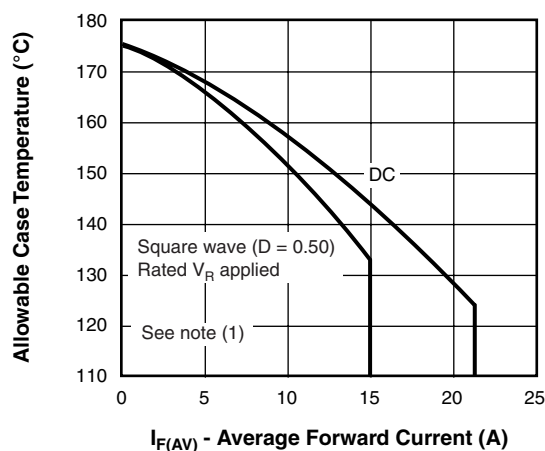


Fig. 6 - Maximum Allowable Case Temperature vs. Average Forward Current

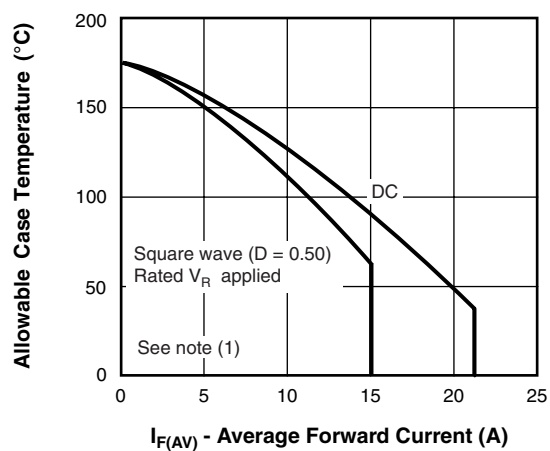


Fig. 7 - Maximum Allowable Case Temperature vs. Average Forward Current (FULL-PAK)

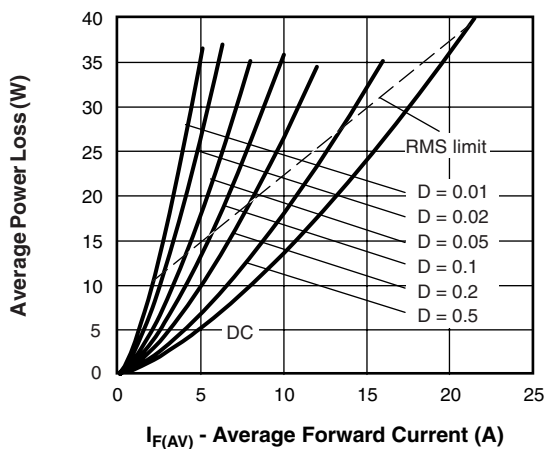


Fig. 8 - Forward Power Loss Characteristics

Note

- (1) Formula used: $T_C = T_J - (P_d + P_{dREV}) \times R_{thJC}$;
 P_d = Forward power loss = $I_{F(AV)} \times V_{FM}$ at $(I_{F(AV)}/D)$ (see fig. 8);
 P_{dREV} = Inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at V_{R1} = Rated V_R

