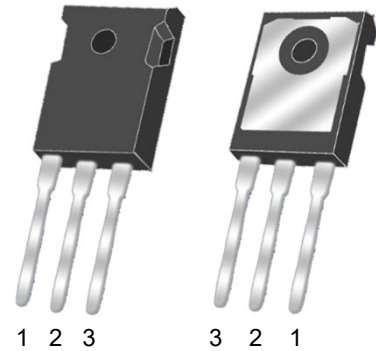
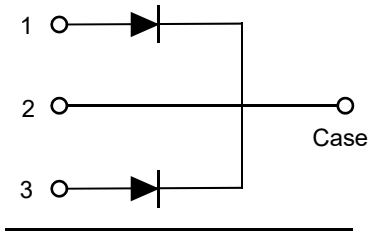


**Feature**

- Negligible reverse recovery
- Positive Temperature Coefficient
- Temperature-Independent Switching
- Fast switching
- Pb-free / RoHS compliant
- Low switching loss
- Higher frequency
- Low heat dissipation requirements
- Reduce size and cost of the system
- High-reliability


**TO-247-3L**
**Applications**

- Solar inverters
- Uninterruptable power supplies
- Motor drives
- Power Factor Correction


**Circuit Diagram**
**Absolute maximum rating@25°C**

Parameter		Symbol	Value	Units
Repetitive Peak Reverse Voltage		$V_{RRM}$	1200	V
Surge Peak Reverse Voltage		$V_{RSM}$	1200	V
DC Peak Reverse Voltage		$V_R$	1200	V
Continuous Forward Current	$T_c=25^\circ\text{C}$	$I_F$	59/118	A
	$T_c=135^\circ\text{C}$		30/60	
	$T_c=157^\circ\text{C}$		20/40	
Non-repetitive Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	$I_{FSM}$	160	A
	$T_c=110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		130	
Repetitive Peak Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	$I_{FRM}$	86	A
	$T_c=110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		58	
$i^2t$ Value	$T_c=25^\circ\text{C}, t_p=10\text{ms}$	$\int i^2 dt$	128	$\text{A}^2\text{s}$
	$T_c=110^\circ\text{C}, t_p=10\text{ms}$		84	
Power Dissipation	$T_c=25^\circ\text{C}$	$P_{tot}$	263/526	W
	$T_c=110^\circ\text{C}$		114/228	
Operating Junction Range		$T_J$	-55~+175	$^\circ\text{C}$
Storage Temperature Range		$T_{STG}$	-55~+150	$^\circ\text{C}$

## Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Forward Voltage	$V_F$	$I_F = 20A, T_J=25^\circ C$	-	1.4	1.7	V
		$I_F = 20A, T_J=175^\circ C$	-	2.0	-	
Reverse Current	$I_R$	$V_R = 1200V, T_J=25^\circ C$	-	-	50	$\mu A$
		$V_R = 1200V, T_J=175^\circ C$	-	-	200	
Total Capacitive Charge	$Q_C$	$V_R = 800V$	-	97	-	nC
Total Capacitance	C	$V_R = 0V, f = 1MHz$	-	1318	-	pF
		$V_R = 400V, f = 1MHz$	-	91	-	
		$V_R = 800V, f = 1MHz$	-	70	-	

## Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance ( Junction to case )	$R_{\theta JC}$	-	0.57/0.29	-	$^\circ C/W$

