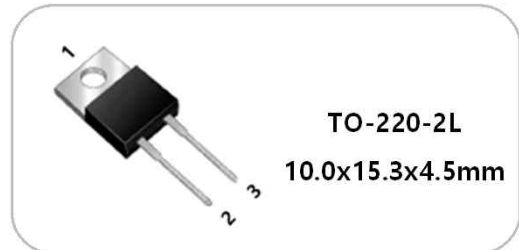


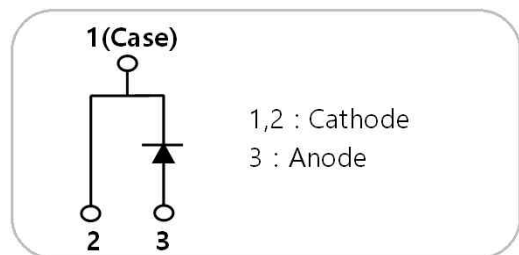

**General description**

Symbol	Value
$V_{BR}$ @ $T_C=25^\circ\text{C}$	Min 650V
$I_F$ @ $T_C=150^\circ\text{C}$	10A
$Q_C$	Typ 30nC


**Package**


**Features**

- Low forward voltage
- 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	Unit
Repetitive peak reverse voltage	$V_{RRM}$	-	650	V
DC peak reverse voltage	$V_R$	-	650	V
Continuous forward current	$I_F$	$T_C=150^\circ\text{C}$	10	A
Non-repetitive forward surge current	$I_{FSM}$	$t_p=10$ ms, Half sine pulse	75	A
Power dissipation	$P_{tot}$	$T_C=25^\circ\text{C}$	125	W
Operating and storage temperature range	$T_{j}, T_{stg}$	-	-55 to 175	$^\circ\text{C}$

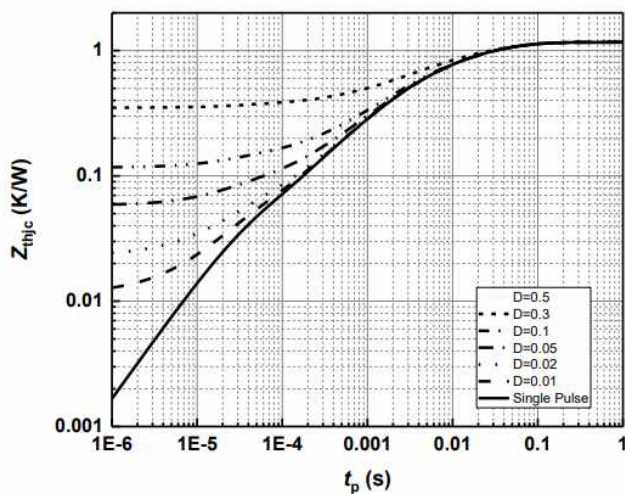
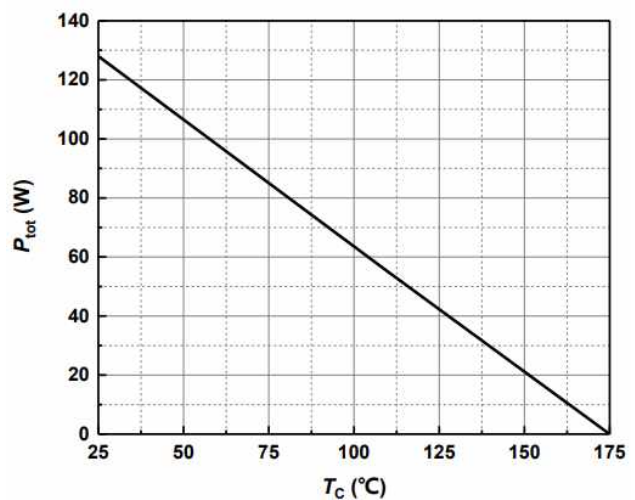