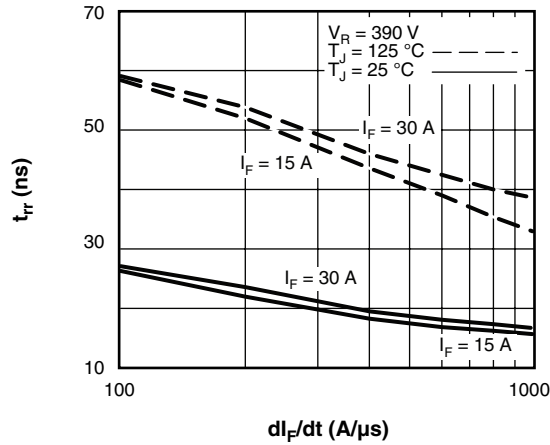


Fig. 9 - Typical Reverse Recovery Time vs. dI_F/dt

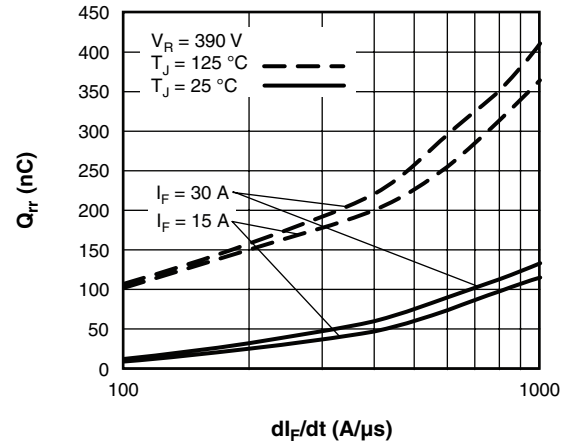


Fig. 10 - Typical Stored Charge vs. dI_F/dt

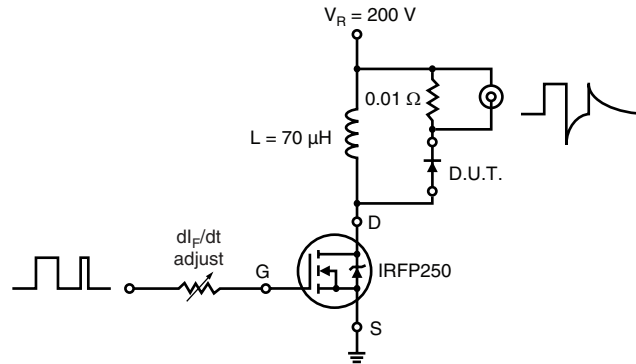


Fig. 11 - Reverse Recovery Parameter Test Circuit

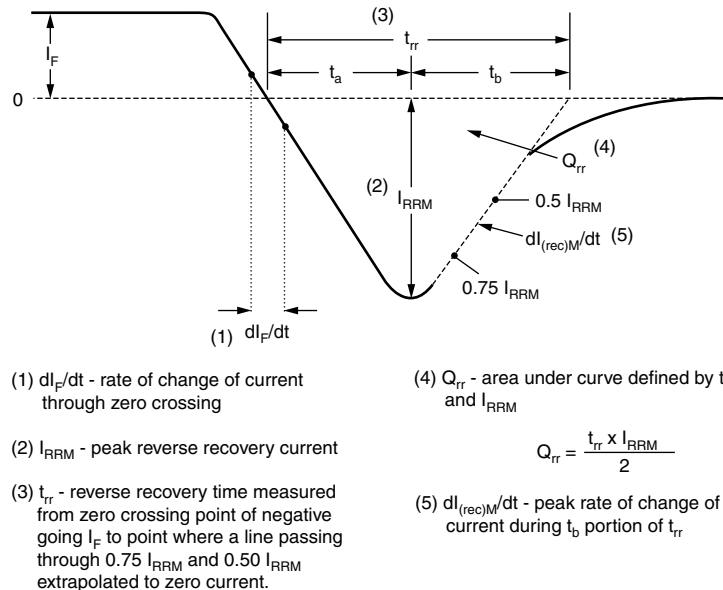


Fig. 12 - Reverse Recovery Waveform and Definitions

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ORDERING INFORMATION TABLE

Device code	15	E	T	X	06	FP	PbF
	①	②	③	④	⑤	⑥	⑦

- | | | |
|---|---|--|
| ① | - | Current rating (15 = 15 A) |
| ② | - | E = Single diode |
| ③ | - | T = TO-220, D ² PAK |
| ④ | - | X = Hyperfast recovery |
| ⑤ | - | Voltage rating (06 = 600 V) |
| ⑥ | - | • None = TO-220AC
• FP = TO-220 FULL-PAK |
| ⑦ | - | • None = Standard production
• PbF = Lead (Pb)-free |

Tube standard pack quantity: 50 pieces

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95039
Part marking information	http://www.vishay.com/doc?95045



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