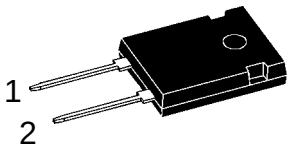


TO-247-2

Maximum Ratings (T_c = 25°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°C	Fig. 7
I_{FRM}	Repetitive Peak Forward Surge Current	140	A	T_C=25°C, t_P=10 ms, Half Sine Wave,	
I_{FSM}	Non-Repetitive Peak Forward Surge Current	170	A	T_C=25°C, t_P=10ms, Half Sine Wave	
$I_{F,Max}$	Non-Repetitive Peak Forward Surge Current	1360	A	T_C=25°C, t_P= 10 μs, Pulse	
P_{tot}	Power Dissipation	300 130	W	T_C=25°C T_C=110°C	Fig. 6
T_J , T_{stg}	Operating Junction and Storage Temperature	-55 to +175	°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°C I_F = 20 A T_J=175°C	Fig. 1
I_R	Reverse Current	2 40	20 200	μA	V_R = 650 V T_J=25°C V_R = 650 V T_J=175°C	Fig. 2
Q_C	Total Capacitive Charge	65		nC	V_R = 400 V, T_J = 25°C $Qc=\int_0^{V_R} C(V)dV$	Fig. 4
C	Total Capacitance	1340 120 109		pF	V_R = 0 V, T_J = 25°C, f = 1 MHz V_R = 200 V, T_J = 25°C, f = 1 MHz V_R = 400 V, T_J = 25°C, f = 1 MHz	Fig. 3
E_C	Capacitance Stored Energy	16		μJ	V_R = 400 V	Fig. 5