**Electrical characteristics ( $T_C = 25^\circ\text{C}$ )**

Parameter	Symbol	Test condition	Value			Unit
			Min	Typ	Max	
Forward voltage	$V_F$	$I_F=10\text{A}, T_C=25^\circ\text{C}$	-	1.43	-	V
		$I_F=10\text{A}, T_C=175^\circ\text{C}$	-	1.75	-	V
Reverse current	$I_R$	$V_R=650\text{V}, T_C=25^\circ\text{C}$	-	1	200	$\mu\text{A}$
		$V_R=650\text{V}, T_C=175^\circ\text{C}$	-	10	-	$\mu\text{A}$
Total capacitive charge	$Q_C$	$V_R=400\text{V}, Q_C = \int C(V)dV$	-	30	-	nC
Total capacitance	C	$V_R=1\text{V}, f=1\text{MHz}$	-	460	-	pF
		$V_R=600\text{V}, f=1\text{MHz}$	-	50	-	pF

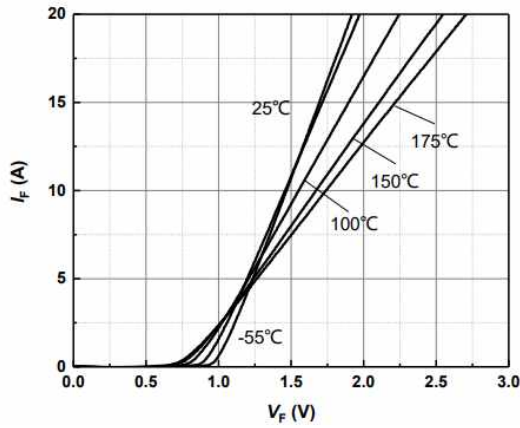

**Thermal characteristics( $T_C = 25^\circ\text{C}$ )**

Symbol	Parameter	Max	Unit
$R_{th(j-c)}$	Junction to case	1.2	$^\circ\text{C}/\text{W}$

