

General description

Symbol	Value
$V_R @ T_C=25^{\circ}\text{C}$	Min 1200V
$I_F @ T_C=150^{\circ}\text{C}$	30A
Q_C	Typ 99nC

Features

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

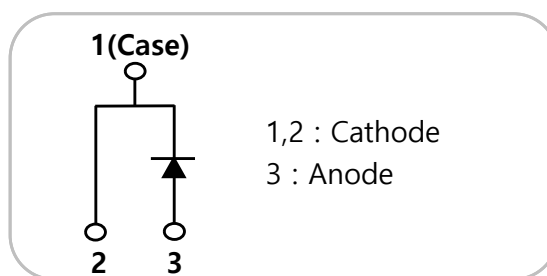
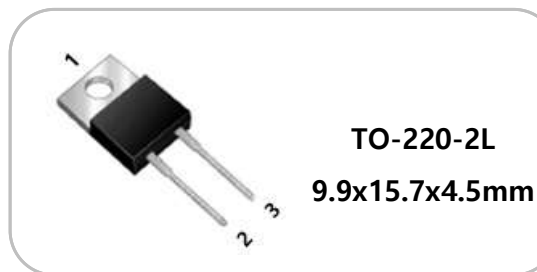
Applications

- 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	Units
Repetitive Peak Reverse Voltage	V_{RRM}	-	1200	V
DC Peak Reverse Voltage	V_R	-	1200	V
Continuous Forward Current	I_F	$T_C=150^{\circ}\text{C}$	30	A
Non-Repetitive Forward Surge Current	I_{FSM}	$t_p=10\text{ ms}$, Half Sine Pulse	150	A
Power Dissipation	P_{tot}	$T_C=25^{\circ}\text{C}$	440	W
Operating and Storage Temperature Range	T_{j}, T_{stg}	-	-55 to 175	$^{\circ}\text{C}$

Package

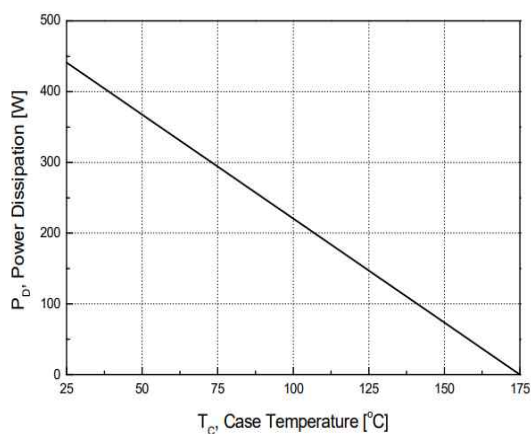
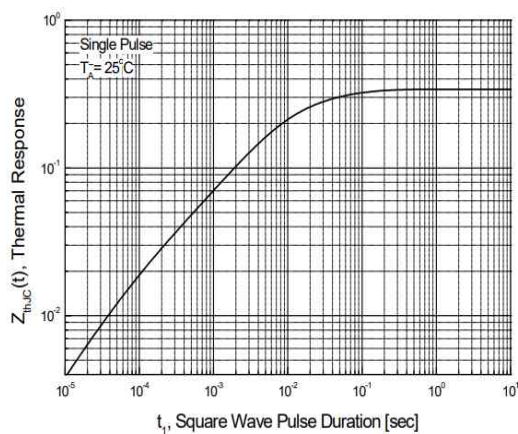