## Typical Characteristics

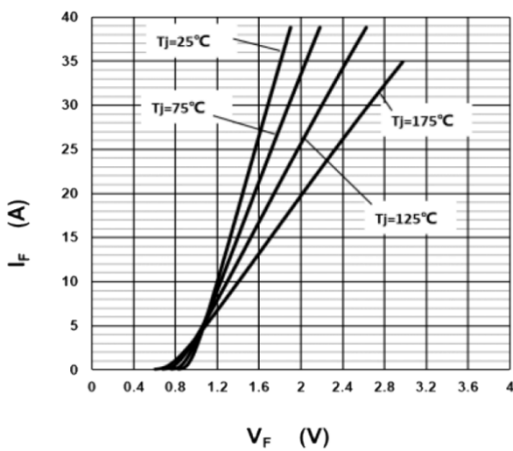


Fig.1 Forward Characteristics

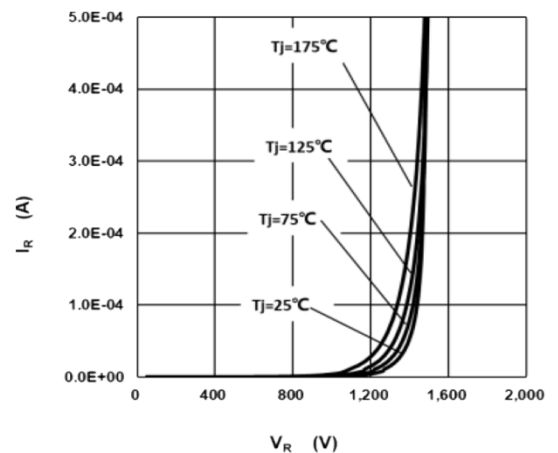


Fig.2 Reverse Characteristics

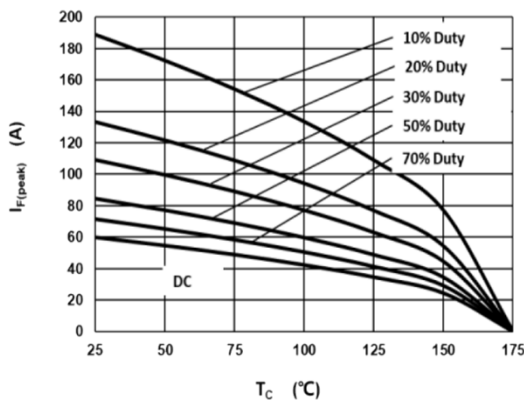


Fig.3 Current Derating

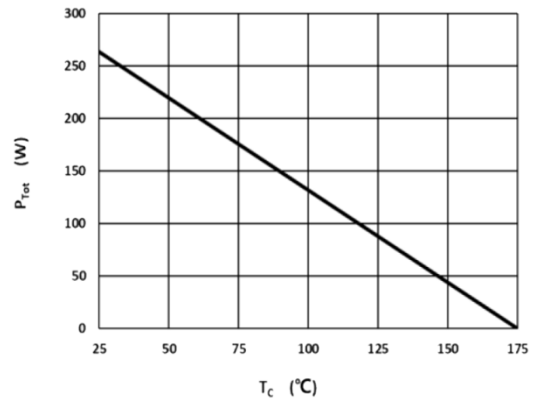


Fig.4 Power Derating

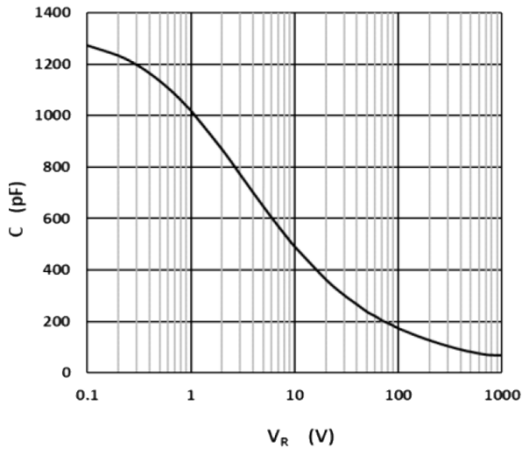


Fig.5 Capacitance vs. Reverse Voltage

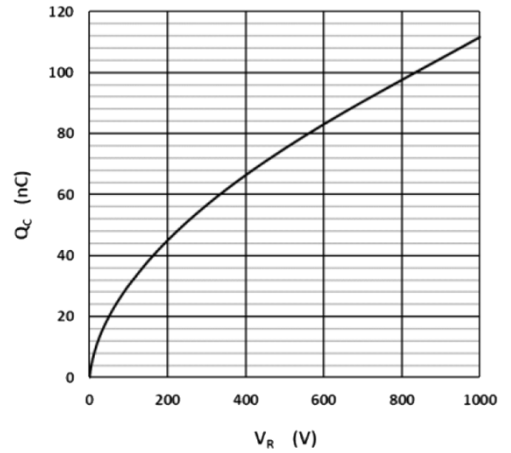


Fig.6 Capacitance Charge vs. Reverse Voltage

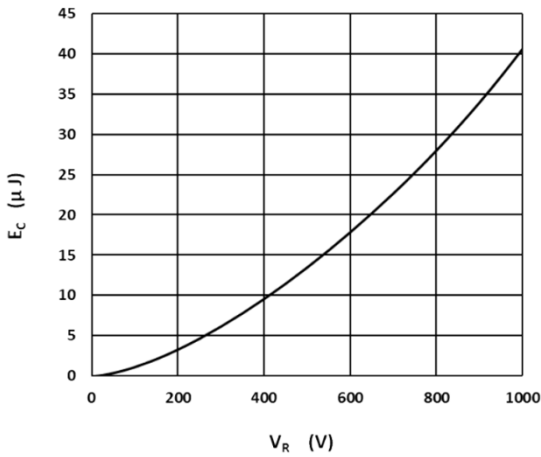


Fig.7 Capacitance Stored Energy

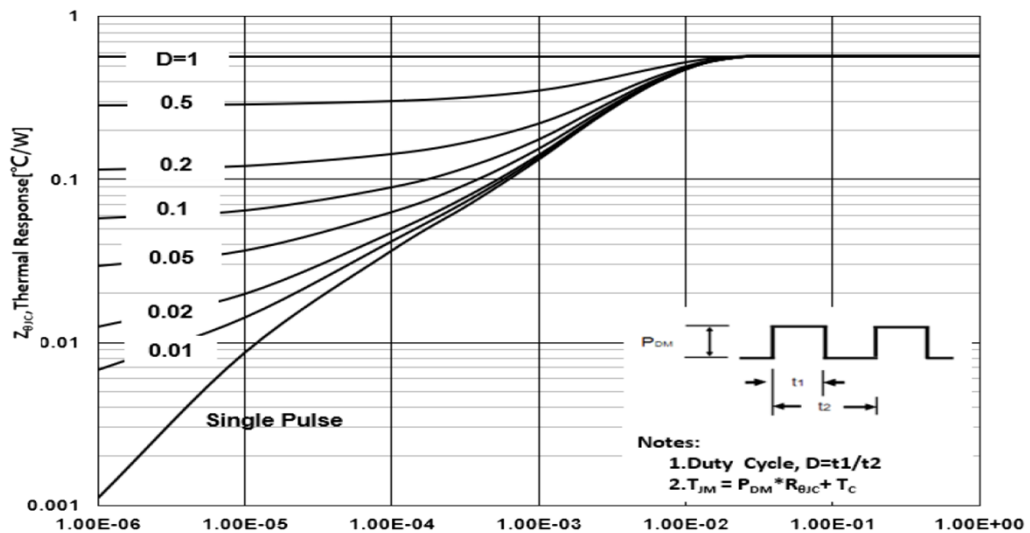
