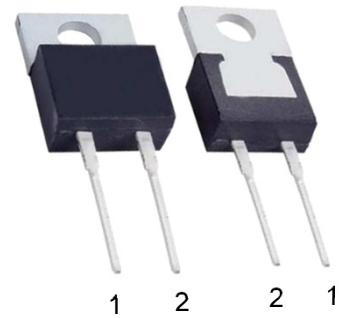
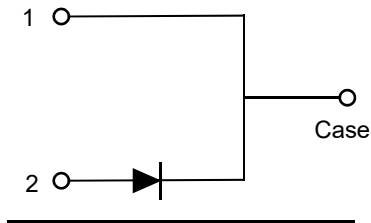


**Feature**

- 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-220-2L**
**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		$V_{RRM}$	650	V
Surge Peak Reverse Voltage		$V_{RSM}$	650	V
DC Peak Reverse Voltage		$V_R$	650	V
Continuous Forward Current	$T_c=25^\circ\text{C}$	$I_F$	30	A
	$T_c=135^\circ\text{C}$		15	
	$T_c=160^\circ\text{C}$		8.0	
Non-repetitive Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	$I_{FSM}$	64	A
	$T_c=110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		53	
Repetitive Peak Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	$I_{FRM}$	38	A
	$T_c=110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		25	
$i^2t$ Value	$T_c=25^\circ\text{C}, t_p=10\text{ms}$	$\int i^2 dt$	20.5	$\text{A}^2\text{s}$
	$T_c=110^\circ\text{C}, t_p=10\text{ms}$		14	
Power Dissipation	$T_c=25^\circ\text{C}$	$P_{tot}$	93	W
	$T_c=110^\circ\text{C}$		40	
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	$V_F$	$I_F = 10A, T_J=25^\circ C$	-	1.3	1.5	V
		$I_F = 10A, T_J=175^\circ C$	-	1.5	-	
Reverse Current	$I_R$	$V_R = 650V, T_J=25^\circ C$	-	-	50	$\mu A$
		$V_R = 650V, T_J=175^\circ C$	-	-	200	
Total Capacitive Charge	$Q_C$	$V_R = 400V$	-	23	-	nC
Total Capacitance	C	$V_R = 0V, f = 1MHz$	-	466	-	pF
		$V_R = 200V, f = 1MHz$	-	47	-	
		$V_R = 400V, f = 1MHz$	-	38	-	

## Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance ( Junction to case )	$R_{\theta JC}$	-	1.60	-	$^\circ C/W$