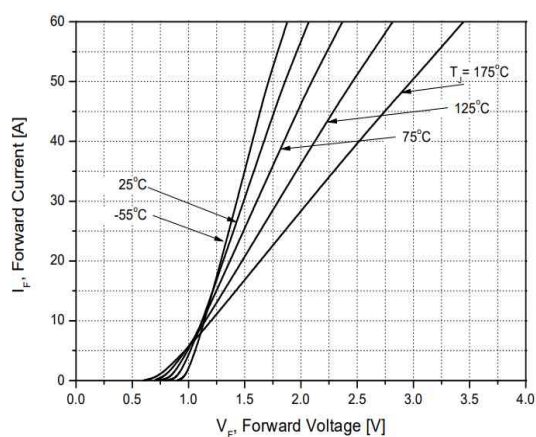
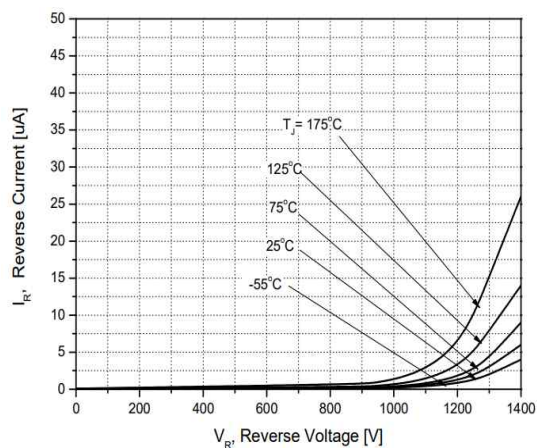
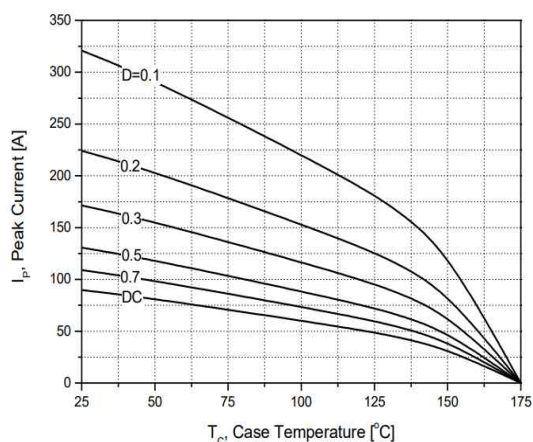
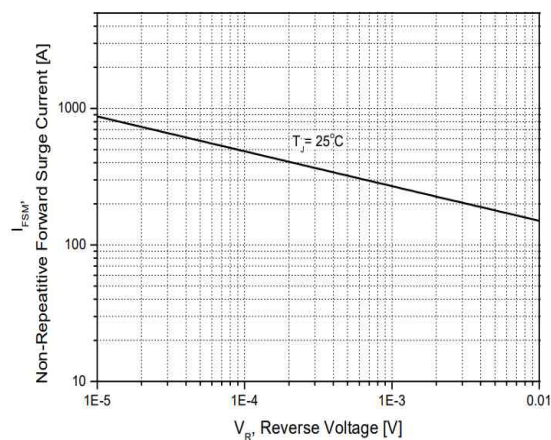
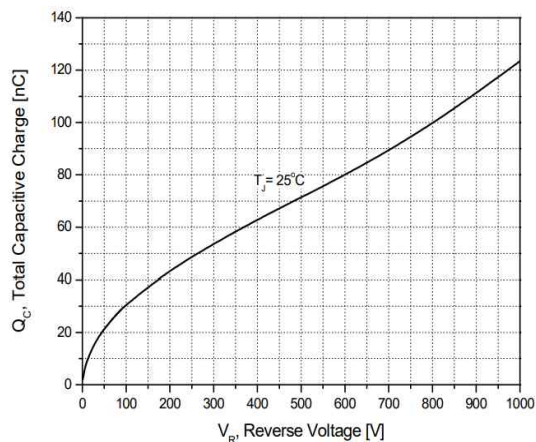
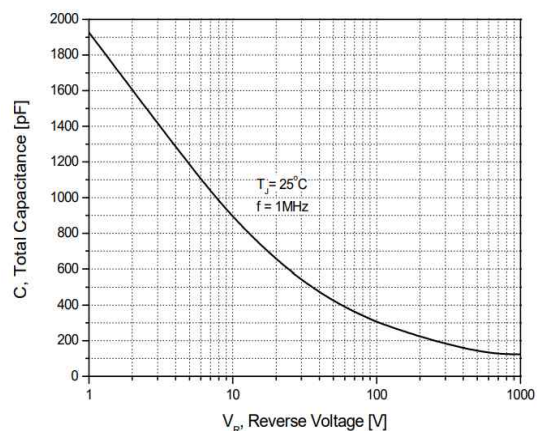

Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Test Condition	Value			Units
			Min	Typ	Max	
Forward Voltage	V_F	$I_F=30\text{A}, T_C=25^\circ\text{C}$	-	1.5	1.8	V
		$I_F=30\text{A}, T_C=175^\circ\text{C}$	-	2.0	2.4	V
Reverse Current	I_R	$V_R=650\text{V}, T_C=25^\circ\text{C}$	-	40	90	μA
		$V_R=650\text{V}, T_C=175^\circ\text{C}$	-	80	900	μA
Total capacitive charge	Q_C	$V_R=800\text{V}$	-	99	-	nC
Total Capacitance	C	$V_R=1\text{V}, f=1\text{MHz}$	-	1925	-	pF
		$V_R=520\text{V}, f=1\text{MHz}$	-	124	-	pF


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

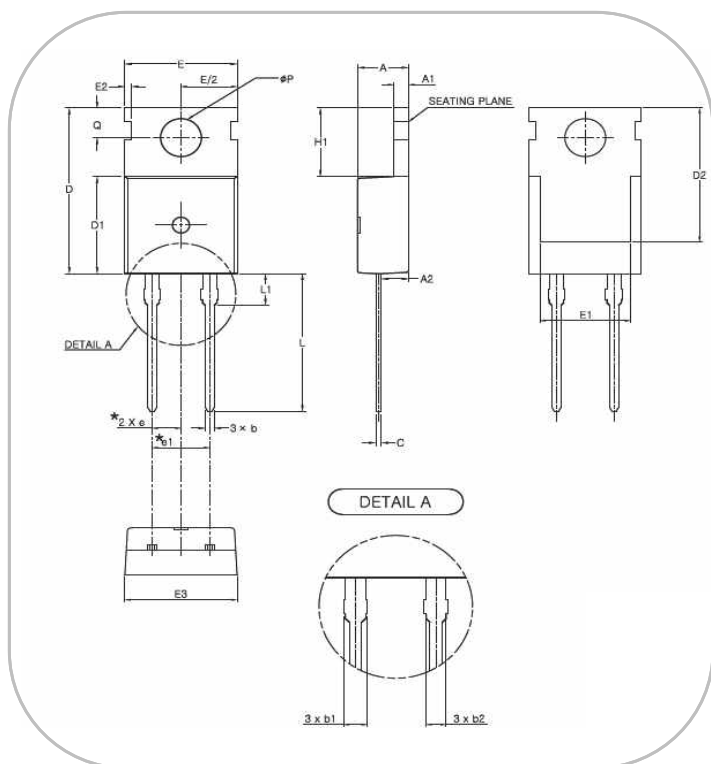
Symbol	Parameter	Max	Units
$R_{th(j-c)}$	Junction to Case	0.41	$^\circ\text{C}/\text{W}$

 $T_C - P_D$ 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

 $P_W - I_{FSM}$ Characteristics

 $V_R - Q_C$ Characteristics

 $V_R - C_T$ 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)		
ΦP	3.50	3.60	3.70
Q	2.70	2.80	2.90



Marking Information

