

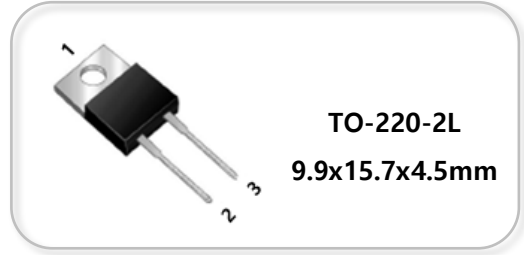


General description

Symbol	Value
$V_R @ T_C=25^{\circ}\text{C}$	Min 650V
$I_F @ T_C=147^{\circ}\text{C}$	10A
Q_C	Typ 39nC

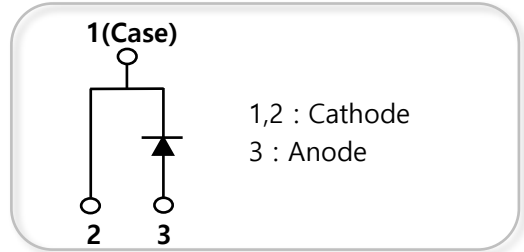


Package



Features

- 175°C Maximum operating temperature
- Negligible reverse recovery current.
- Fast switching speed



Applications

- General purpose
- Switching mode power supply
- Boot diodes in PFC at DC/DC
- Industrial motor drives
- Motor drivers
- Solar inverters



Maximum ratings ($T_C = 25^{\circ}\text{C}$)

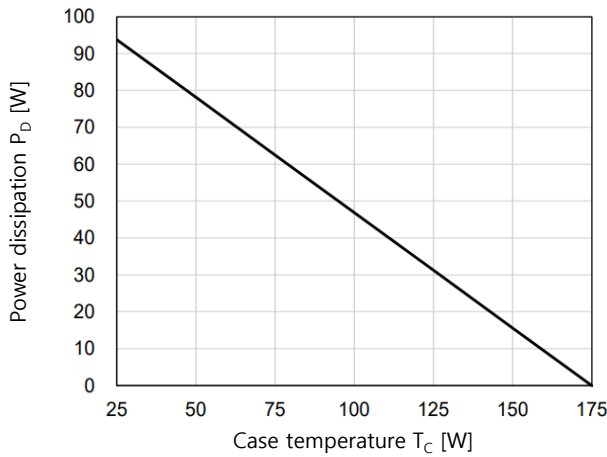
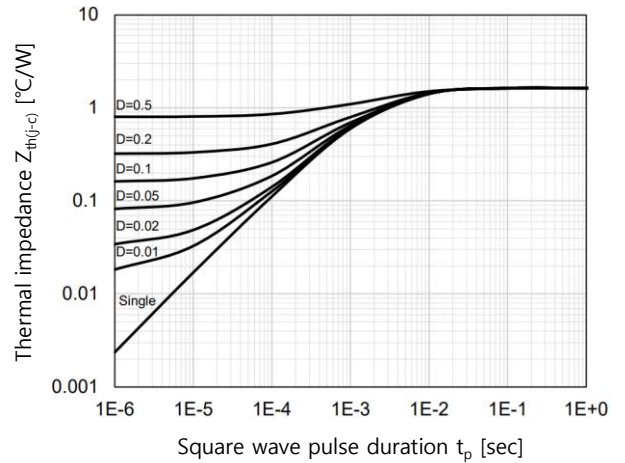
Parameter	Symbol	Test condition	Value	Units
Repetitive peak reverse voltage	V_{RRM}	-	650	V
DC peak reverse voltage	V_R	-	650	V
Continuous forward current	I_F	$T_C=147^{\circ}\text{C}$	10	A
Non-repetitive forward surge current	I_{FSM}	$T_C=25^{\circ}\text{C}, t_p=10\text{ms}$	55	A
Power dissipation	P_D	$T_C=25^{\circ}\text{C}$	94	W
Operating and storage temperature range	T_J, T_{stg}	-	-55 to 175	$^{\circ}\text{C}$