Thermal Characteristics

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

Typical Performance

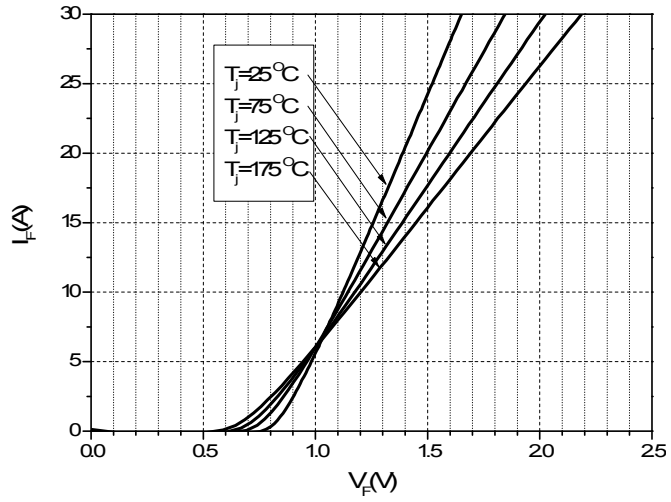


Figure 1.Forward Characteristics

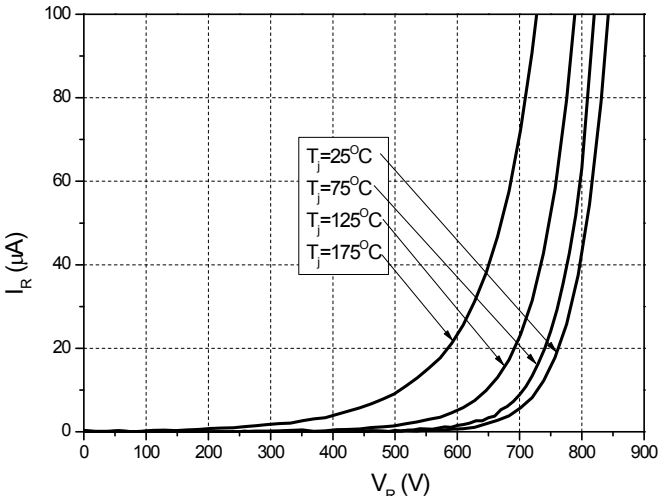


Figure 2. Reverse Characteristics

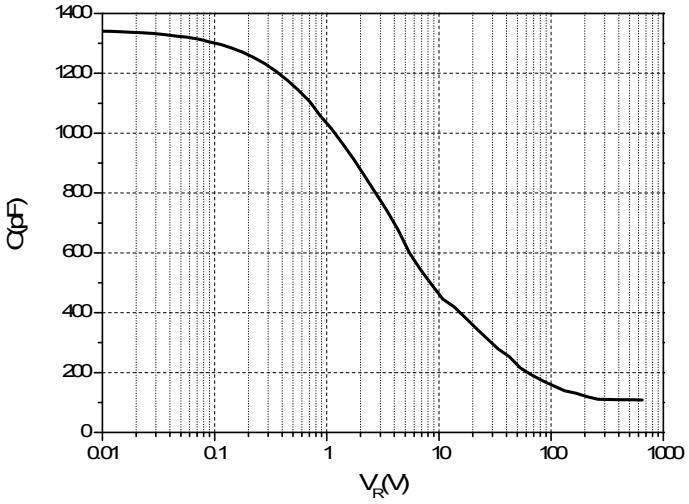


Figure 3.Capacitance vs. Reverse Voltage

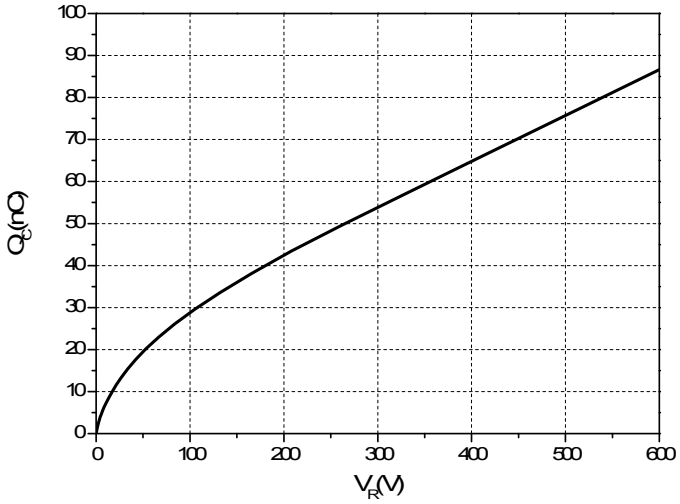


Figure 4. Total Capacitance Charge vs. Reverse Voltage

