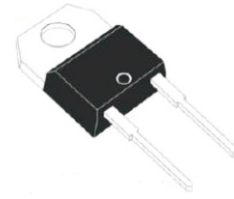


# CDBJCSC201200-G

**Reverse Voltage: 1200V**

**Forward Current: 20A**

**RoHS Device**



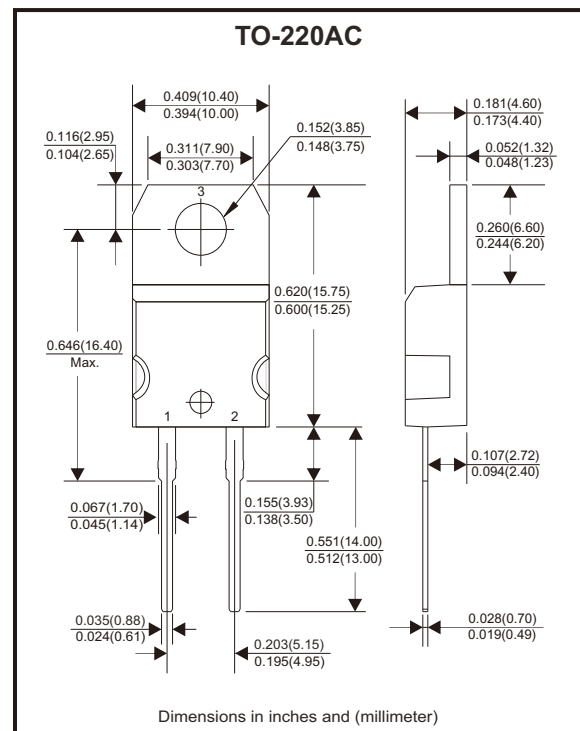
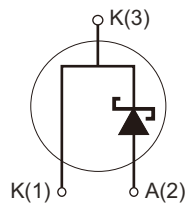
## Features

- Rated to 1200 at 20 Amps
- Zero reverse recovery current.
- Zero forward recovery voltage.
- Temperature independent switching behaviour.
- High temperature operation.
- High frequency operation.

## Mechanical data

- Case: TO-220AC, molded plastic.

## Circuit Diagram



## Maximum Ratings (at $T_A=25^\circ\text{C}$ , unless otherwise noted)

| Parameter                                 | Conditions                                                                  | Symbol          | Value           | Unit               |
|-------------------------------------------|-----------------------------------------------------------------------------|-----------------|-----------------|--------------------|
| Repetitive peak reverse voltage           |                                                                             | $V_{RRM}$       | 1200            | V                  |
| Surge peak reverse voltage                |                                                                             | $V_{RSM}$       | 1200            | V                  |
| DC blocking voltage                       |                                                                             | $V_{DC}$        | 1200            | V                  |
| Continuous forward current                | $T_C = 135^\circ\text{C}$                                                   | $I_F$           | 20              | A                  |
| Repetitive peak forward surge current     | $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$<br>Half sine wave, $D = 0.3$ | $I_{FRM}$       | 100             | A                  |
| Non-repetitive peak forward surge current | $T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$<br>Half sine wave (Per leg)  | $I_{FSM}$       | 250             | A                  |
| Power dissipation                         | $T_C = 25^\circ\text{C}$                                                    | $P_{TOT}$       | 192.3           | W                  |
|                                           | $T_C = 110^\circ\text{C}$                                                   |                 | 83.3            |                    |
| Typical thermal resistance                | Junction to case                                                            | $R_{\theta JC}$ | 2.16            | $^\circ\text{C/W}$ |
| Operating junction temperature range      |                                                                             | $T_J$           | $-55 \sim +175$ | $^\circ\text{C}$   |
| Storage temperature range                 |                                                                             | $T_{STG}$       | $-55 \sim +175$ | $^\circ\text{C}$   |

## Electrical Characteristics (at $T_A=25^\circ\text{C}$ , unless otherwise noted)

| Parameter               | Conditions                                                                      | Symbol | Min. | Typ. | Max. | Unit          |
|-------------------------|---------------------------------------------------------------------------------|--------|------|------|------|---------------|
| Forward voltage         | $I_F = 20\text{A}$ , $T_J = 25^\circ\text{C}$                                   | $V_F$  |      | 1.68 | 1.8  | V             |
|                         | $I_F = 20\text{A}$ , $T_J = 175^\circ\text{C}$                                  |        |      | 2.55 |      |               |
| Reverse current         | $V_R = 1200\text{V}$ , $T_J = 25^\circ\text{C}$                                 | $I_R$  |      | 20   | 100  | $\mu\text{A}$ |
|                         | $V_R = 1200\text{V}$ , $T_J = 175^\circ\text{C}$                                |        |      | 30   |      |               |
| Total capacitive charge | $V_R = 800\text{V}$ , $T_J = 150^\circ\text{C}$<br>$Q_C = \int_0^{V_R} C(V) dv$ | $Q_C$  |      | 110  |      | nC            |
| Total capacitance       | $V_R = 0\text{V}$ , $T_J = 25^\circ\text{C}$ , $f = 1\text{MHz}$                | $C$    |      | 1500 | 1580 | pF            |

