

SiC Schottky Barrier Diode

SCS110AG

●Applications

Switching power supply

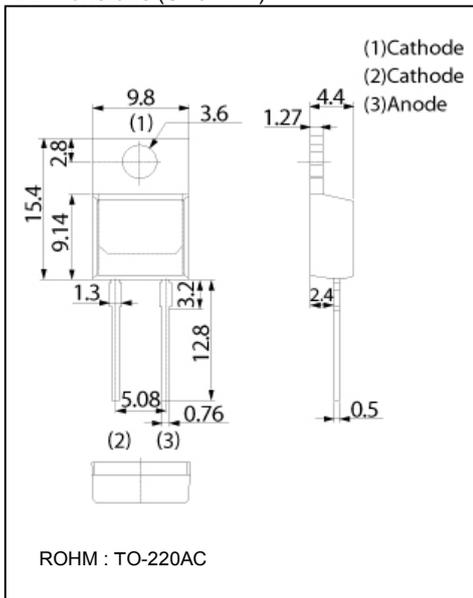
●Features

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

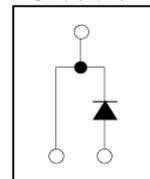
●Construction

Silicon carbide epitaxial planer type

●Dimensions (Unit : mm)



●Structure



●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|--|-----------|-------------|------|
| Reverse voltage (repetitive) | V_{RM} | 600 | V |
| Reverse voltage (DC) | V_R | 600 | V |
| Continuous forward current (*1) | I_F | 10 | A |
| Forward current surge peak (60Hz· 1cyc) (*2) | I_{FSM} | 40 | A |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | °C |

(*1) $T_c=117^\circ\text{C}$ max

(*2)PW=8.3ms sinusoidal

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|-------------------------|---------------|------|------|------|---------------|--|
| DC blocking voltage | V_{DC} | 600 | - | - | V | $I_R=0.2\text{mA}$ |
| Forward voltage | V_F | - | 1.5 | 1.7 | V | $I_F=10\text{A}$ |
| Reverse current | I_R | - | 2.0 | 200 | μA | $V_R=600\text{V}$ |
| Total capacitance | C | - | 430 | - | pF | $V_R=1\text{V}, f=1\text{MHz}$ |
| | | - | 47 | - | pF | $V_R=600\text{V}, f=1\text{MHz}$ |
| Total capacitive charge | Q_c | - | 16 | - | nC | $V_R=400\text{V}, di/dt=350\text{A}/\mu\text{s}$ |
| Switching time | t_c | - | 15 | - | ns | $V_R=400\text{V}, di/dt=350\text{A}/\mu\text{s}$ |
| Thermal resistance | $R_{th(j-c)}$ | - | - | 1.8 | °C/W | junction to case |

