

## General description

Symbol	Value
$V_R$ @ $T_C=25^\circ\text{C}$	Min 650V
$I_F$ @ $T_C=150^\circ\text{C}$	2A
$Q_C$	Typ 6.5nC

## Features

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

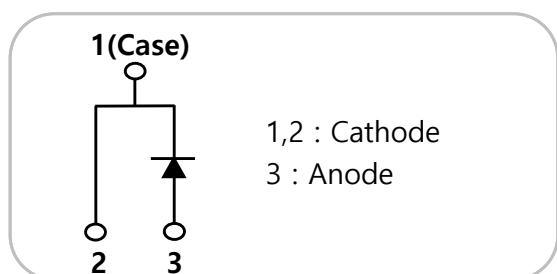
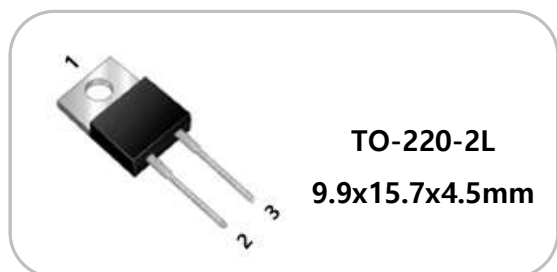
## Applications

- 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	$V_{RRM}$	-	650	V
DC Peak Reverse Voltage	$V_R$	-	650	V
Continuous Forward Current	$I_F$	$T_C=150^\circ\text{C}$	2	A
Non-Repetitive Forward Surge Current	$I_{FSM}$	$t_p=10\text{ ms}$ , Half Sine Pulse	10	A
Power Dissipation	$P_D$	$T_C=25^\circ\text{C}$	27	W
Operating and Storage Temperature Range	$T_{j, T_{stg}}$	-	-55 to 175	$^\circ\text{C}$

## Package

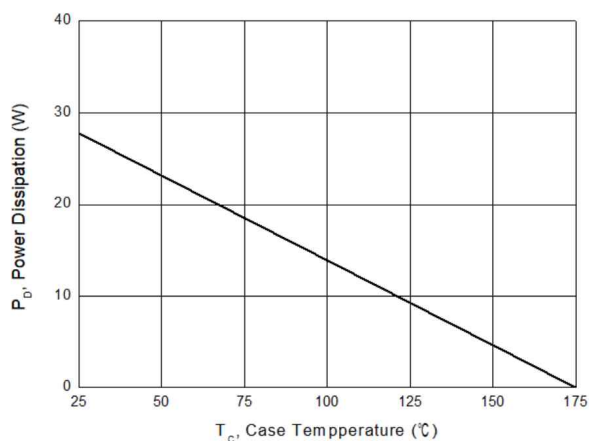
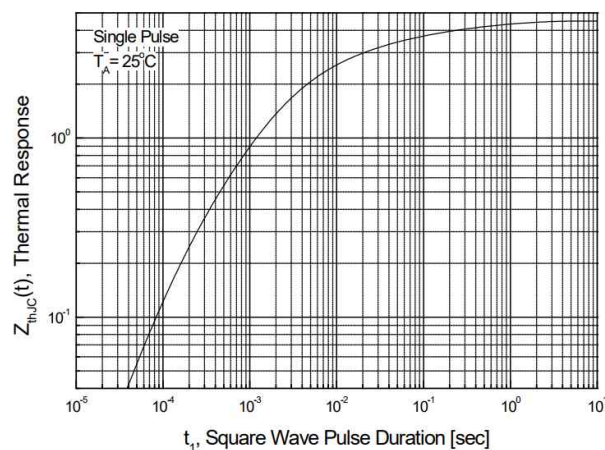


