

DYNAMIC RECOVERY CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Reverse recovery time	t_{rr}	$I_F = 1\text{ A}$, $di_F/dt = 100\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$	-	22	30	ns
		$I_F = 15\text{ A}$, $di_F/dt = 100\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$	-	28	35	
		$T_J = 25\text{ }^{\circ}\text{C}$	-	29	-	
		$T_J = 125\text{ }^{\circ}\text{C}$	-	75	-	
Peak recovery current	I_{RRM}	$T_J = 25\text{ }^{\circ}\text{C}$	-	3.5	-	A
		$T_J = 125\text{ }^{\circ}\text{C}$	-	7	-	
Reverse recovery charge	Q_{rr}	$T_J = 25\text{ }^{\circ}\text{C}$	-	57	-	μC
		$T_J = 125\text{ }^{\circ}\text{C}$	-	300	-	
Reverse recovery time	t_{rr}	$I_F = 15\text{ A}$ $di_F/dt = 200\text{ A}/\mu\text{s}$ $V_R = 390\text{ V}$	-	51	-	ns
Peak recovery current	I_{RRM}		-	20	-	A
Reverse recovery charge	Q_{rr}		-	580	-	nC

THERMAL - MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Maximum junction and storage temperature range	T_J , T_{Stg}		- 65	-	175	$^{\circ}\text{C}$
Thermal resistance, junction to case per leg	R_{thJC}		-	1.0	1.3	$^{\circ}\text{C}/\text{W}$
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 D ² PAK	15ETH06S			
		Case style TO-262	15ETH06-1			

