

## General description

| Symbol | Value     |
|--------|-----------|
| $V_R$  | Min 1200V |
| $I_F$  | 8A        |
| $Q_C$  | Typ 53nC  |

## Features

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

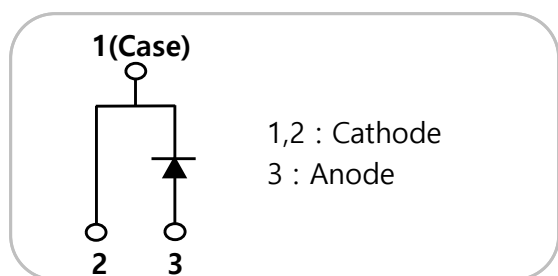
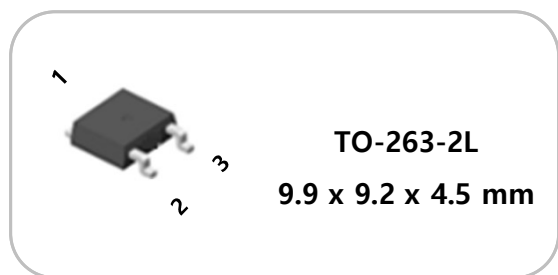
## Applications

- 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         | $V_{RRM}$      | -                                          | 1200       | V                |
| DC peak reverse voltage                 | $V_R$          | -                                          | 1200       | V                |
| Continuous forward current              | $I_F$          | $T_C=150^\circ\text{C}$                    | 8          | A                |
| Non-repetitive forward surge current    | $I_{FSM}$      | $T_C=25^\circ\text{C}$ , $t_p=10\text{ms}$ | 61         | A                |
| Power dissipation                       | $P_D$          | $T_C=25^\circ\text{C}$                     | 165        | W                |
| Operating and storage temperature range | $T_j, T_{stg}$ | -                                          | -55 to 175 | $^\circ\text{C}$ |

## Package

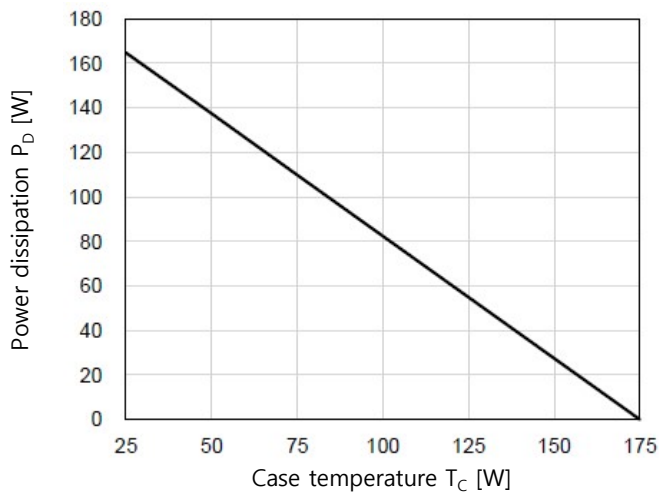
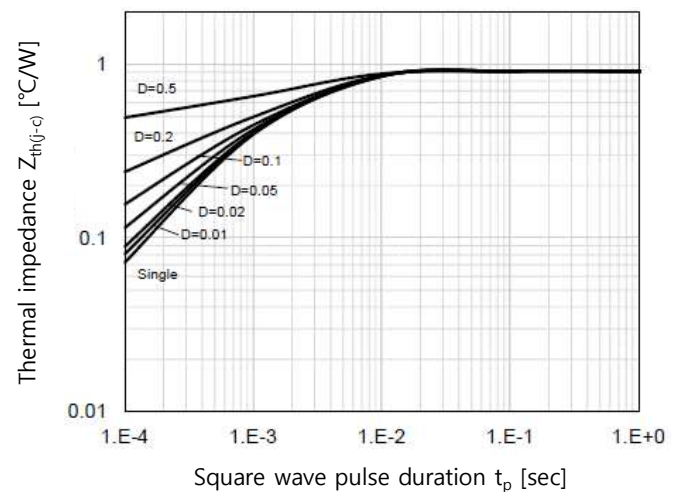


