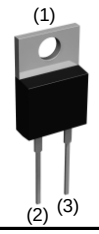
SCS210AG

SiC Schottky Barrier Diode Datasheet

V_R	650V
I_F	10A
Q_C	15nC

●Outline

TO-220AC



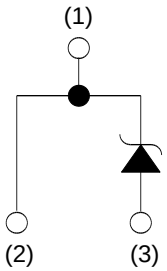
●Features

1) Shorter recovery time

2) Reduced temperature dependence

3) High-speed switching possible

●Inner circuit



(1) Cathode
(2) Cathode
(3) Anode

●Packaging specifications

Type	Packaging	Tube
	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	50
	Taping code	C
	Marking	SCS210AG

●Construction

Silicon carbide epitaxial planer type

●Absolute maximum ratings (Tj = 25°C)

Parameter	Symbol	Value	Unit
Reverse voltage (repetitive peak)	V_{RM}	650	V
Reverse voltage (DC)	V_R	650	V
Continuous forward current	I_F	10*1	A
Surge no repetitive forward current	I_{FSM}	40*2	A
		150*3	A
		31*4	A
Repetitive peak forward current	I_{FRM}	41*5	A
Total power disspation	P_D	78*6	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	−55 to +175	°C

*1 Tc=133°C *2 PW=8.3ms sinusoidal, Tj=25°C *3 PW=10μs square, Tj=25°C

*4 PW=8.3ms sinusoidal, Tj=150°C *5 Tc=100°C, Tj=150°C, Duty cycle=10% *6 Tc=25°C

●Electrical characteristics (Tj = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}	I_R =0.2mA	600	-	-	V
Forward voltage	V_F	I_F=10A,Tj=25°C	-	1.35	1.55	V
		I_F=10A,Tj=150°C	-	1.55	-	V
		I_F=10A,Tj=175°C	-	1.63	-	V
Reverse current	I_R	V_R=600V,Tj=25°C	-	2	200	μA
		V_R=600V,Tj=150°C	-	30	-	μA
		V_R=600V,Tj=175°C	-	70	-	μA
Total capacitance	C	V_R=1V,f=1MHz	-	365	-	pF
		V_R=600V,f=1MHz	-	37	-	pF
Total capacitive charge	Qc	V_R=400V,di/dt=350A/μs	-	15	-	nC
Switching time	tc	V_R=400V,di/dt=350A/μs	-	15	-	ns

●Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance	$R_{th(j-c)}$	-	-	1.6	1.9	°C/W