Electrical characteristics ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Test condition	Value			Units
			Min	Typ	Max	
Forward voltage	V_F	$I_F=10\text{A}, T_C=25^\circ\text{C}$	-	1.30	1.60	V
		$I_F=10\text{A}, T_C=175^\circ\text{C}$	-	1.45	-	V
Reverse current	I_R	$V_R=650\text{V}, T_C=25^\circ\text{C}$	-	-	100	μA
		$V_R=650\text{V}, T_C=175^\circ\text{C}$	-	-	300	μA
Total capacitive charge	Q_C	$V_R=400\text{V}$	-	39	-	nC
Total capacitance	C	$V_R=1\text{V}, f=100\text{kHz}$	-	623	-	pF
		$V_R=400\text{V}, f=100\text{kHz}$	-	60	-	pF

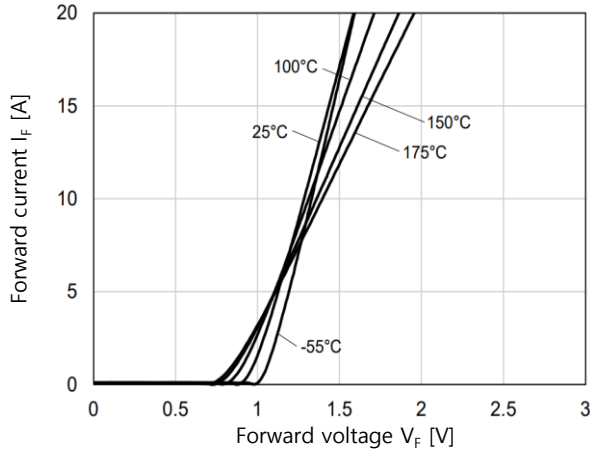

Thermal characteristics($T_C = 25^\circ\text{C}$)

Symbol	Parameter	Typ	Max	Units
$R_{th(j-c)}$	Junction to case	-	1.6	$^\circ\text{C}/\text{W}$

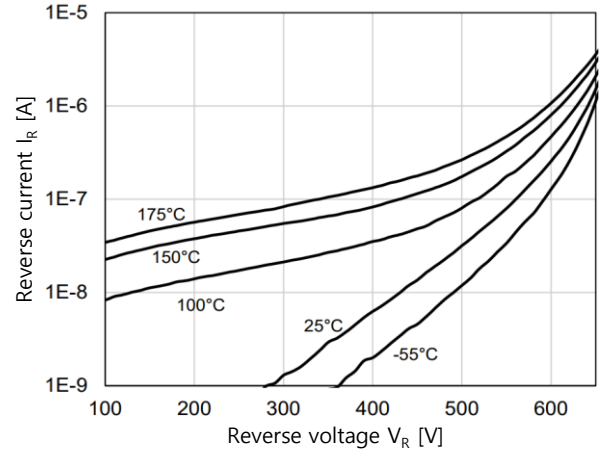
 $T_C - P_D$ Characteristics

 $t_p - Z_{th(j-c)}$ Characteristics


 Typical electrical characteristics curves ($T_C = 25^\circ\text{C}$)

