

## Maximum Ratings ( $T_c = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
$V_{RRM}$	Repetitive Peak Reverse Voltage	650	V		
$V_{RSM}$	Surge Peak Reverse Voltage	650	V		
$V_{DC}$	DC Blocking Voltage	650	V		
$I_F$	Continuous Forward Current	20	A	$T_C=150^\circ\text{C}$	Fig. 7
$I_{FRM}$	Repetitive Peak Forward Surge Current	140	A	$T_C=25^\circ\text{C}$ , $t_p=10$ ms, Half Sine Wave,	
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	170	A	$T_C=25^\circ\text{C}$ , $t_p=10$ ms, Half Sine Wave	
$I_{F,Max}$	Non-Repetitive Peak Forward Surge Current	1360	A	$T_C=25^\circ\text{C}$ , $t_p= 10$ $\mu$ s, Pulse	
$P_{tot}$	Power Dissipation	300 130	W	$T_C=25^\circ\text{C}$ $T_C=110^\circ\text{C}$	Fig. 6
$T_j, T_{stg}$	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$		

## Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
$V_F$	Forward Voltage	1.45 1.85	1.8 2.4	V	$I_F = 20$ A $T_j=25^\circ\text{C}$ $I_F = 20$ A $T_j=175^\circ\text{C}$	Fig. 1
$I_R$	Reverse Current	2 40	20 200	$\mu\text{A}$	$V_R = 650$ V $T_j=25^\circ\text{C}$ $V_R = 650$ V $T_j=175^\circ\text{C}$	Fig. 2
$Q_C$	Total Capacitive Charge	65		nC	$V_R = 400$ V, $T_j = 25^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V) dV$	Fig. 4
C	Total Capacitance	1340 120 109		pF	$V_R = 0$ V, $T_j = 25^\circ\text{C}$ , $f = 1$ MHz $V_R = 200$ V, $T_j = 25^\circ\text{C}$ , $f = 1$ MHz $V_R = 400$ V, $T_j = 25^\circ\text{C}$ , $f = 1$ MHz	Fig. 3
$E_C$	Capacitance Stored Energy	16		$\mu\text{J}$	$V_R = 400$ V	Fig. 5

## Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.50	$^\circ\text{C}/\text{W}$	Fig. 8