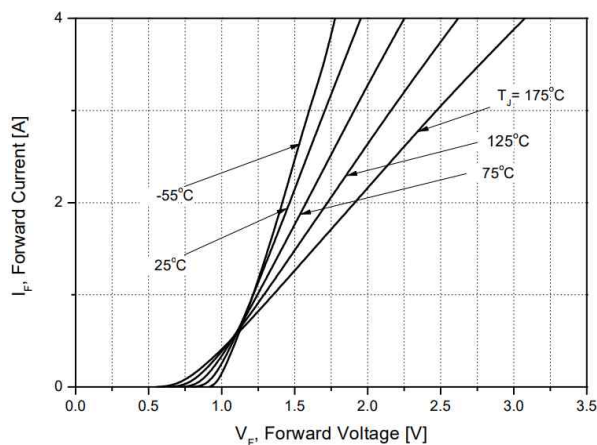
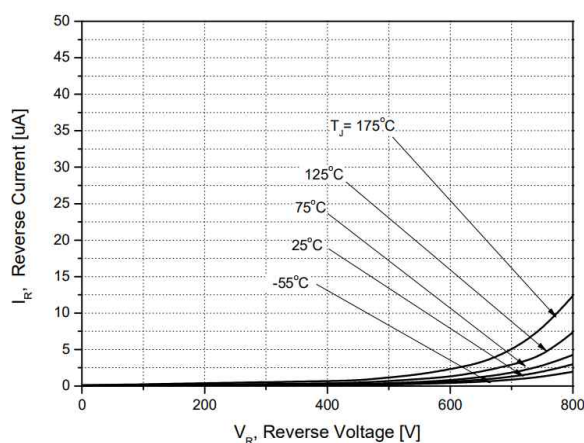
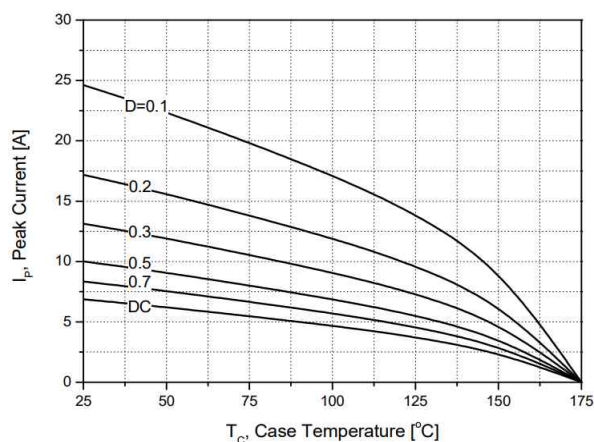
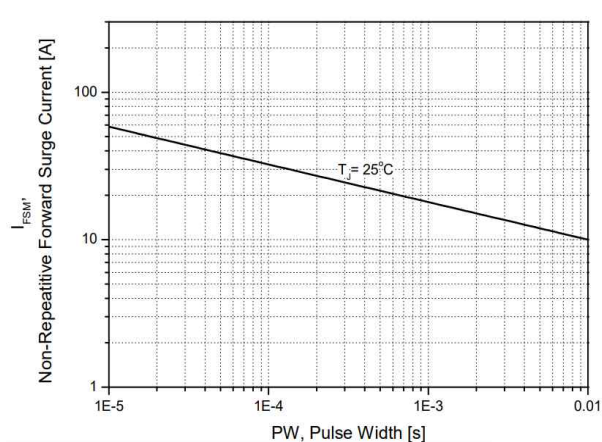
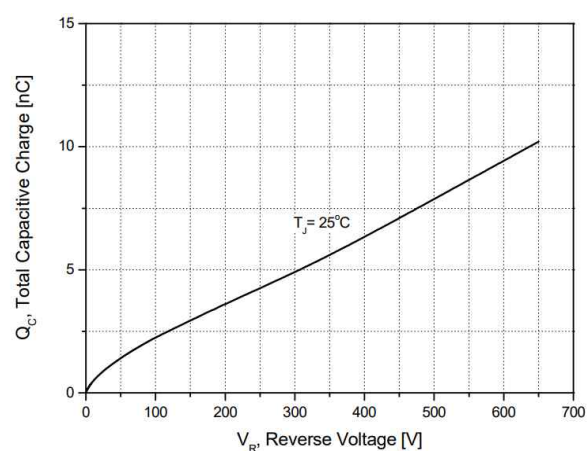
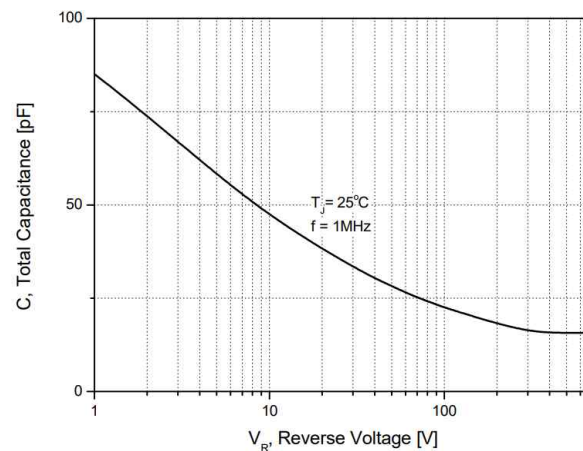

