

ROHM SCS110KE2C **PDF**

深圳创唯电子有限公司

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SiC Schottky Barrier Diode

SCS110KE2

● **Applications**

General rectification

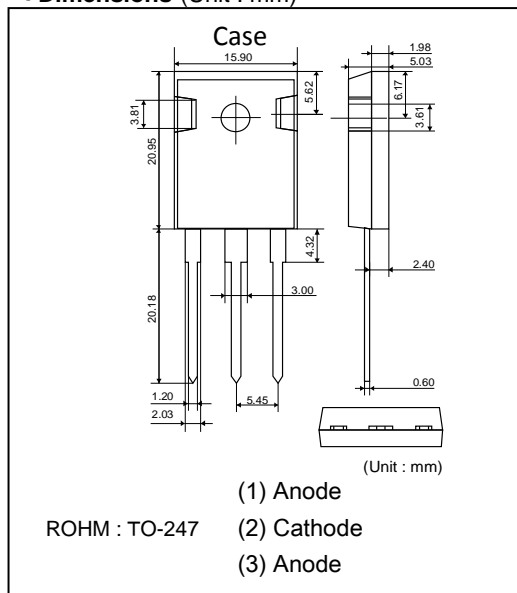
● **Features**

- 1) Shorter recovery time
- 2) Reduced temperature dependence
- 3) High-speed switching possible

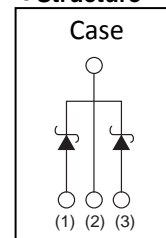
● **Construction**

Silicon carbide epitaxial planer type

● **Dimensions (Unit : mm)**



● **Structure**



● **Absolute maximum ratings (Tj=25°C)**

| Parameter | Symbol | Limits | Unit |
|--|---------------|-------------|--------|
| Reverse voltage (repetitive peak) | V_{RM} | 1200 | V |
| Reverse voltage (DC) | V_R | 1200 | V |
| Continuous forward current *6 | I_F | 5 / 10 *1 | A |
| Surge no repetitive forward current *6 | I_{FSM} | 24 / 48 *2 | A |
| | | 97 / 194 *3 | A |
| Repetitive peak forward current *6 | I_{FRM} | 20 / 39 *4 | A |
| Total power dissipation *6 | P_D | 83 / 160 *5 | W |
| Junction temperature | T_j | 175 | °C |
| Range of storage temperature | T_{stg} | -55 to +175 | °C |
| Junction to case *6 | $R_{th(j-c)}$ | 1.8 / 0.93 | °C / W |

(*1) $T_c=153^\circ\text{C} / 151^\circ\text{C}$ (*2) $PW=8.3\text{ms}$ sinusoidal, $T_j=25^\circ\text{C}$

(*3) $PW=10\mu\text{s}$ square, $T_j=25^\circ\text{C}$ (*4) $T_c=120^\circ\text{C}$, $T_j=150^\circ\text{C}$, Duty cycle=10% (*5) $T_c=25^\circ\text{C}$ (*6) Per Leg / Per Device

● **Electrical characteristics (Tj=25°C) [Per Leg]**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|-------------------------|----------|------|------|------|---------------|---|
| DC blocking voltage | V_{DC} | 1200 | - | - | V | $I_R=0.1\text{mA}$ |
| Forward voltage | V_F | - | 1.50 | 1.75 | V | $I_F=5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 2.00 | - | V | $I_F=5\text{A}$, $T_j=175^\circ\text{C}$ |
| Reverse current | I_R | - | 5 | 100 | μA | $V_R=1200\text{V}$, $T_j=25^\circ\text{C}$ |
| | | - | 60 | - | μA | $V_R=1200\text{V}$, $T_j=175^\circ\text{C}$ |
| Total capacitance | C | - | 325 | - | pF | $V_R=1\text{V}$, $f=1\text{MHz}$ |
| | | - | 25 | - | pF | $V_R=800\text{V}$, $f=1\text{MHz}$ |
| Total capacitive charge | Q_c | - | 20 | - | nC | $V_R=800\text{V}$, $di/dt=500\text{A}/\mu\text{s}$ |
| Switching time | t_c | - | 15 | - | ns | $V_R=800\text{V}$, $di/dt=500\text{A}/\mu\text{s}$ |

●Electrical characteristic curves (Ta=25°C)

Fig.1 V_F - I_F Characteristics [Per Leg]

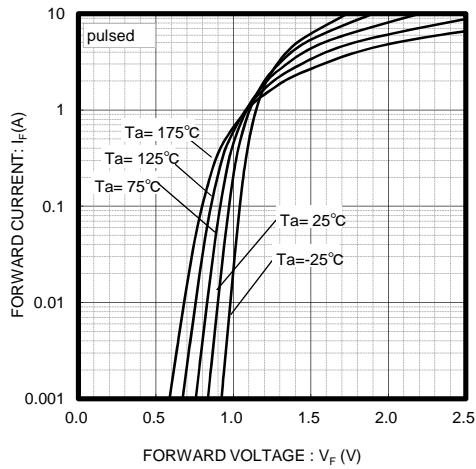


Fig.2 V_F - I_F Characteristics [Per Leg]