## Typical Characteristics

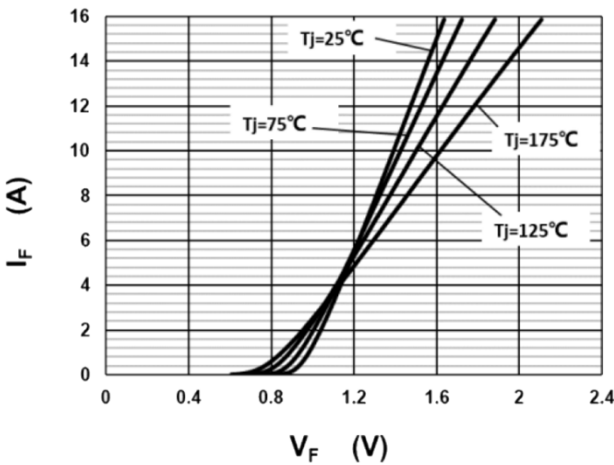


Fig.1 Forward Characteristics

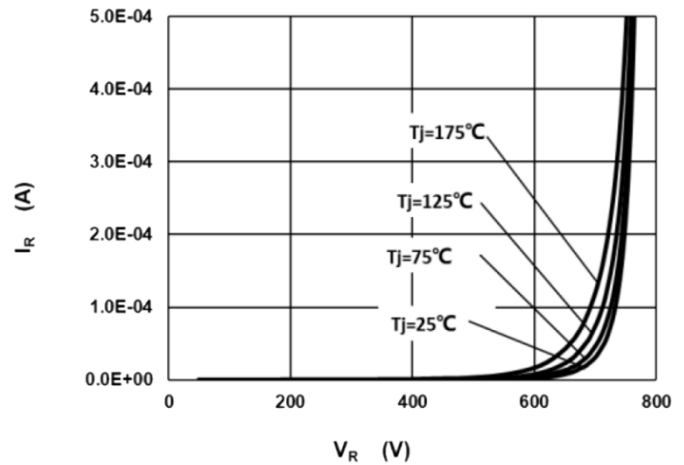


Fig.2 Reverse Characteristics

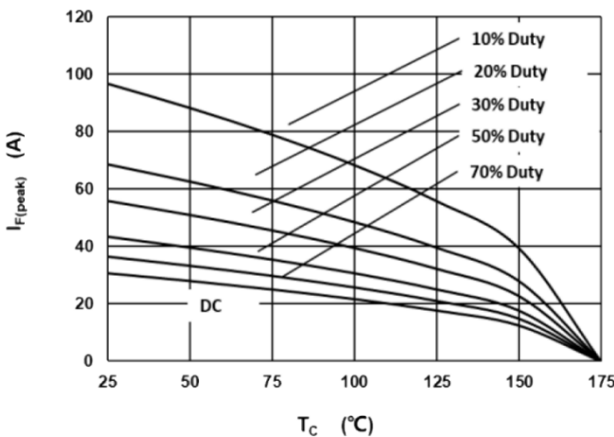


Fig.3 Current Derating

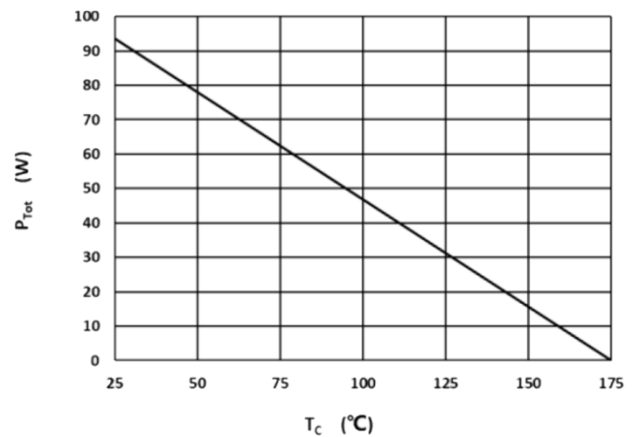
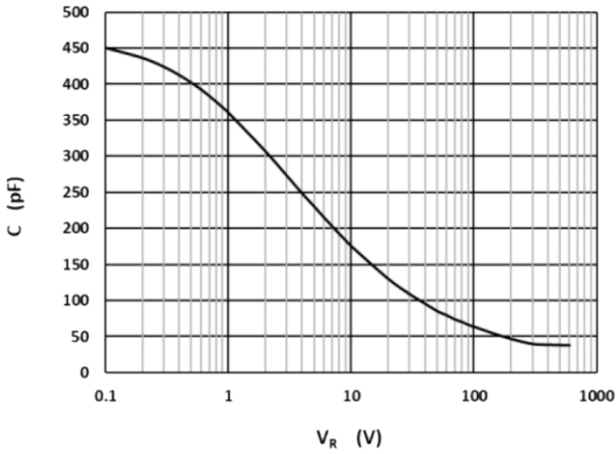
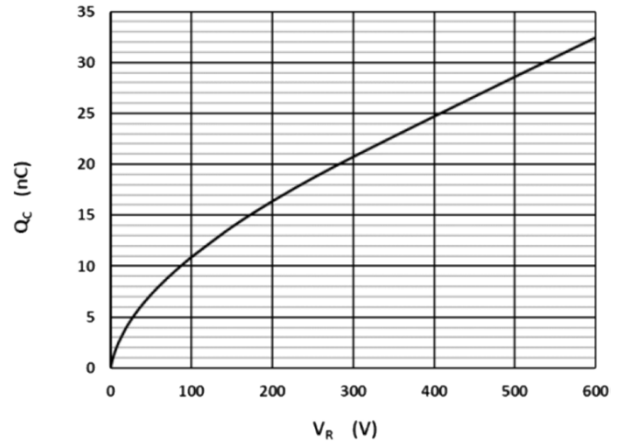