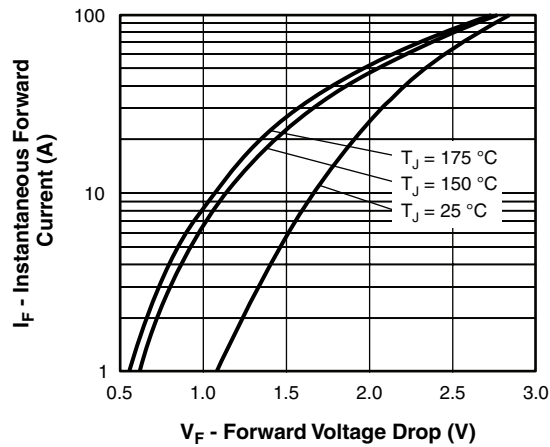


Fig. 1 - Typical Forward Voltage Drop Characteristics

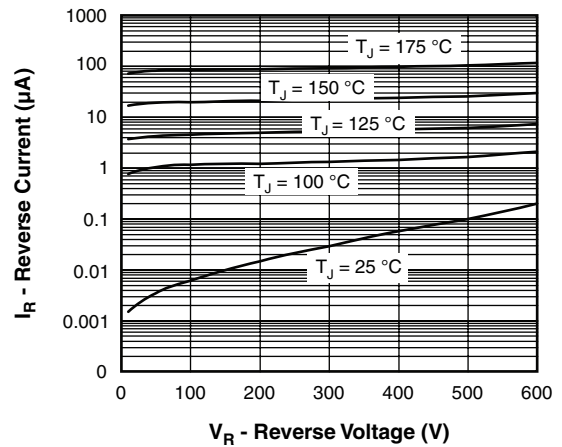


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

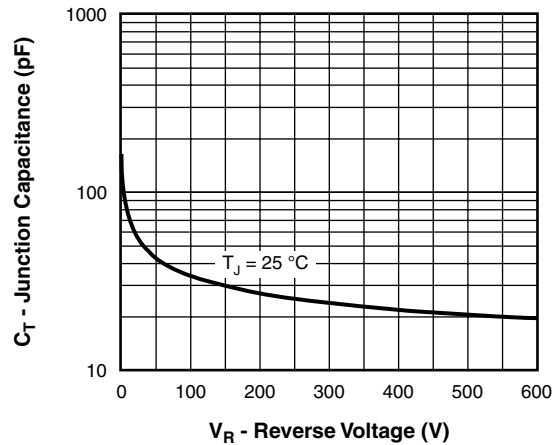


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

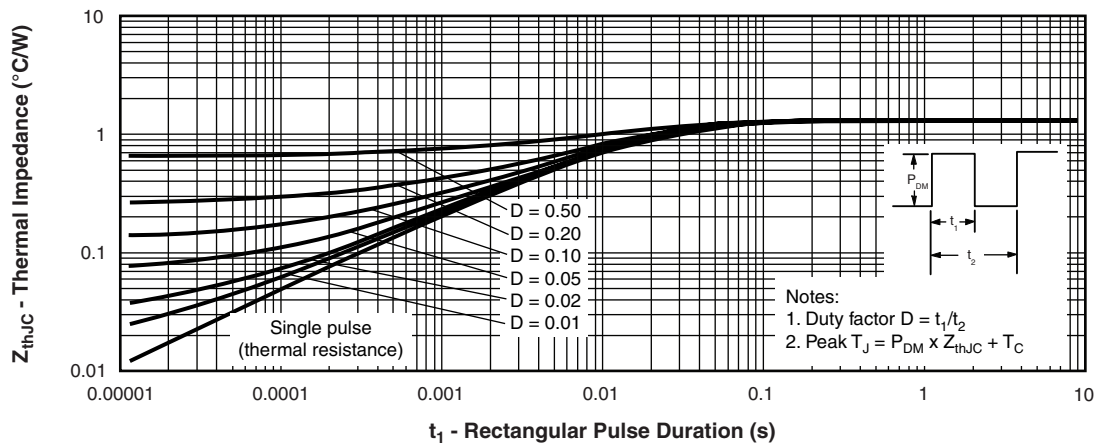


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

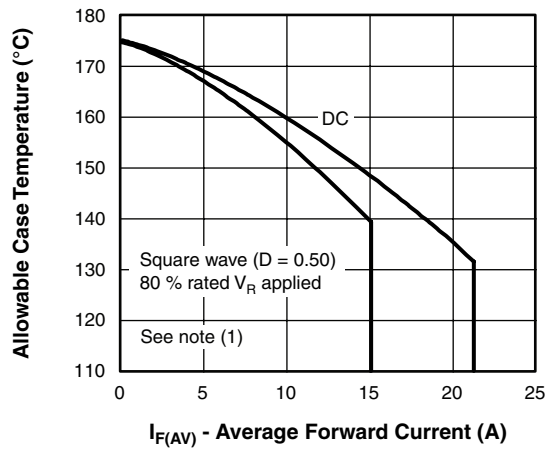


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

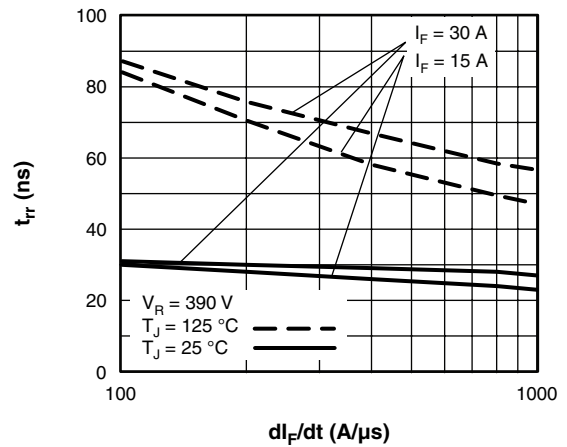


Fig. 7 - Typical Reverse Recovery vs. dI_F/dt

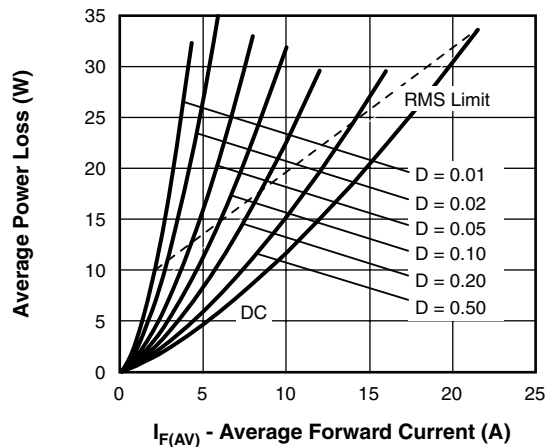


Fig. 6 - Forward Power Loss Characteristics

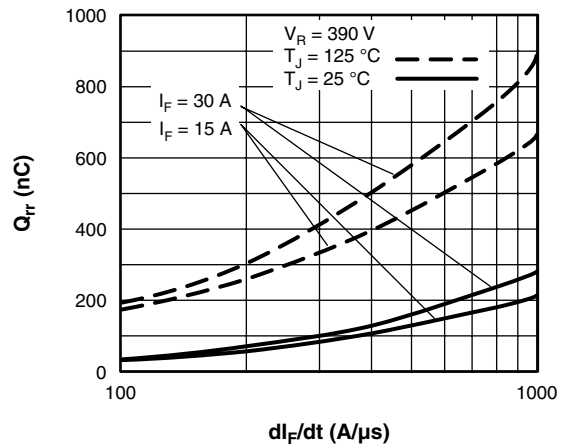


Fig. 8 - Typical Stored Charge vs. dI_F/dt

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. 6);
 P_{dREV} = Inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at V_{R1} = Rated V_R

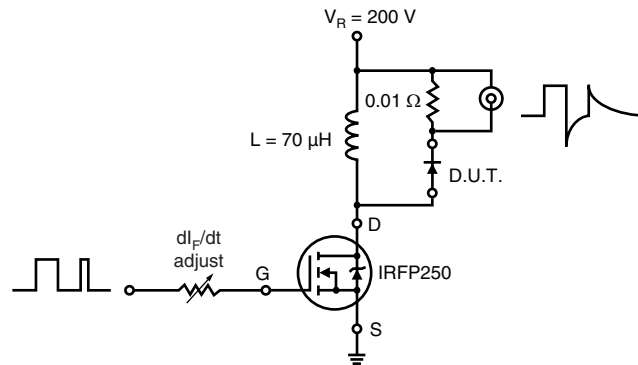


Fig. 9 - Reverse Recovery Parameter Test Circuit