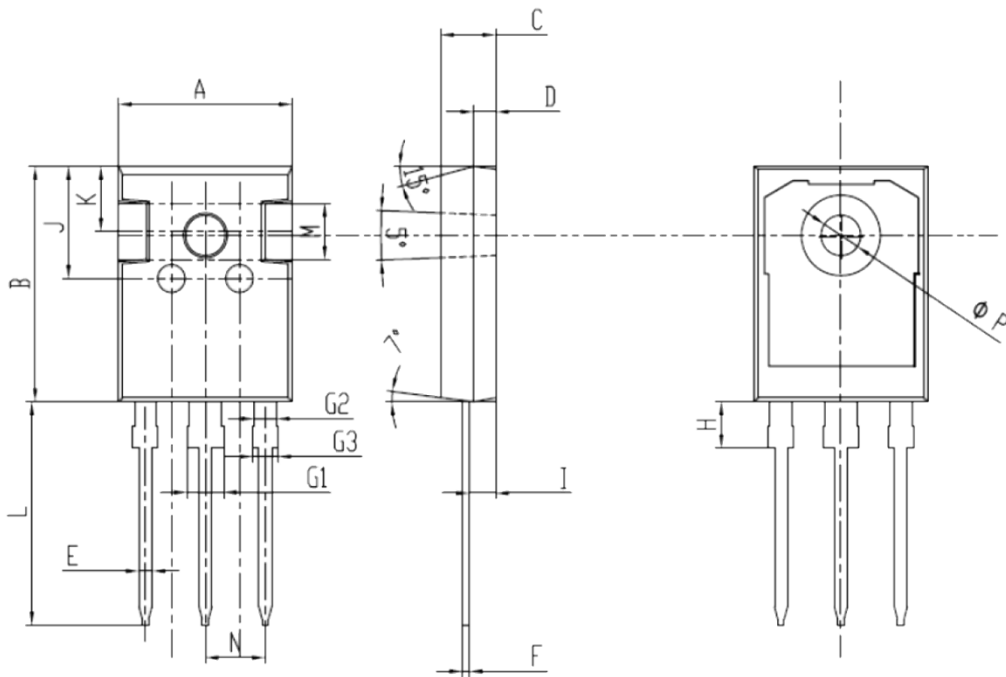



Fig.8 Transient Thermal Impedance

## Product dimension (TO-247-3L)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	15.70	15.90	0.618	0.626
B	20.90	21.10	0.823	0.831
C	4.90	5.10	0.193	0.201
D	1.90	2.10	0.075	0.083
E	1.10	1.30	0.043	0.051
F	0.45	0.75	0.018	0.030
G1	3.00	3.20	0.118	0.126
G2	1.85	2.15	0.073	0.085
G3	2.00	2.20	0.079	0.087
H	4.00	4.30	0.157	0.169
I	2.30	2.50	0.091	0.098
J	9.90	10.10	0.390	0.398
K	5.70	5.90	0.224	0.232
L	19.80	20.20	0.780	0.795
M	4.85	5.15	0.191	0.203
N	5.286	5.586	0.208	0.220
φP	3.40	3.60	0.134	0.142


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