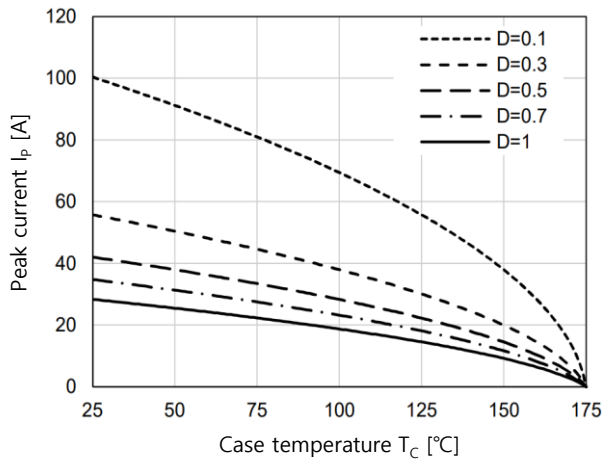
$V_F - I_F$ Characteristics



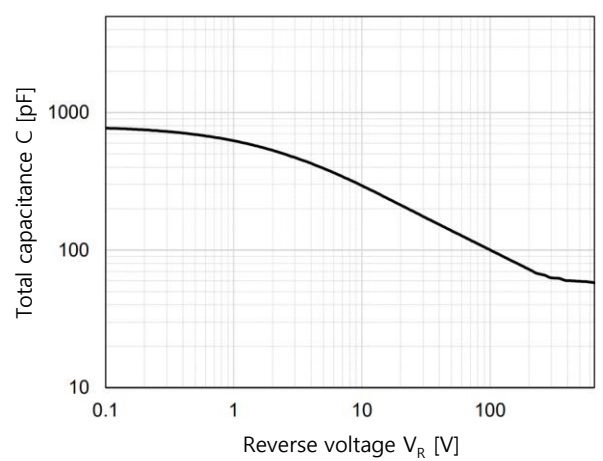
$V_R - I_R$ Characteristics



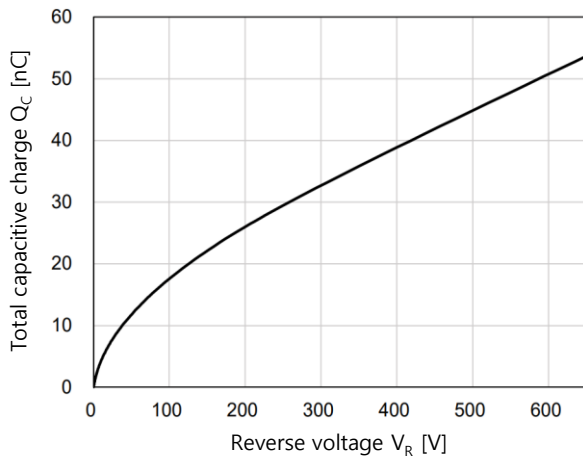
$T_C - I_P$ Characteristics



$V_R - C$ Characteristics

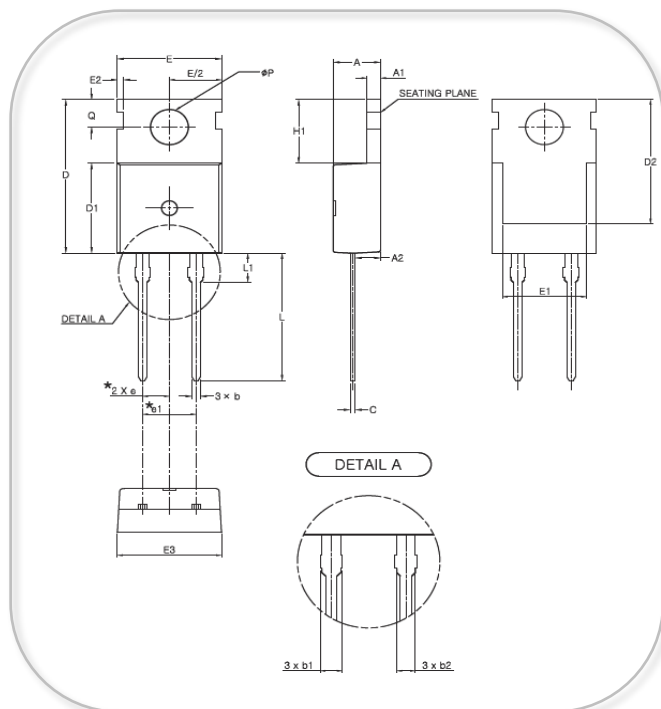


$V_R - Q_C$ Characteristics





Package dimensions(TO-220-2L)



[Unit : mm]

Symbol	Min	Typ	Max
A	4.30	4.50	4.70
A1	1.25	1.30	1.40
A2	2.20	2.40	2.60
b	0.70	0.80	0.90
b1	1.42	1.52	1.62
b2	1.17	1.27	1.37
c	0.45	0.50	0.60
D	15.50	15.70	15.90
D1	9.00	9.20	9.40
D2	(12.70)		
E	9.70	9.90	10.10
E1	(8.00)		
E2	(0.60)		
E3	9.70	9.90	10.10
e	2.54 BSC		
e1	5.08 BSC		
H1	6.30	6.50	6.70
L	12.88	13.08	13.28
L1	(3.00)		
ΦP	3.50	3.60	3.70
Q	2.70	2.80	2.90



Marking information