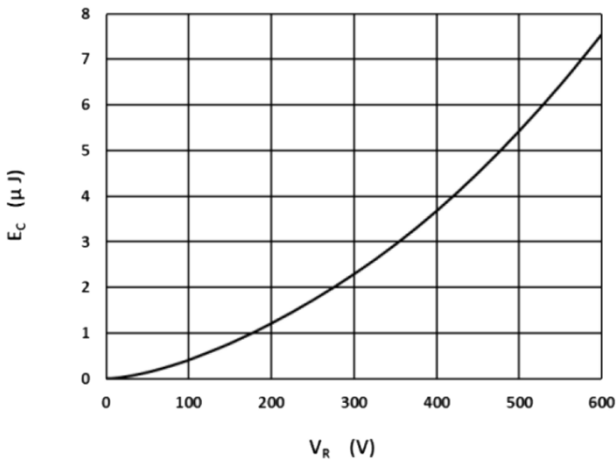
Fig.4 Power Derating



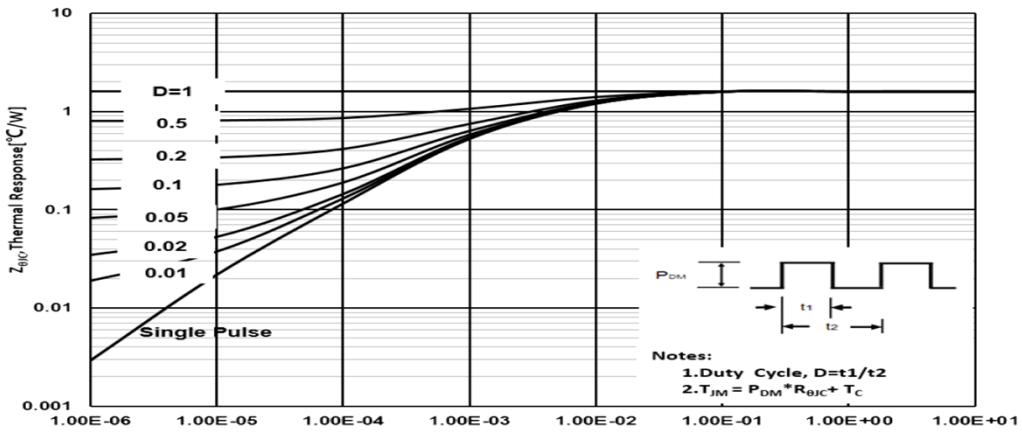
**Fig.5 Capacitance vs. Reverse Voltage**



**Fig.6 Capacitance Charge vs. Reverse Voltage**

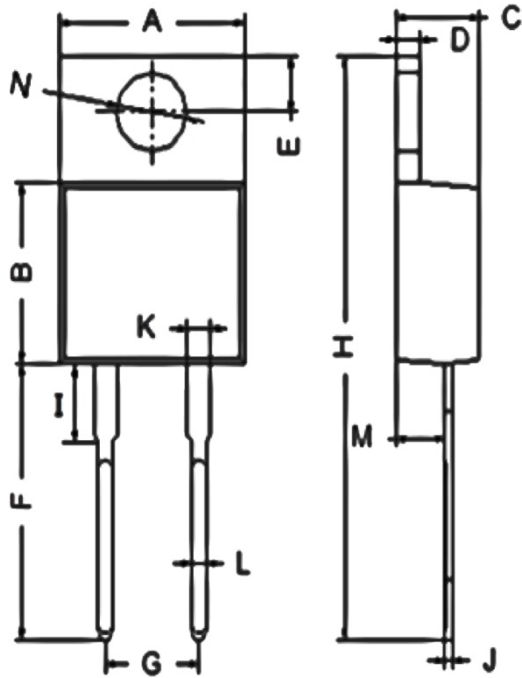


**Fig.7 Capacitance Stored Energy**




**Fig.8 Transient Thermal Impedance**

## Product dimension (TO-220-2L)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	9.80	10.30	0.386	0.406
B	8.60	9.20	0.339	0.362
C	4.37	4.77	0.172	0.188
D	1.07	1.47	0.042	0.058
E	2.64	2.84	0.104	0.112
F	13.14	14.20	0.517	0.559
G	4.98	5.18	0.196	0.204
H	28.03	29.06	1.104	1.144
I	3.50	4.00	0.138	0.157
J	0.28	0.48	0.011	0.019
K	1.22	1.32	0.048	0.052
L	0.71	0.91	0.028	0.036
M	2.40	2.90	0.094	0.114
N	3.76	3.96	0.148	0.156


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