

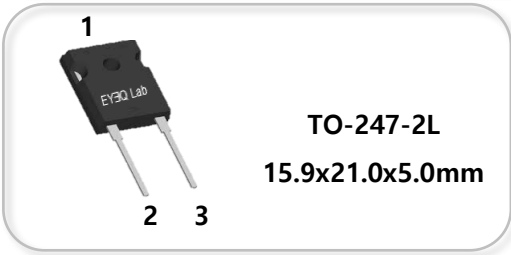


General description

Symbol	Value
V_R	Min 650V
I_F	20A
Q_C	Typ 77nC

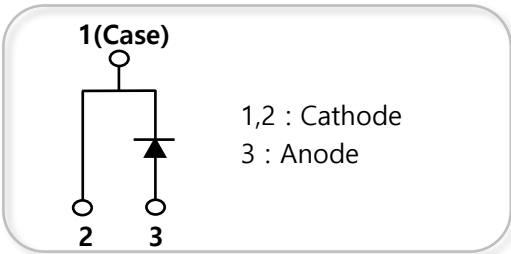


Package



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	$T_C=138^\circ\text{C}$	20	A
Non-repetitive forward surge current	I_{FSM}	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$	97	A
Power dissipation	P_D	$T_C=25^\circ\text{C}$	150	W
Operating and storage temperature range	T_J, T_{stg}	-	-55 to 175	$^\circ\text{C}$

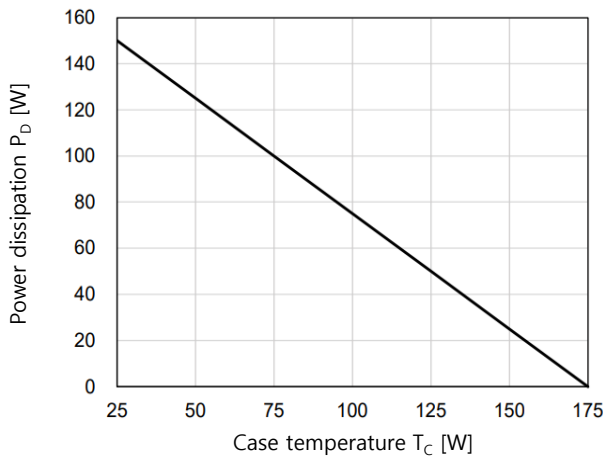
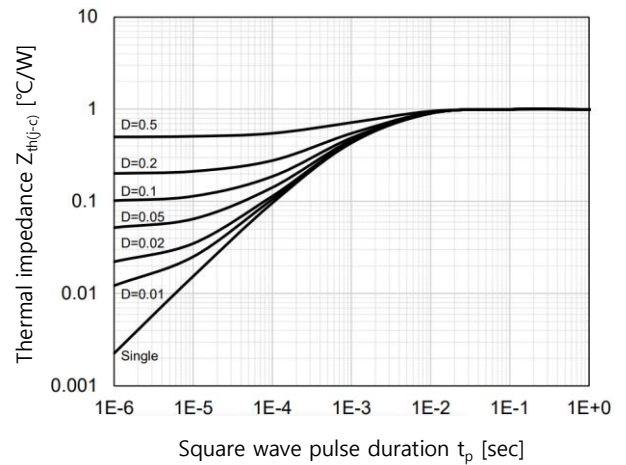



Electrical characteristics ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Test condition	Value			Units
			Min	Typ	Max	
Forward voltage	V_F	$I_F=20\text{A}, T_C=25^\circ\text{C}$	-	1.30	1.60	V
		$I_F=20\text{A}, T_C=175^\circ\text{C}$	-	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	$V_R=400\text{V}$	-	77	-	nC
Total capacitance	C	$V_R=1\text{V}, f=100\text{kHz}$	-	1,208	-	pF
		$V_R=400\text{V}, f=100\text{kHz}$	-	113	-	pF

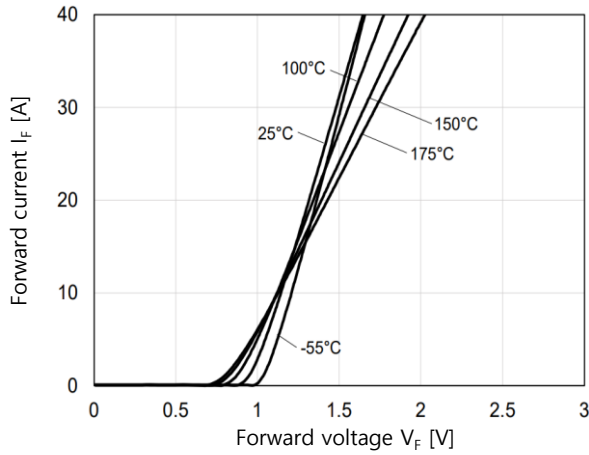

Thermal characteristics($T_C = 25^\circ\text{C}$)

Symbol	Parameter	Typ	Max	Units
$R_{th(j-c)}$	Junction to case	-	1.0	$^\circ\text{C}/\text{W}$