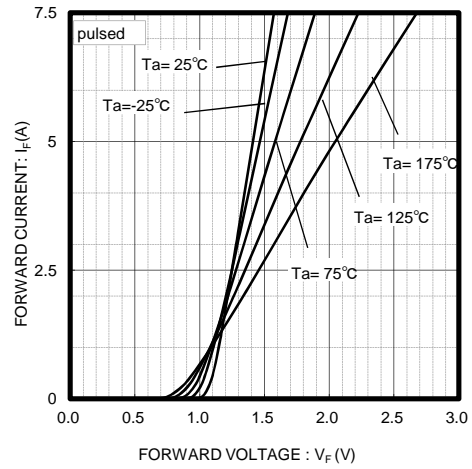


Fig.3 V_R - I_R Characteristics [Per Leg]

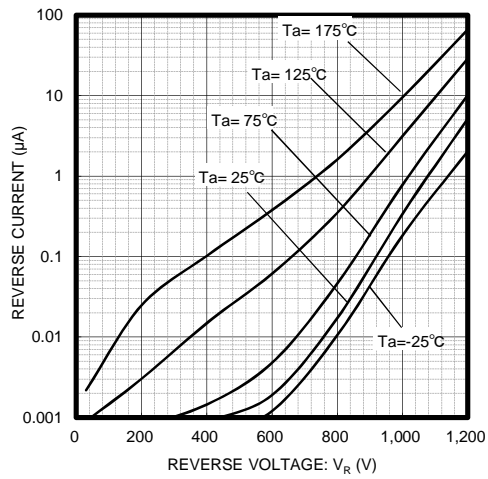


Fig.4 V_R - C_t Characteristics [Per Leg]

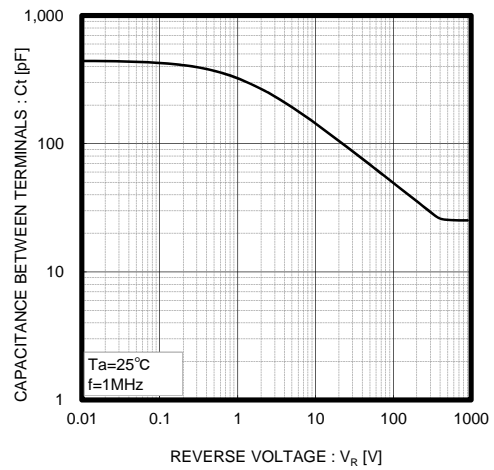


Fig.5 Thermal Resistance vs Pulse Width

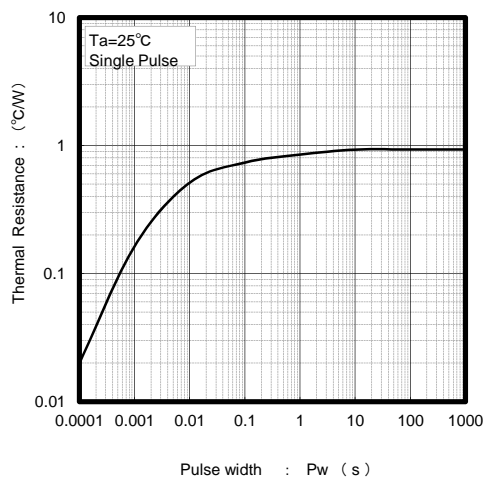


Fig.6 Power Dissipation

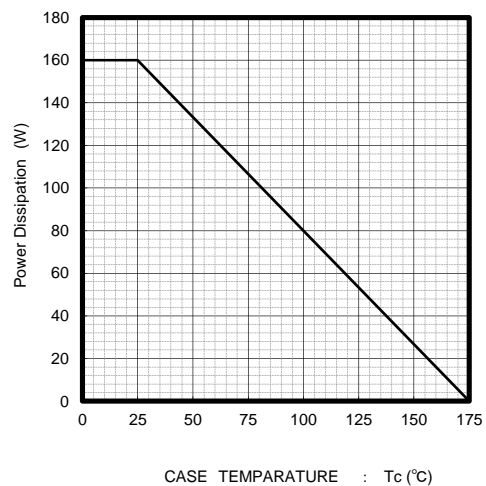


Fig.7 Derating Curve I_p - T_c

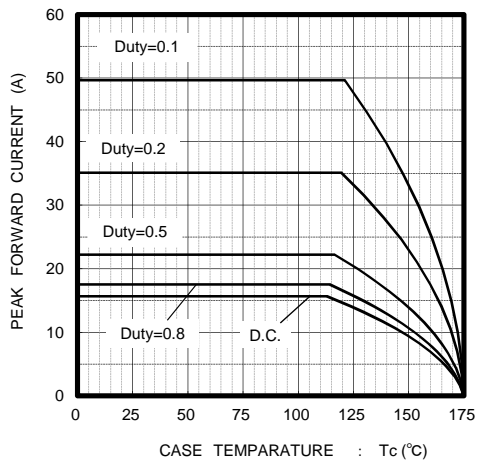
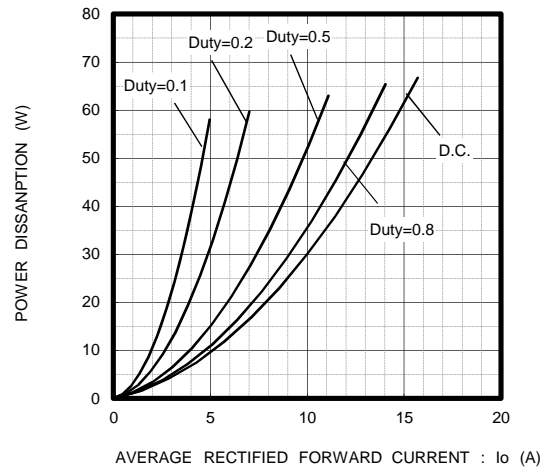


Fig.8 I_o - P_f Characteristics



Notes

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