

SiC Schottky Barrier Diode

SCS120AG

●Applications

Switching power supply

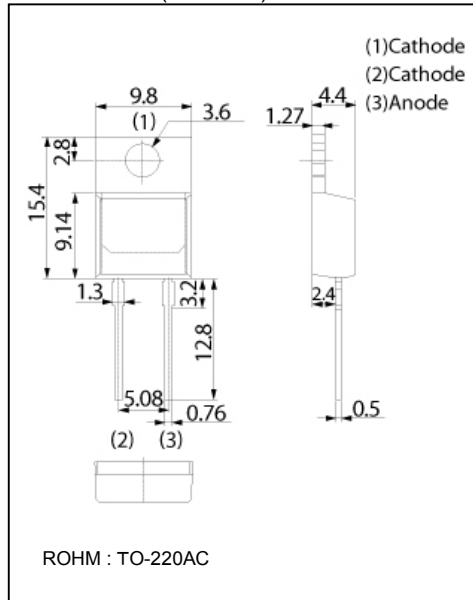
●Features

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

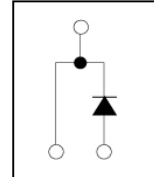
●Construction

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	20	A
Forward current surge peak (60Hz· 1cyc) (*2)	I_{FSM}	76	A
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

(*1) $T_c=98^\circ\text{C}$ 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	$I_R=0.4\text{mA}$
Forward voltage	V_F	-	1.5	1.7	V	$I_F=20\text{A}$
Reverse current	I_R	-	4.0	400	μA	$V_R=600\text{V}$
Total capacitance	C	-	860	-	pF	$V_R=1\text{V}, f=1\text{MHz}$
		-	93	-	pF	$V_R=600\text{V}, f=1\text{MHz}$
Total capacitive charge	Q_c	-	35	-	nC	$V_R=400\text{V}, di/dt=380\text{A}/\mu\text{s}$
Switching time	t_c	-	19	-	ns	$V_R=400\text{V}, di/dt=380\text{A}/\mu\text{s}$
Thermal resistance	$R_{th(j-c)}$	-	-	1.4	°C/W	junction to case