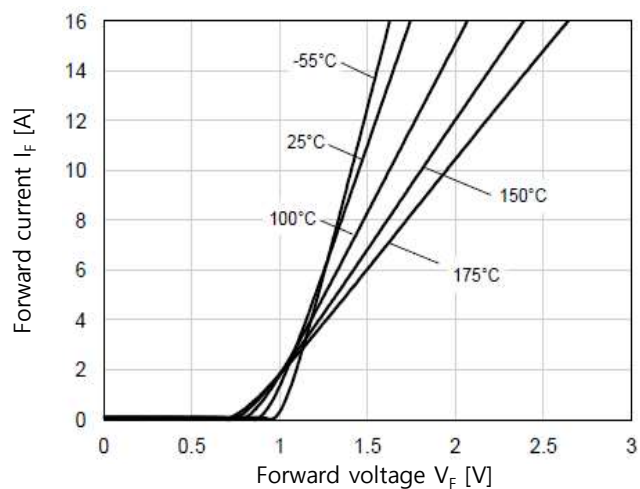
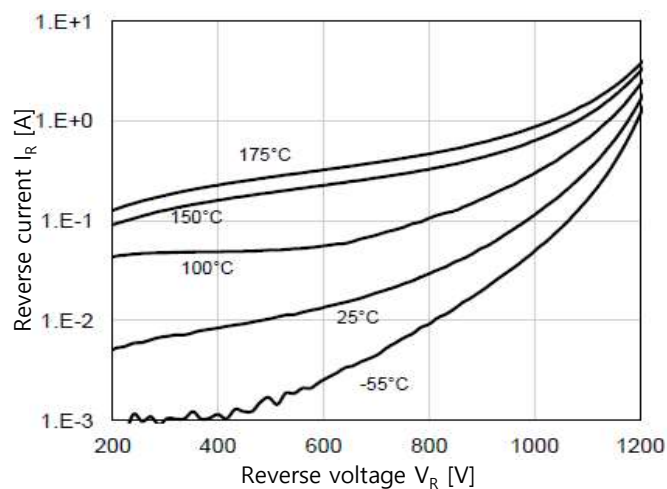
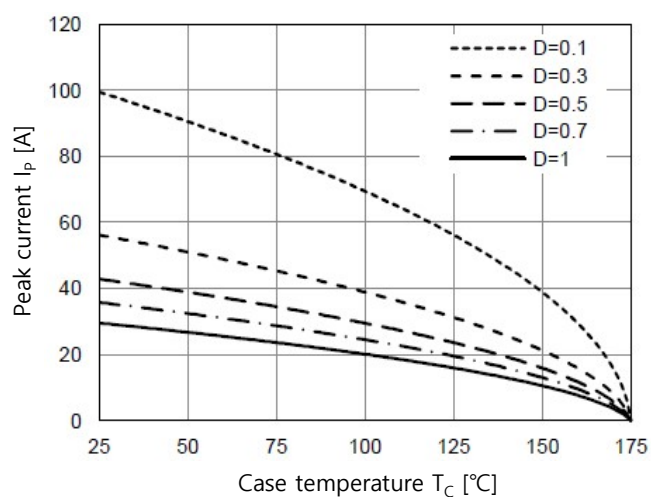
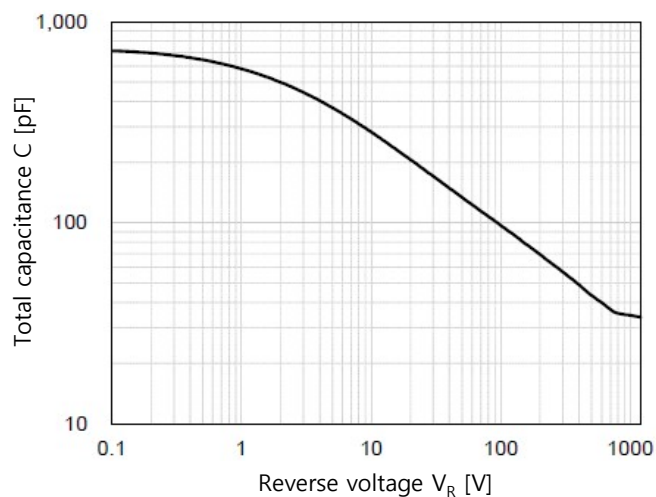
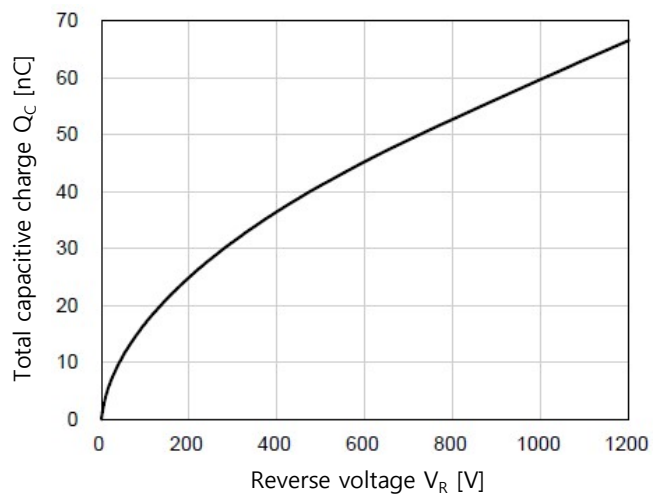