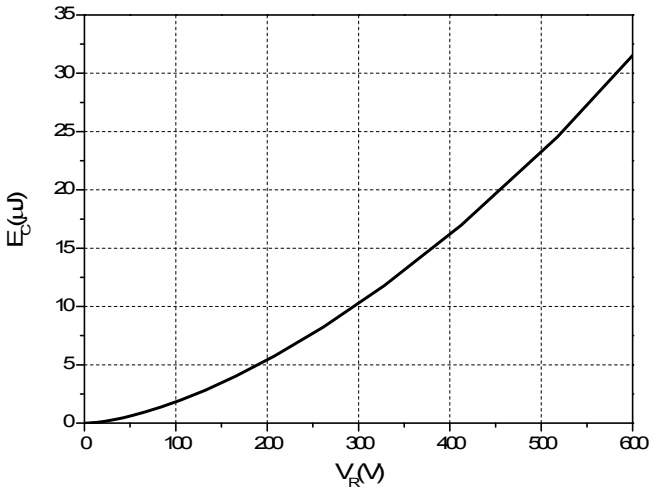


Figure 5. Capacitance Stored Energy

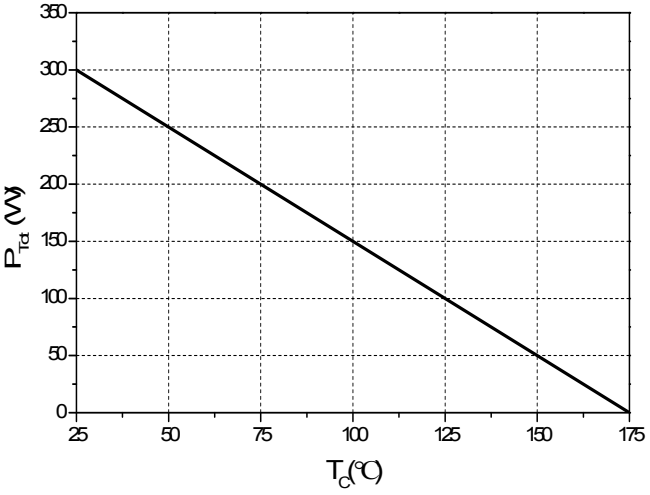


Figure 6. Power Derating

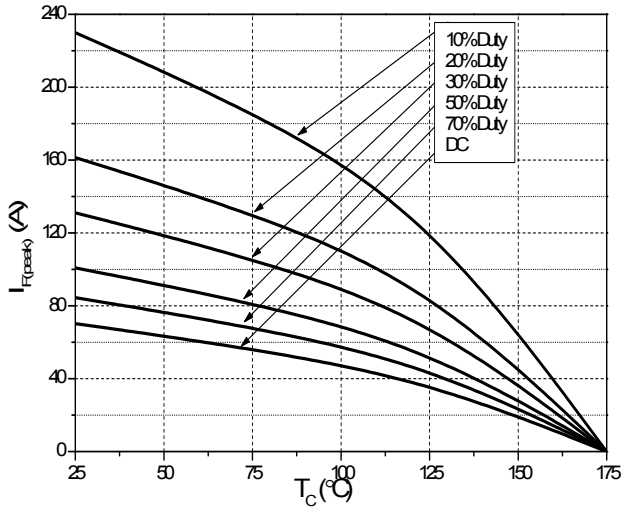


Figure 7. Current Derating

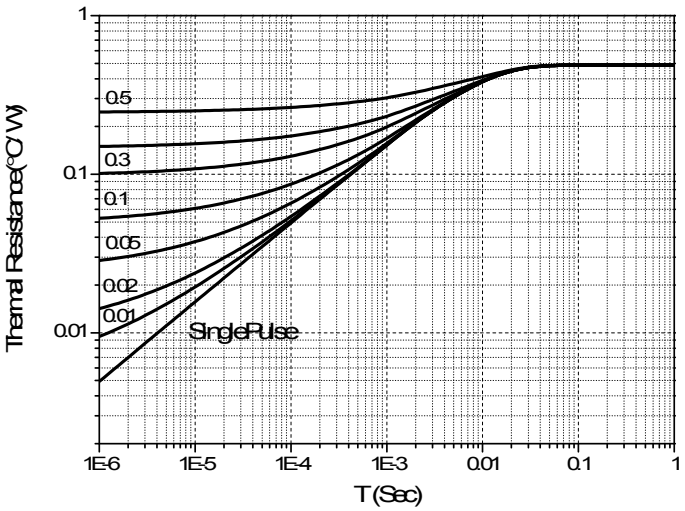
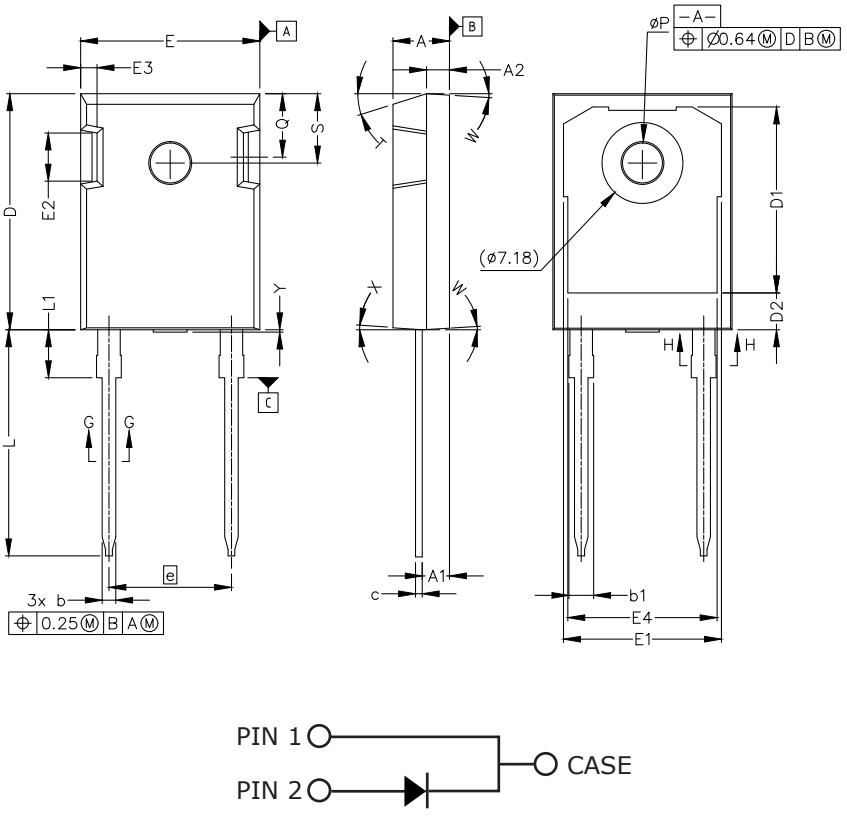


Figure 8. Transient Thermal Impendance

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