●Electrical characteristic curves

Fig.1 V_F - I_F Characteristics

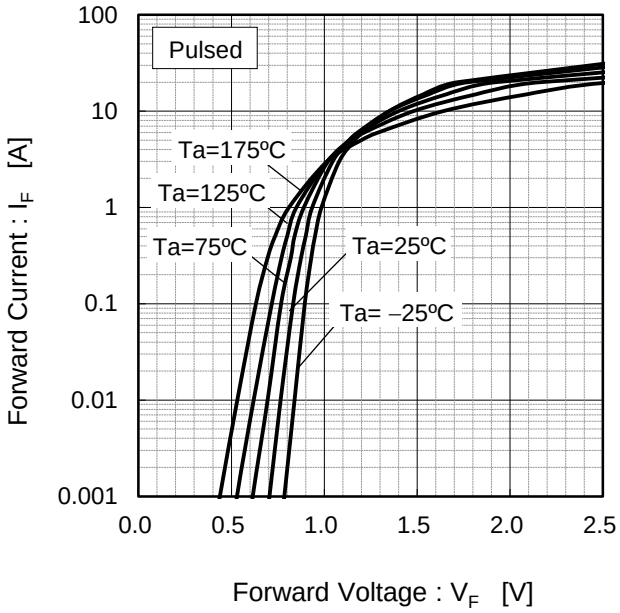


Fig.2 V_F - I_F Characteristics

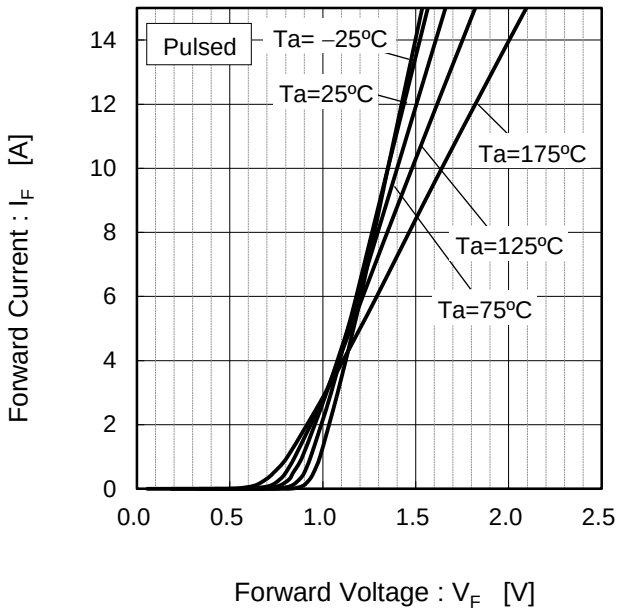


Fig.3 V_R - I_R Characteristics

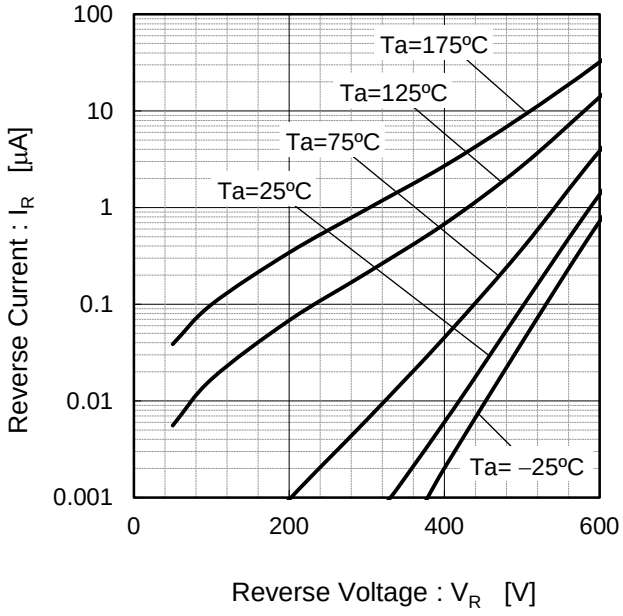
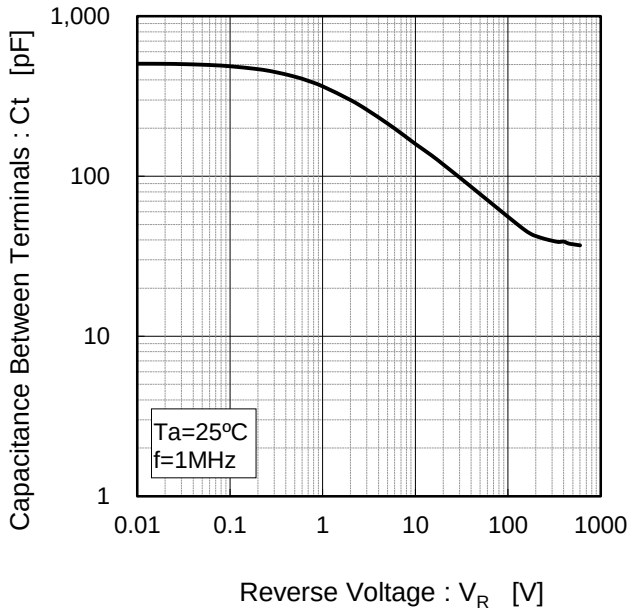


