Electrical Specifications $T_C = 25^oC$, Unless Otherwise Specified

SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
V_F	$I_F = 6A$	-	-	2.1	V
	$I_F = 6A$, $T_C = 150^oC$	-	-	1.7	V
I_R	$V_R = 600V$	-	-	100	μA
	$V_R = 600V$, $T_C = 150^oC$	-	-	500	μA
t_{rr}	$I_F = 1A$, $dI_F/dt = 200A/\mu s$	-	-	30	ns
	$I_F = 6A$, $dI_F/dt = 200A/\mu s$	-	-	35	ns
t_a	$I_F = 6A$, $dI_F/dt = 200A/\mu s$	-	16	-	ns
t_b	$I_F = 6A$, $dI_F/dt = 200A/\mu s$	-	8.5	-	ns
Q_{RR}	$I_F = 6A$, $dI_F/dt = 200A/\mu s$	-	45	-	nC
C_J	$V_R = 10V$, $I_F = 0A$	-	20	-	pF
$R_{\theta JC}$		-	-	3	$^oC/W$

DEFINITIONS

V_F = Instantaneous forward voltage (pw = 300μs, D = 2%).

I_R = Instantaneous reverse current.

t_{rr} = Reverse recovery time (See Figure 9), summation of $t_a + t_b$.

t_a = Time to reach peak reverse current (See Figure 9).

t_b = Time from peak I_{RM} to projected zero crossing of I_{RM} based on a straight line from peak I_{RM} through 25% of I_{RM} (See Figure 9).

Q_{RR} = Reverse recovery charge.

C_J = Junction capacitance.

$R_{\theta JC}$ = Thermal resistance junction to case.

pw = Pulse width.

D = Duty cycle.

Typical Performance Curves

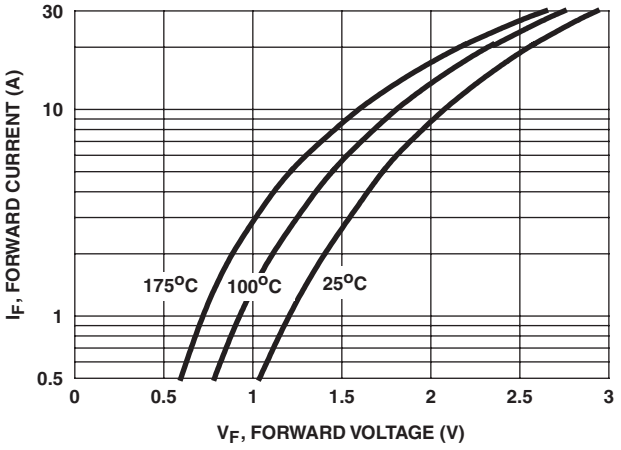

FIGURE 1. FORWARD CURRENT vs FORWARD VOLTAGE

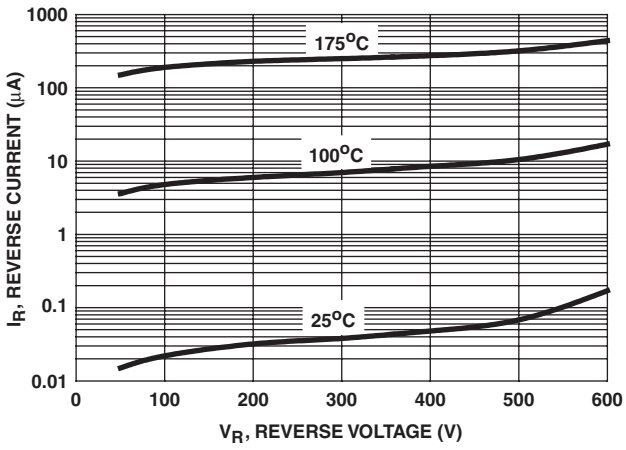

FIGURE 2. REVERSE CURRENT vs REVERSE

Typical Performance Curves (Continued)