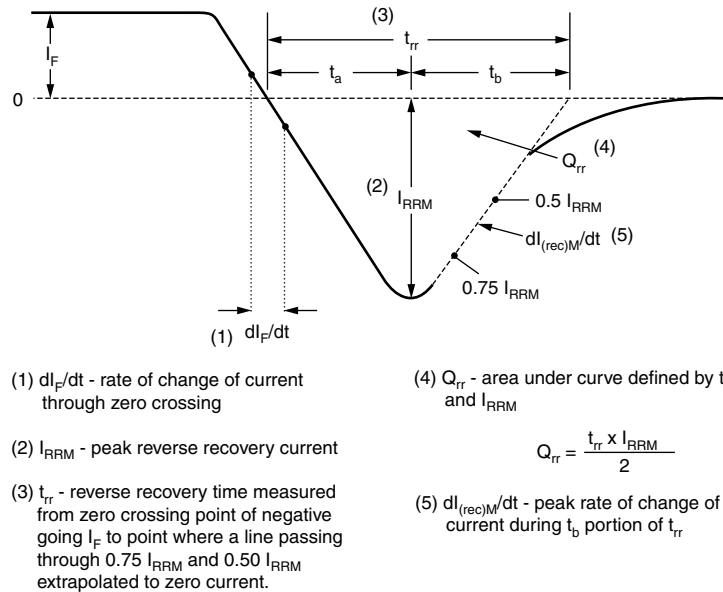


Fig. 10 - Reverse Recovery Waveform and Definitions

ORDERING INFORMATION TABLE

Device code	15	E	T	H	06	S	TRL	-
	1	2	3	4	5	6	7	8

- | | | |
|---|---|--|
| 1 | - | Current rating (15 A) |
| 2 | - | E = Single diode |
| 3 | - | T = TO-220, D ² PAK |
| 4 | - | H = Hyperfast rectifier |
| 5 | - | Voltage rating (06 = 600 V) |
| 6 | - | <ul style="list-style-type: none"> • S = D²PAK • -1 = TO-262 |
| 7 | - | <ul style="list-style-type: none"> • None = Tube (50 pieces) • TRL = Tape and reel (left oriented, for D²PAK package) • TRR = Tape and reel (right oriented, for D²PAK package) |
| 8 | - | <ul style="list-style-type: none"> • None = Standard production • PbF = Lead (Pb)-free |

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95014
Part marking information	http://www.vishay.com/doc?95008
Packaging information	http://www.vishay.com/doc?95032



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