Fig.1 VF-IF Characteristics

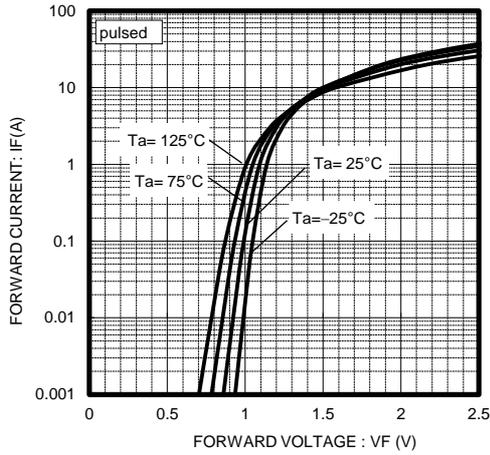


Fig.2 VF-IF Characteristics

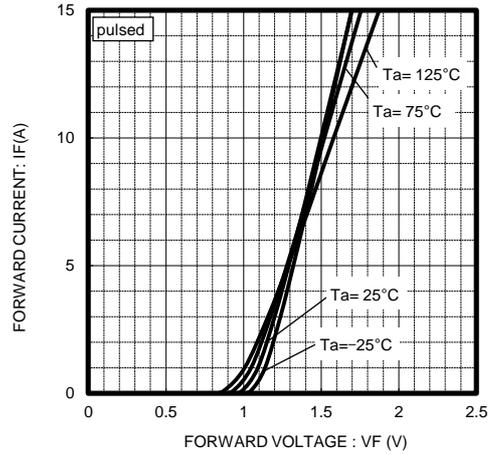


Fig.3 VR-IR Characteristics

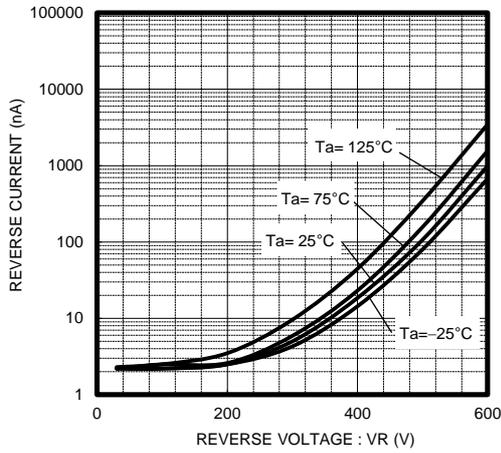


Fig.4 VR-Ct Characteristics

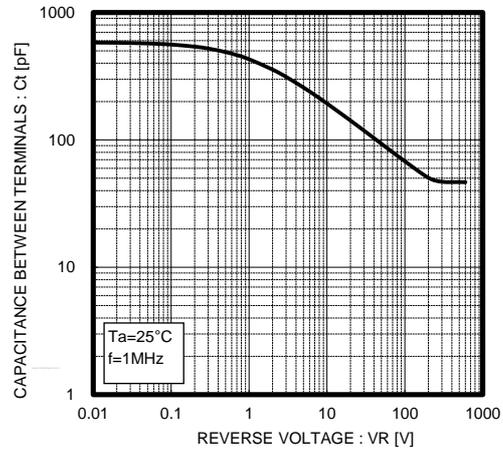


Fig.5 Thermal Resistance vs Pulse Width

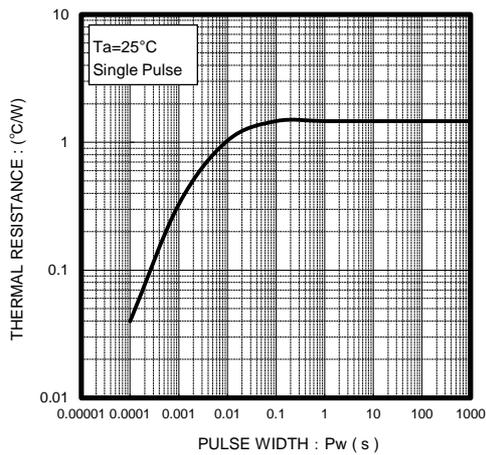


Fig.6 Power Dissipation

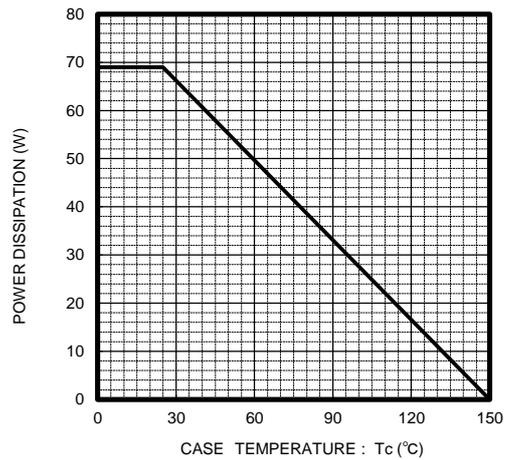


Fig.7 Derating Curve Ip-Tc

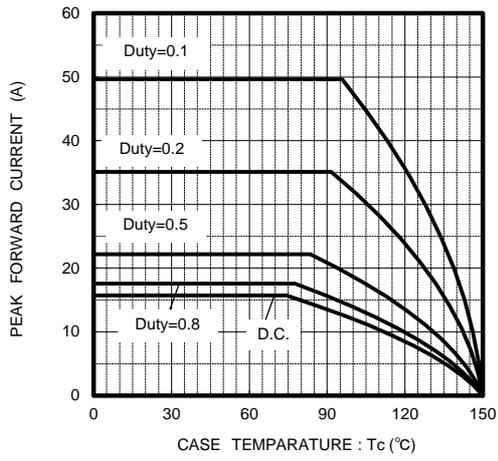
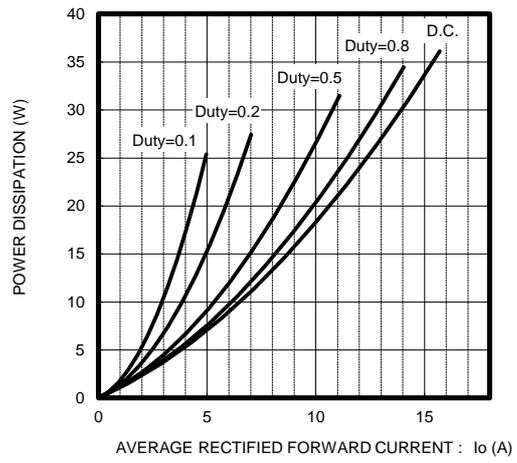


Fig.8 Io-Pf Characteristics



Notes

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