**Electrical characteristics ( $T_C = 25^\circ\text{C}$ )**

| Parameter               | Symbol | Test condition                            | Value |      |      | Units         |
|-------------------------|--------|-------------------------------------------|-------|------|------|---------------|
|                         |        |                                           | Min   | Typ  | Max  |               |
| Forward voltage         | $V_F$  | $I_F=8\text{A}, T_C=25^\circ\text{C}$     | -     | 1.40 | 1.70 | V             |
|                         |        | $I_F=8\text{A}, T_C=175^\circ\text{C}$    | -     | 1.80 | -    | V             |
| Reverse current         | $I_R$  | $V_R=1200\text{V}, T_C=25^\circ\text{C}$  | -     | -    | 100  | $\mu\text{A}$ |
|                         |        | $V_R=1200\text{V}, T_C=175^\circ\text{C}$ | -     | -    | 300  | $\mu\text{A}$ |
| Total capacitive charge | $Q_C$  | $V_R=800\text{V}$                         | -     | 53   | -    | nC            |
| Total capacitance       | $C$    | $V_R=1\text{V}, f=100\text{kHz}$          | -     | 582  | -    | pF            |
|                         |        | $V_R=800\text{V}, f=100\text{kHz}$        | -     | 35   | -    | pF            |


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

| Symbol        | Parameter        | Typ | Max  | Units                     |
|---------------|------------------|-----|------|---------------------------|
| $R_{th(j-c)}$ | Junction to case | -   | 0.91 | $^\circ\text{C}/\text{W}$ |

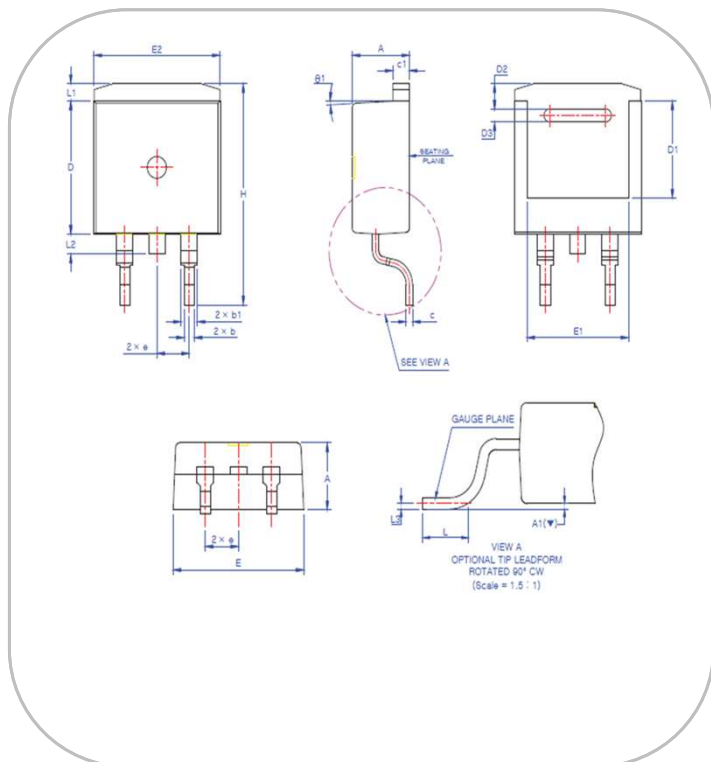
 $T_C - P_D$  Characteristics

 $t_p - Z_{th(j-c)}$  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-263)**

[Unit : mm]

| Symbol | Min       | Typ   | Max   |
|--------|-----------|-------|-------|
| A      | 4.30      | 4.50  | 4.70  |
| A1(▼)  | 0.00      | -     | 0.25  |
| b      | 0.70      | 0.80  | 0.90  |
| b1     | 1.17      | 1.27  | 1.37  |
| c      | 0.45      | 0.50  | 0.60  |
| c1     | 1.25      | 1.30  | 1.40  |
| D      | 9.00      | 9.20  | 9.40  |
| D1     | 6.50      | 6.70  | 6.90  |
| D2     | 1.65      | 1.75  | 1.85  |
| D3     | 0.80      | 0.90  | 1.00  |
| E      | 9.80      | 10.00 | 10.20 |
| E1     | 7.80      | 8.00  | 8.20  |
| E2     | 9.70      | 9.90  | 10.10 |
| e      | 2.54 BSC  |       |       |
| H      | 15.00     | 15.30 | 15.60 |
| L      | 2.00      | 2.30  | 2.60  |
| L1     | 1.00      | 1.20  | 1.40  |
| L2     | 1.20      | 1.40  | 1.60  |
| L3     | 0.254 BSC |       |       |
| θ1     | (3°)      |       |       |


**Marking information**