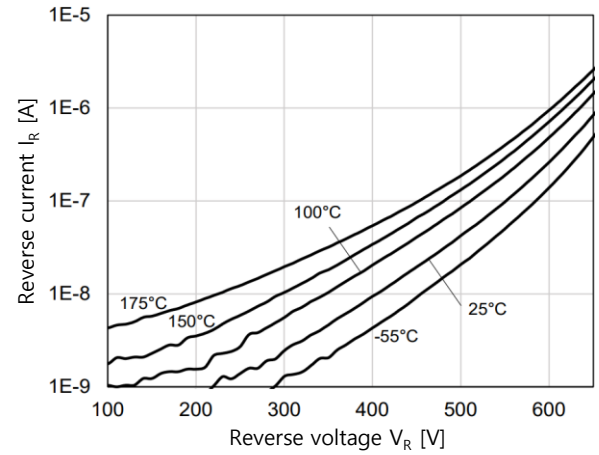
 $T_C - P_D$ Characteristics

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


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

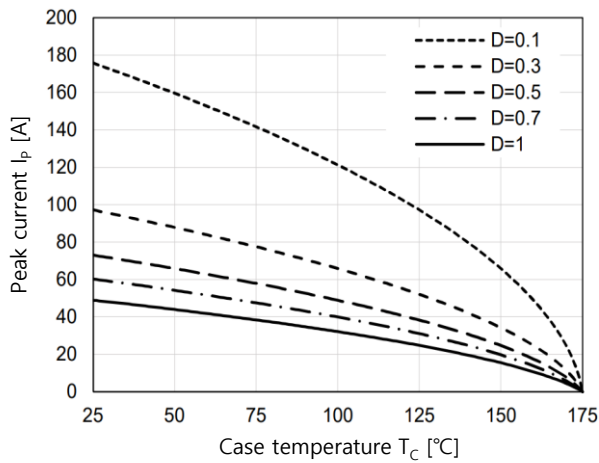
$V_F - I_F$ Characteristics



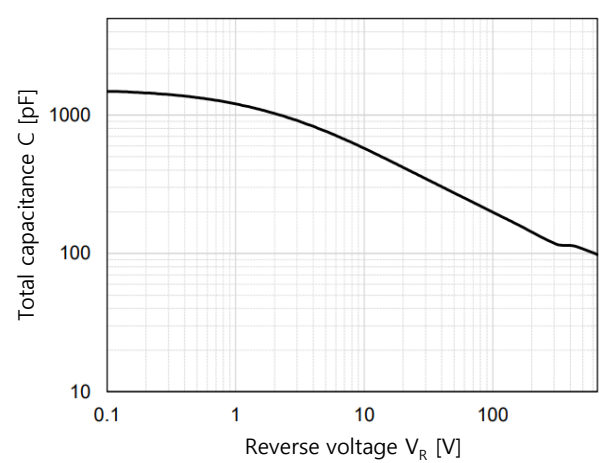
$V_R - I_R$ Characteristics



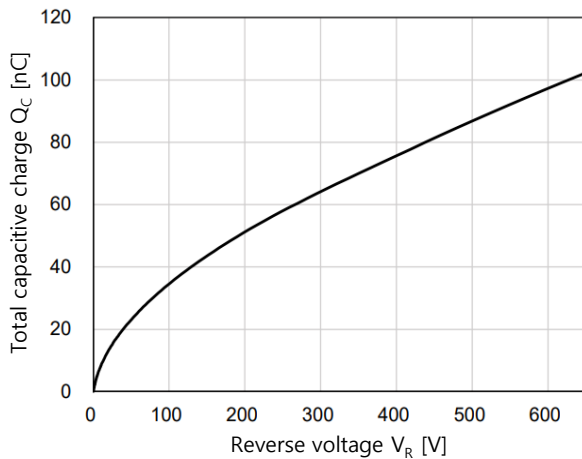
$T_C - I_P$ Characteristics



$V_R - C$ Characteristics



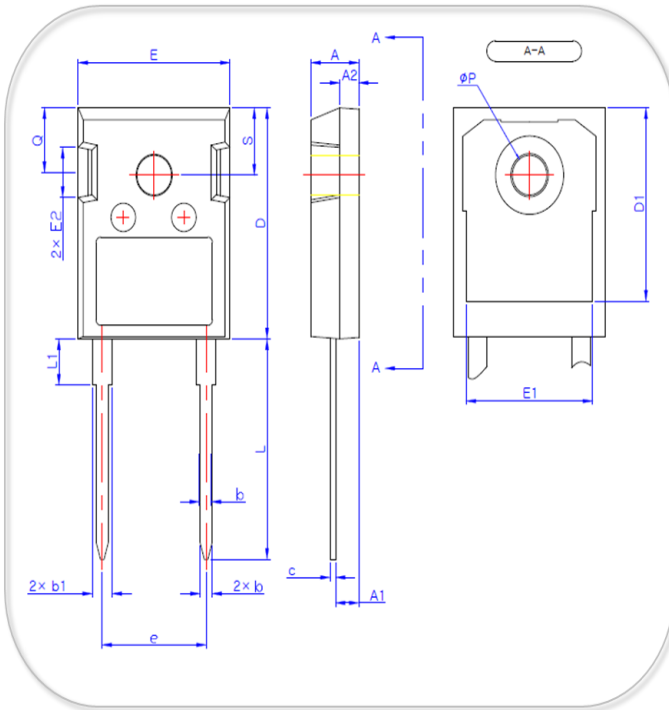
$V_R - Q_C$ Characteristics





Package dimensions(TO-247-2L)

[Unit : mm]



Symbol	Min	Typ	Max
A	4.80	5.00	5.20
A1	2.29	2.36	2.54
A2	1.90	2.00	2.10
b	1.10	1.20	1.30
b1	1.91	2.11	2.20
c	0.50	0.60	0.70
D	20.80	21.07	21.34
D1	17.43	17.63	17.83
E	15.75	15.94	16.13
E1	13.06	13.26	13.46
E2	4.32	4.58	4.83
e	5.45 BSC		
L	19.85	20.00	20.25
L1	-	-	4.49
ΦP	3.55	3.60	3.65
Q	5.59	5.89	6.19
S	6.15 BSC		



Marking information