Fig.1 VF-IF Characteristics

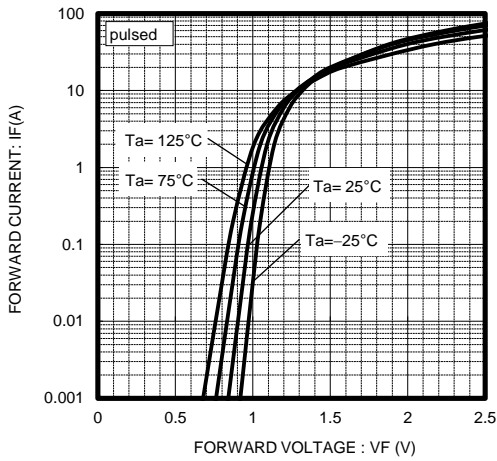


Fig.2 VF-IF Characteristics

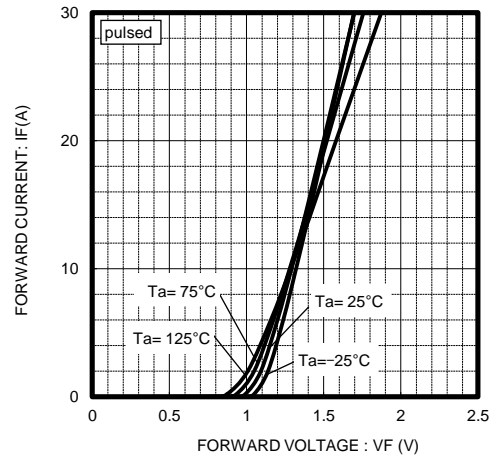


Fig.3 VR-IR Characteristics

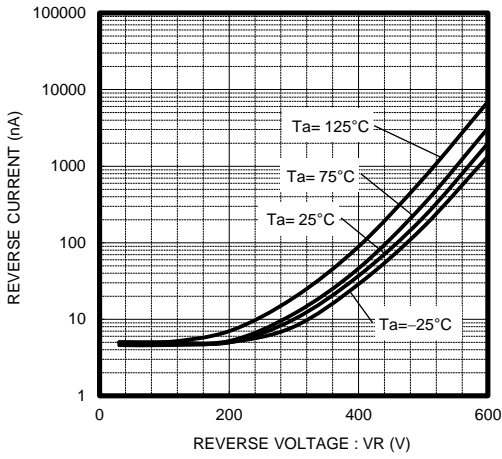


Fig.4 VR-Ct Characteristics

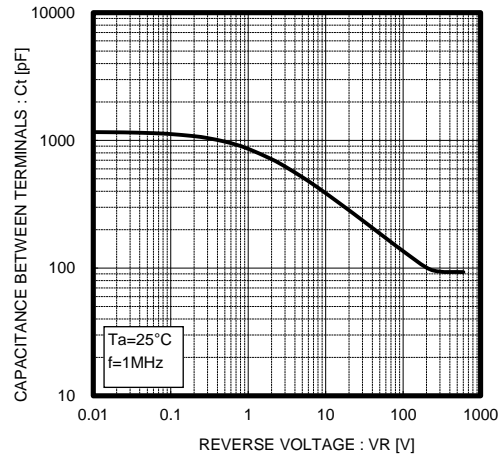


Fig.5 Thermal Resistance vs Pulse Width

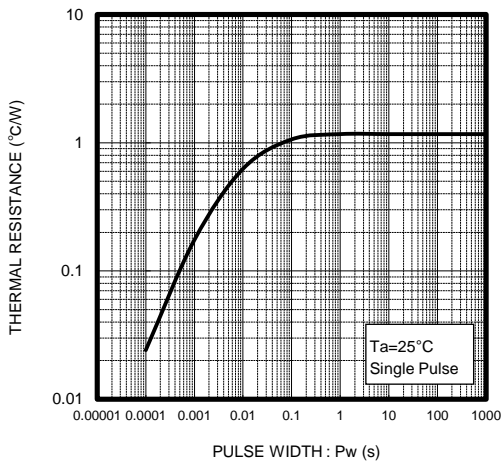


Fig.6 Power Dissipation

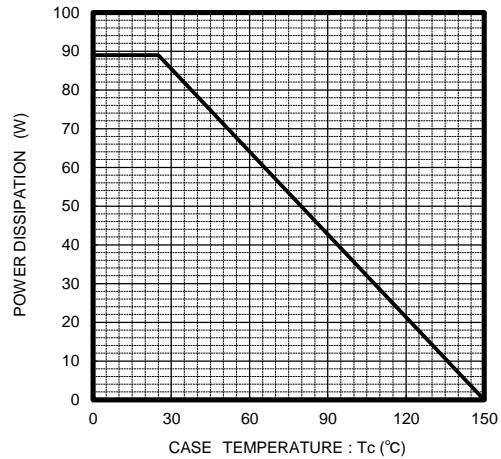


Fig.7 Derating Curve I_p - T_c

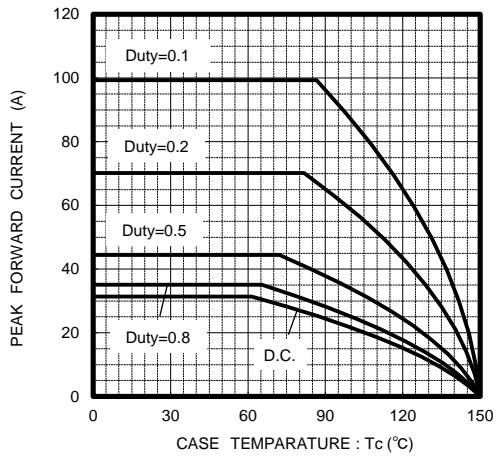
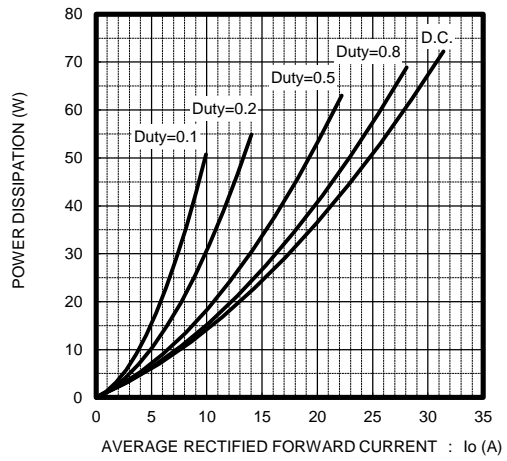


Fig.8 I_o - P_f Characteristics



Notes

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