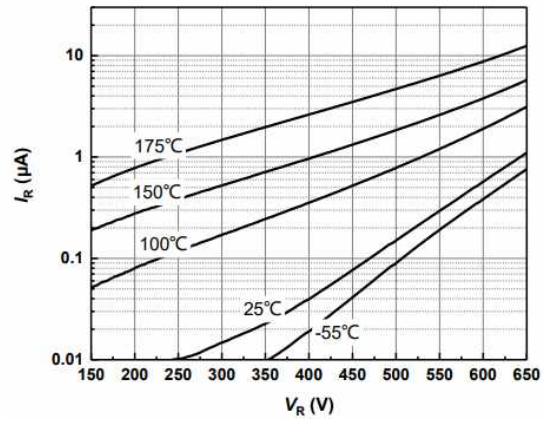
 $t_p - Z_{thjc}$  Characteristics

 $T_C - P_{tot}$  Characteristics


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

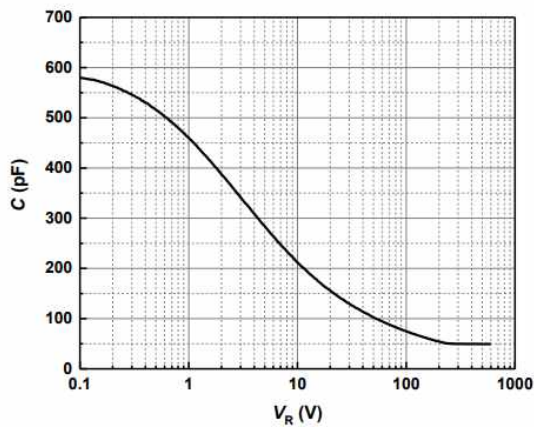
$V_F - I_F$  Characteristics



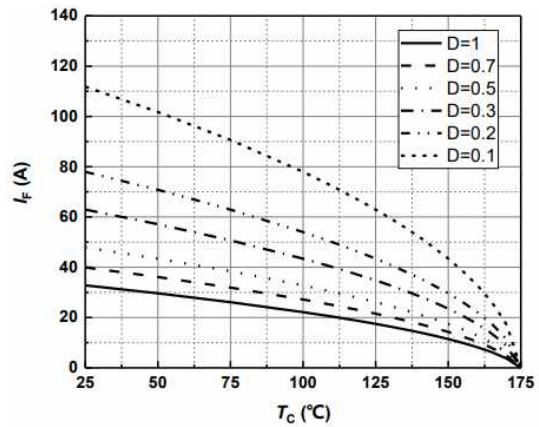
$V_R - I_R$  Characteristics



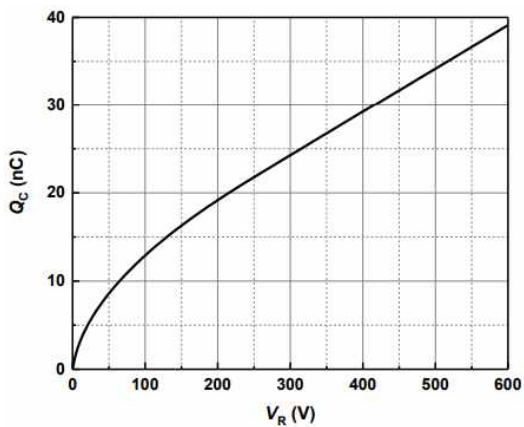
$V_R - C_T$  Characteristics



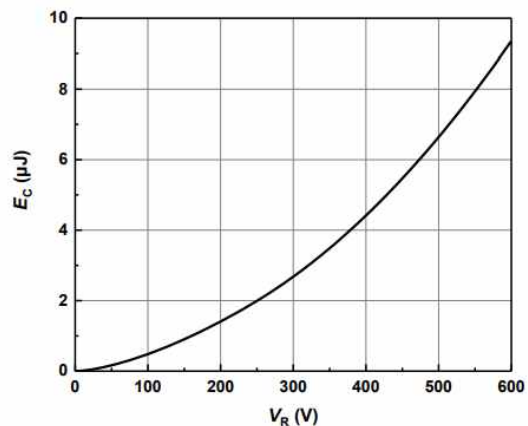
$V_R - I_R$  Characteristics



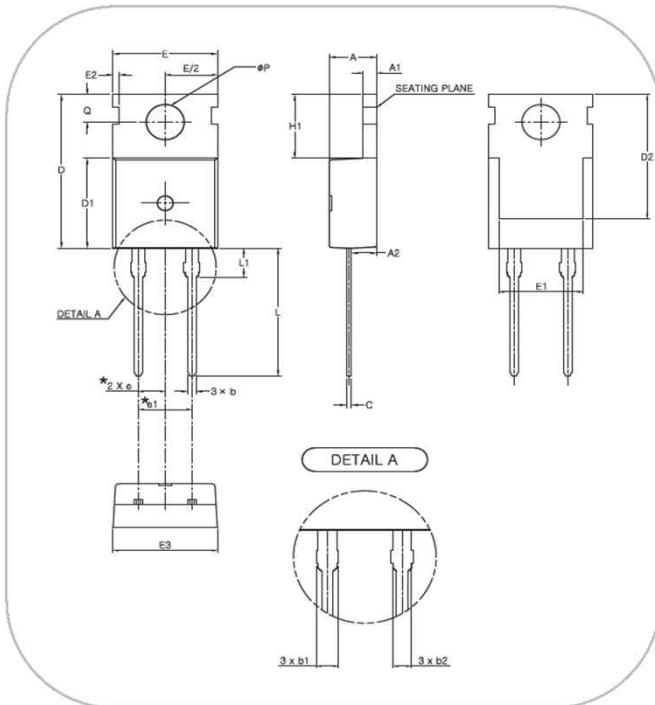
$V_R - Q_C$  Characteristics



$V_R - E_C$  Characteristics



**Package dimensions(TO-220-2L)**



Symbol	Min	Nom	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)		
ØP	3.50	3.60	3.70
Q	2.70	2.80	2.90

**Marking information**