**Electrical Characteristics ( $T_C = 25^\circ\text{C}$ )**

Parameter	Symbol	Test Condition	Value			Units
			Min	Typ	Max	
Forward Voltage	$V_F$	$I_F=2\text{A}, T_C=25^\circ\text{C}$	-	1.5	1.8	V
		$I_F=2\text{A}, T_C=175^\circ\text{C}$	-	2.0	2.4	V
Reverse Current	$I_R$	$V_R=650\text{V}, T_C=25^\circ\text{C}$	-	12	34	$\mu\text{A}$
		$V_R=650\text{V}, T_C=175^\circ\text{C}$	-	24	340	$\mu\text{A}$
Total capacitive charge	$Q_C$	$V_R=400\text{V}$	-	6.5	-	nC
Total Capacitance	$C$	$V_R=1\text{V}, f=1\text{MHz}$	-	86	-	pF
		$V_R=520\text{V}, f=1\text{MHz}$	-	16	-	pF


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

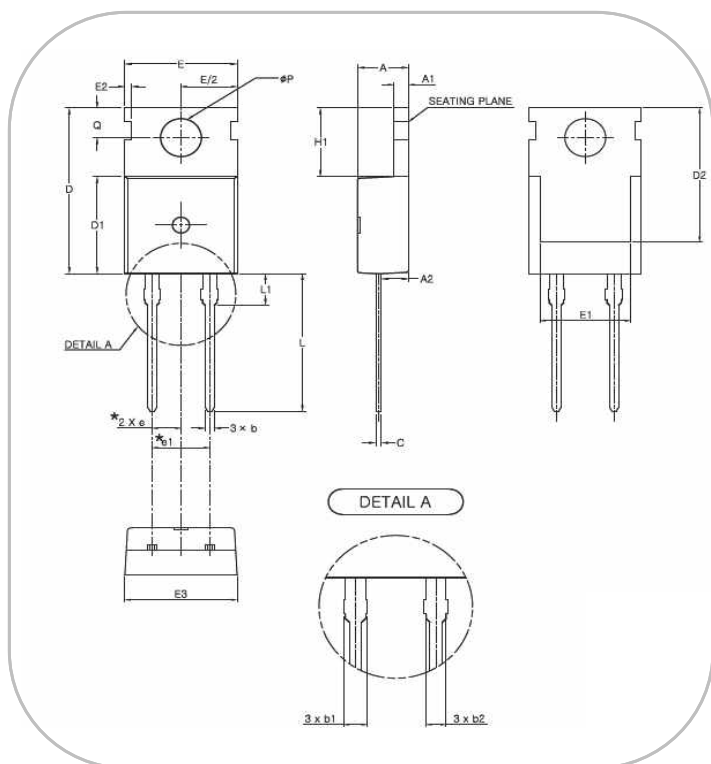
Symbol	Parameter	Max	Units
$R_{th(j-c)}$	Junction to Case	5.4	$^\circ\text{C}/\text{W}$

 $T_C - P_D$  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)		
$\phi P$	3.50	3.60	3.70
Q	2.70	2.80	2.90



## Marking Information