Typical Performance

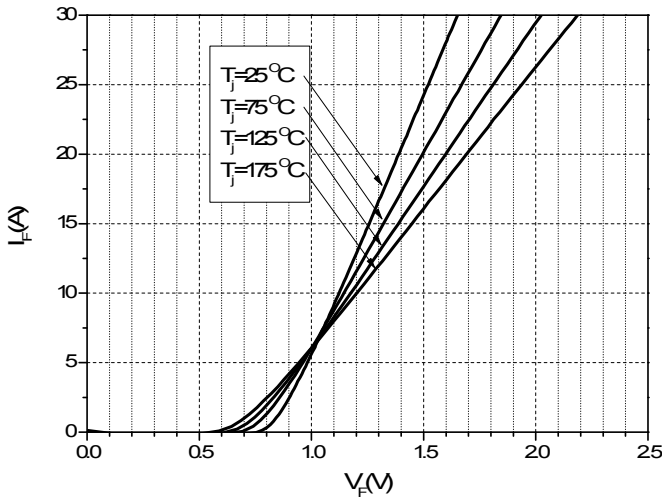


Figure 1. Forward Characteristics

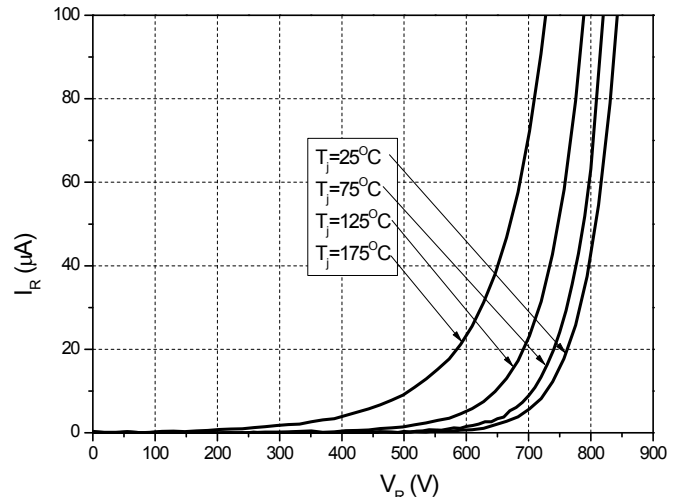


Figure 2. Reverse Characteristics

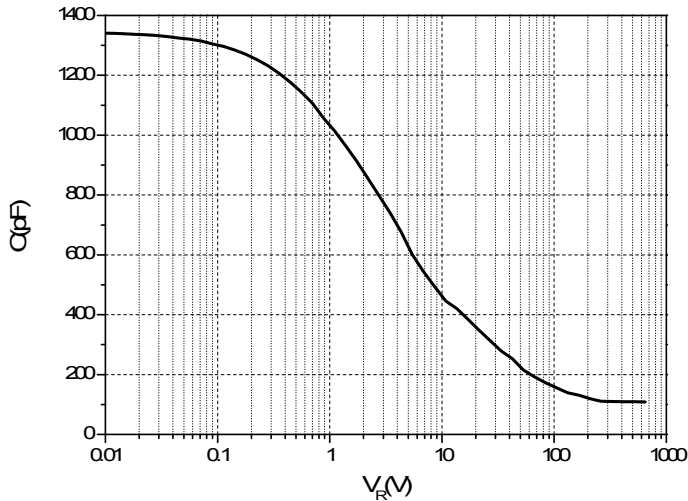


Figure 3. Capacitance vs. Reverse Voltage

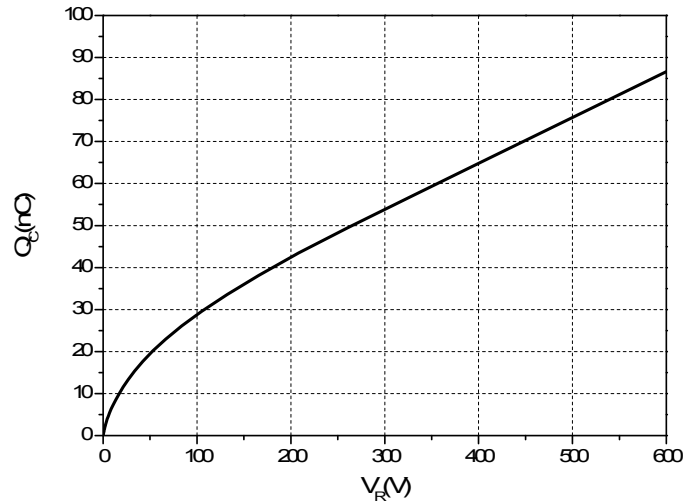


Figure 4. Total Capacitance Charge vs. Reverse Voltage

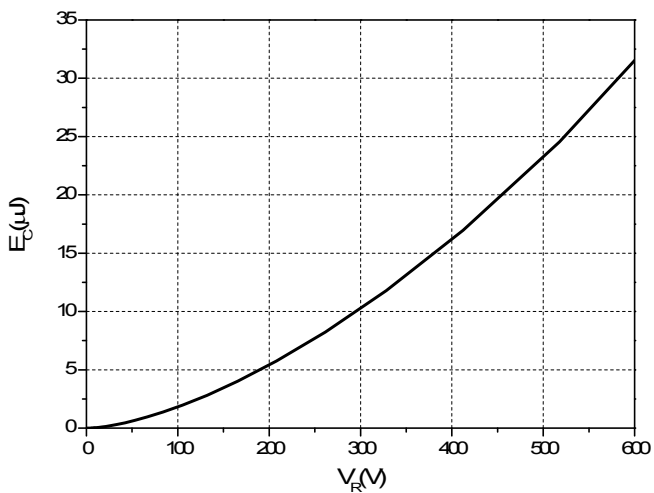


Figure 5. Capacitance Stored Energy

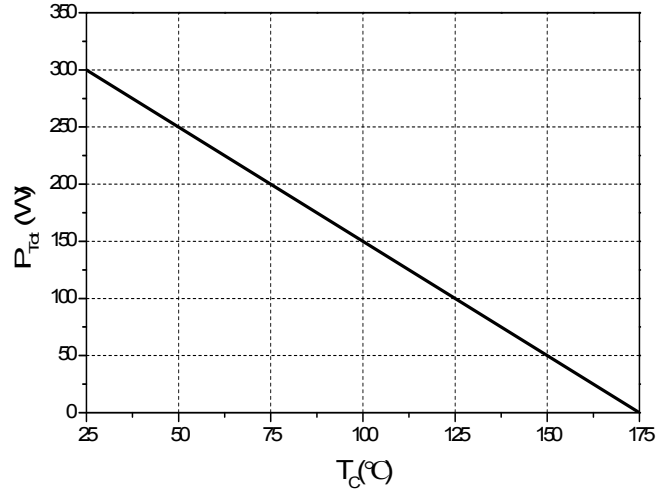


Figure 6. Power Derating

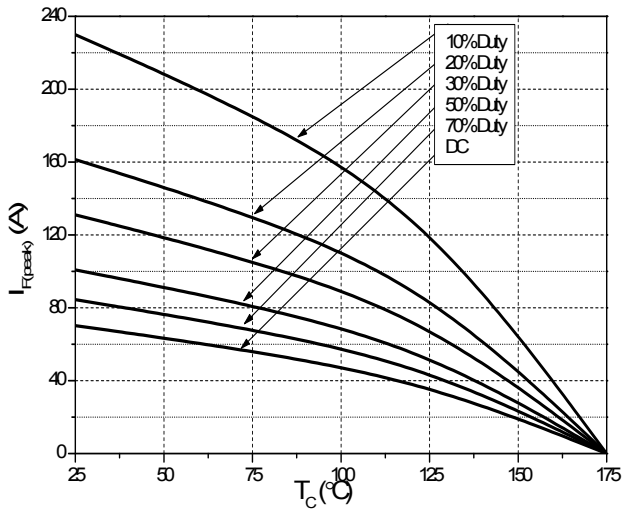


Figure 7. Current Derating

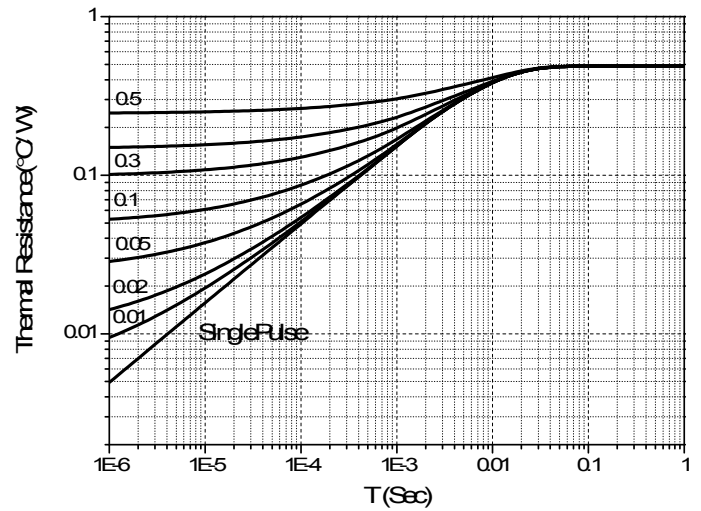
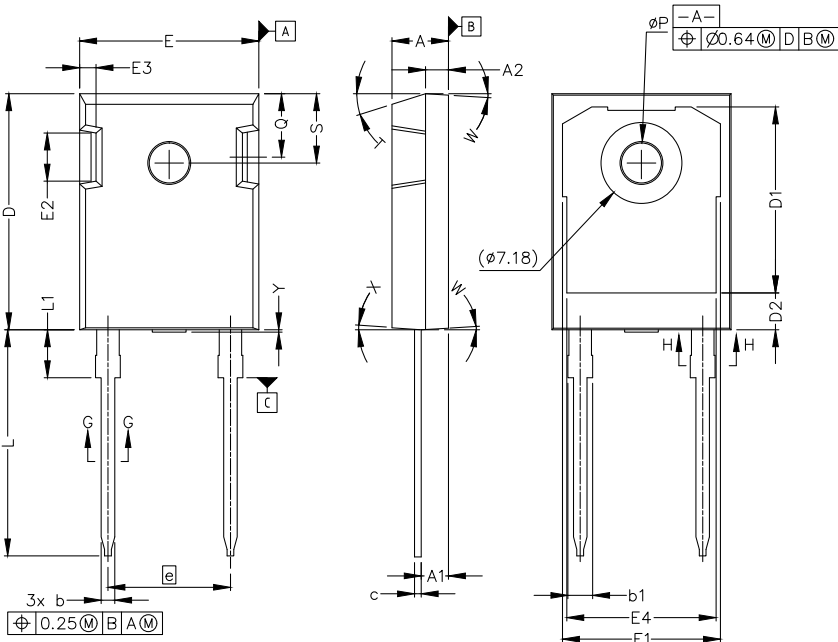


Figure 8. Transient Thermal Impedance

Package Dimensions: TO247-2L



POS	Inches		Millimeters	
	Min	Max	Min	Max
A	0.190	0.205	4.70	5.31
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
b	0.039	0.055	0.99	1.40
b1	0.065	0.095	1.65	2.41
c	0.015	0.035	0.38	0.89
D	0.819	0.845	20.80	21.46
D1	0.640	0.683	16.25	17.35
D2	0.112	0.124	2.86	3.16
E	0.620	0.640	15.49	16.26
E1	0.516	0.557	13.10	14.15
E2	0.135	0.201	3.43	5.10
E3	0.039	0.075	1.00	1.90
E4	0.487	0.529	12.38	13.43
e	0.428 BSC		10.88 BSC	
L	0.78	0.80	19.81	20.32
L1	-	0.177	-	4.50
ØP	0.138	0.144	3.51	3.66
Q	0.212	0.244	5.38	6.20
S	0.238	0.248	6.04	6.3
T	17.5° REF.			
W	3.5° REF.			
X	4° REF.			
Y	0	0.5	0	0.02



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