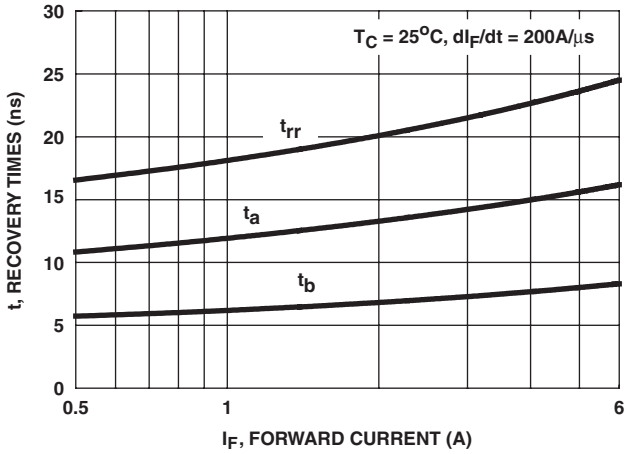

FIGURE 3. t_{rr}, t_a AND t_b CURVES vs FORWARD CURRENT

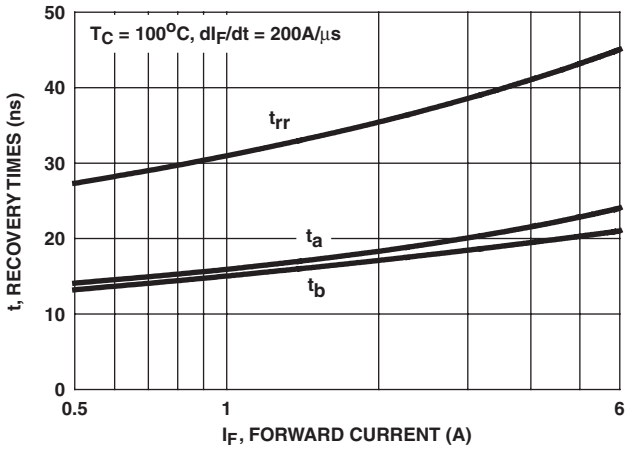

FIGURE 4. t_{rr}, t_a AND t_b CURVES vs FORWARD CURRENT

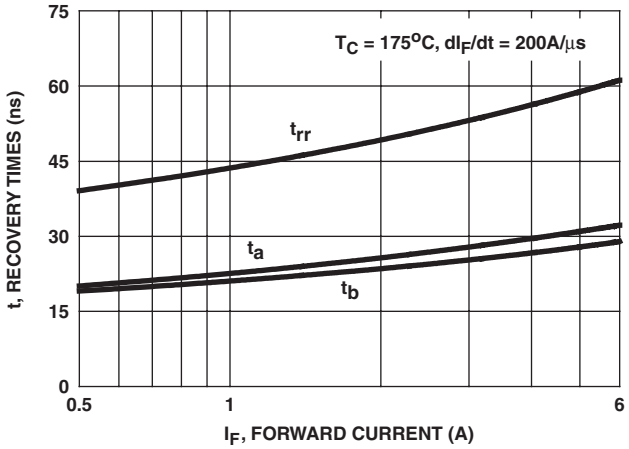

FIGURE 5. t_{rr}, t_a AND t_b CURVES vs FORWARD CURRENT

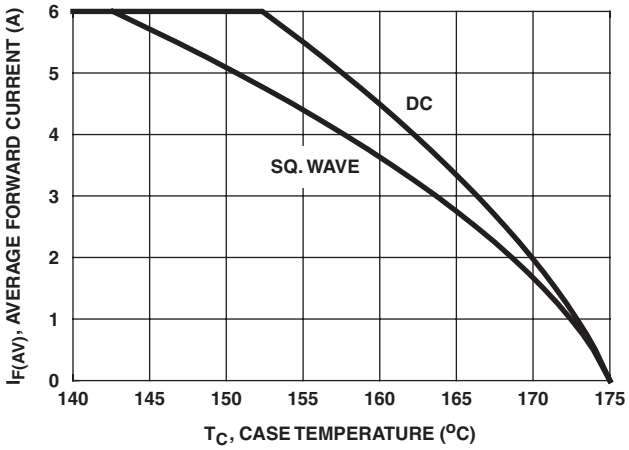

FIGURE 6. CURRENT DERATING CURVE

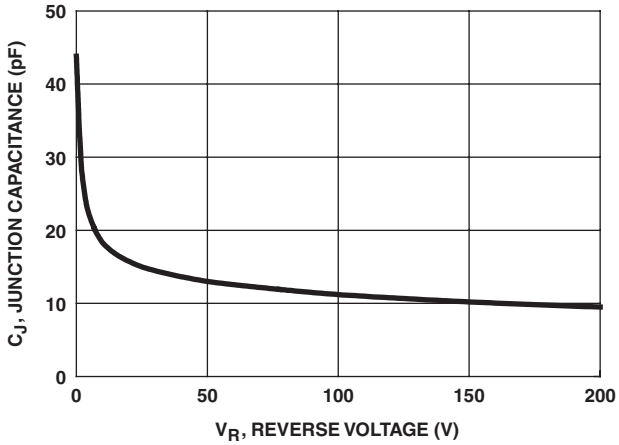

FIGURE 7. JUNCTION CAPACITANCE vs REVERSE VOLTAGE

Test Circuits and Waveforms