## Rating and Characteristics Curves (CDBJCSC201200-G)

Fig.1 - Forward IV Characteristics as a Function of  $T_J$ :

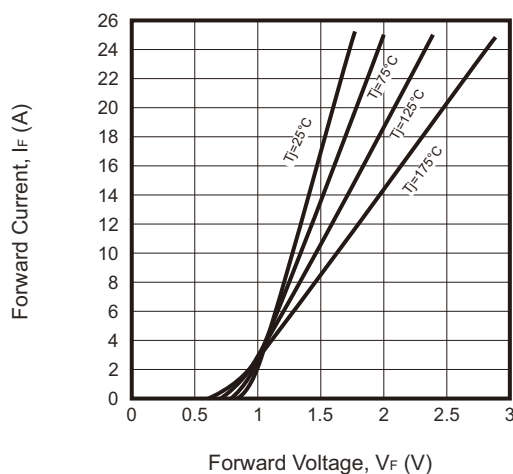


Fig.2 - Reverse IV Characteristics as a Function of  $T_J$ :

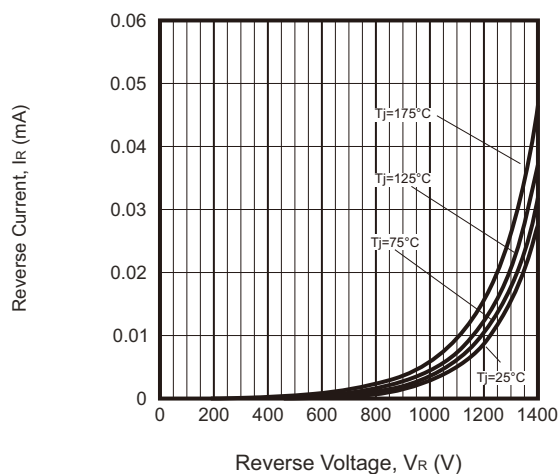


Fig.3 - Current Derating

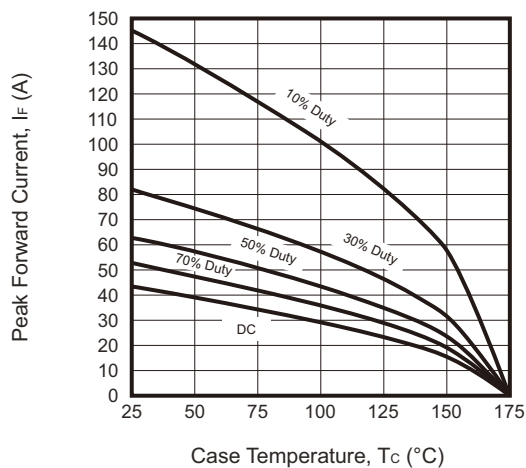
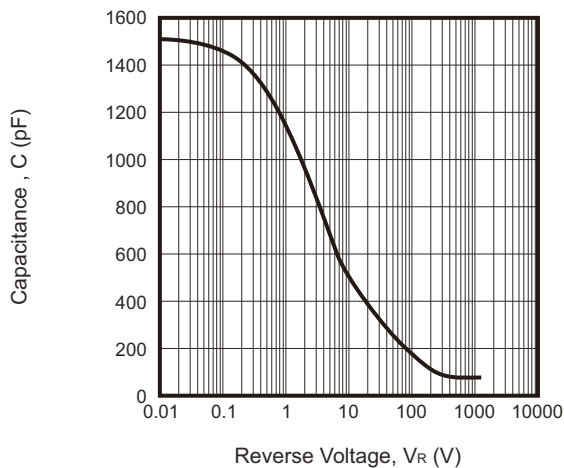
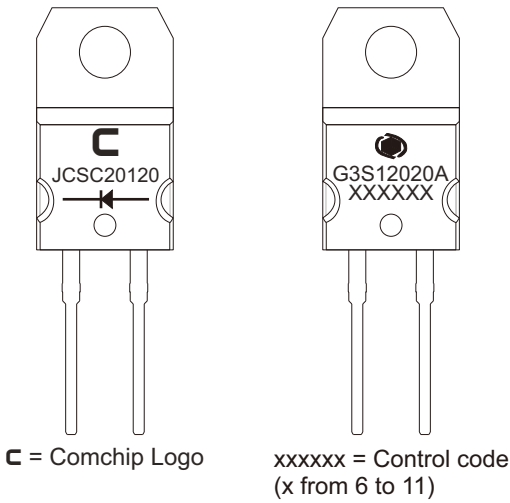


Fig.4 - Capacitance VS. Reverse Voltage



Marking Code

| Part Number     | Marking Code |           |
|-----------------|--------------|-----------|
| CDBJCSC201200-G | JCSC20120    | G3S12020A |



Standard Packaging

| Case Type | TUBE PACK       |                |
|-----------|-----------------|----------------|
|           | TUBE<br>( pcs ) | BOX<br>( pcs ) |
| TO-220AC  | 50              | 1000           |