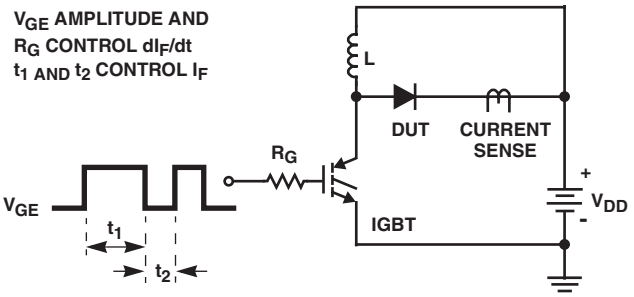

FIGURE 8. t_{rr} TEST CIRCUIT

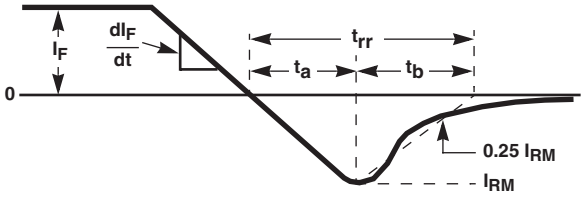

FIGURE 9. t_{rr} WAVEFORMS AND DEFINITIONS

I_{MAX} = 1A
L = 20mH
R < 0.1Ω
$E_{AVL} = 1/2LI^2 [V_{R(AVL)}/(V_{R(AVL)} - V_{DD})]$
Q_1 = IGBT (BV_{CES} > DUT $V_{R(AVL)}$)

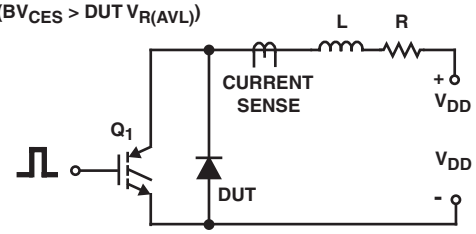

FIGURE 10. AVALANCHE ENERGY TEST CIRCUIT

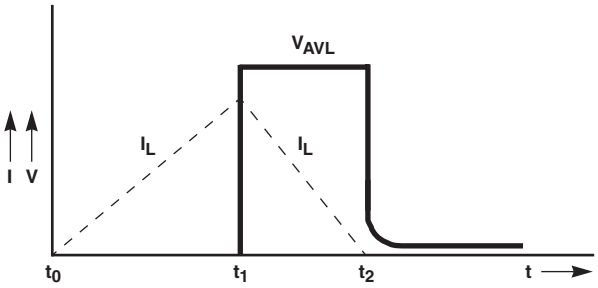

FIGURE 11. AVALANCHE CURRENT AND VOLTAGE WAVEFORMS

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