Fig.4 V_R-Ct Characteristics



●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width

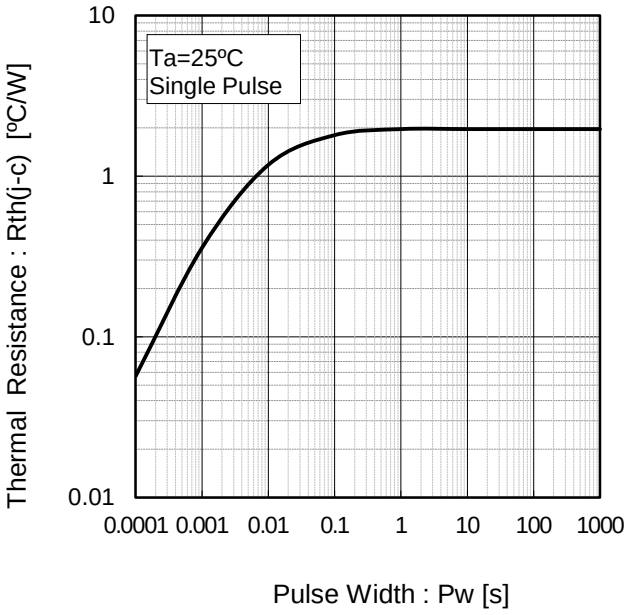


Fig.6 Power Dissipation

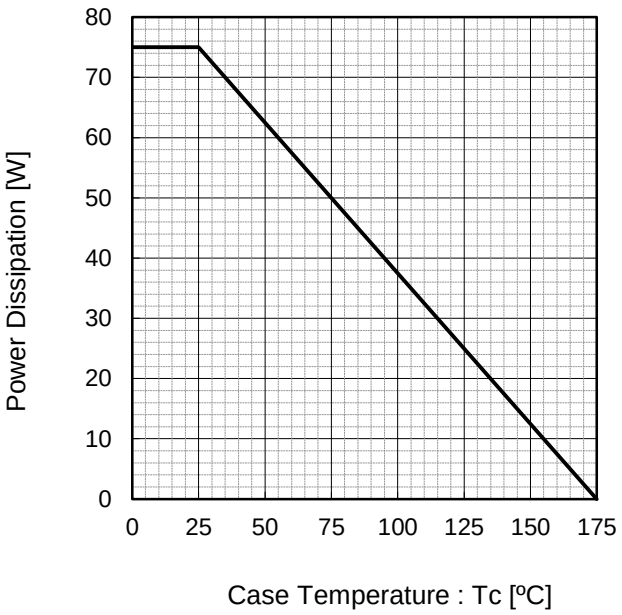


Fig.7 Derating Curve Ip-Tc

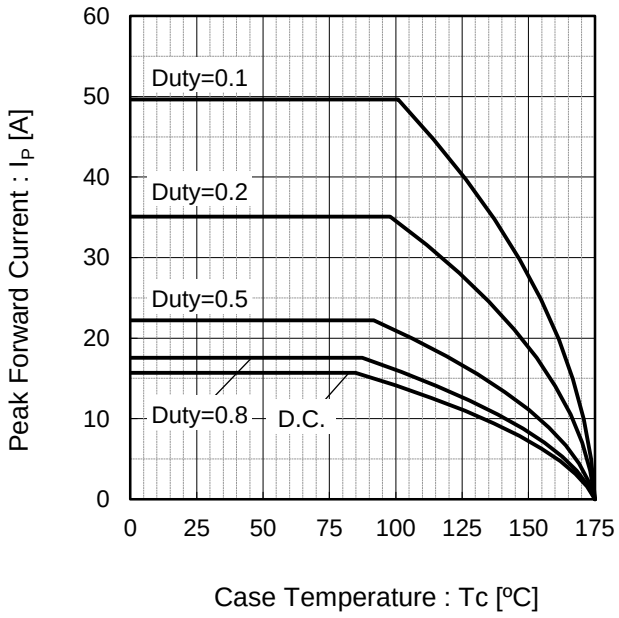
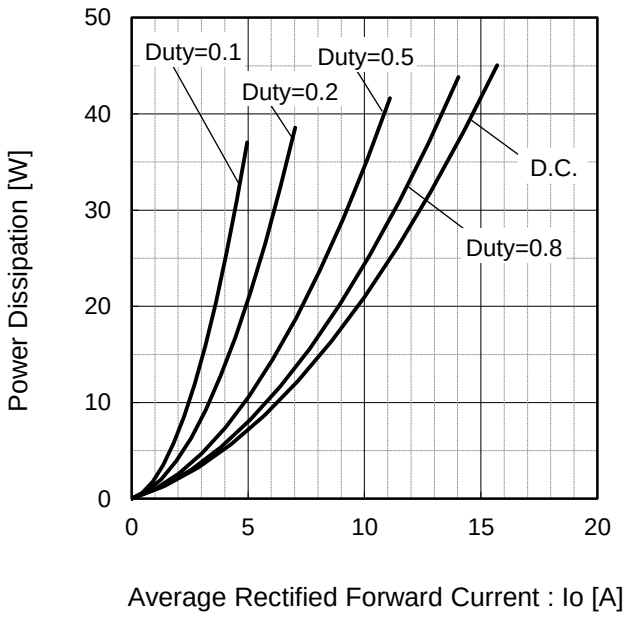


Fig.8 Io-Pf Characteristics



●**Dimensions** (Unit : mm)

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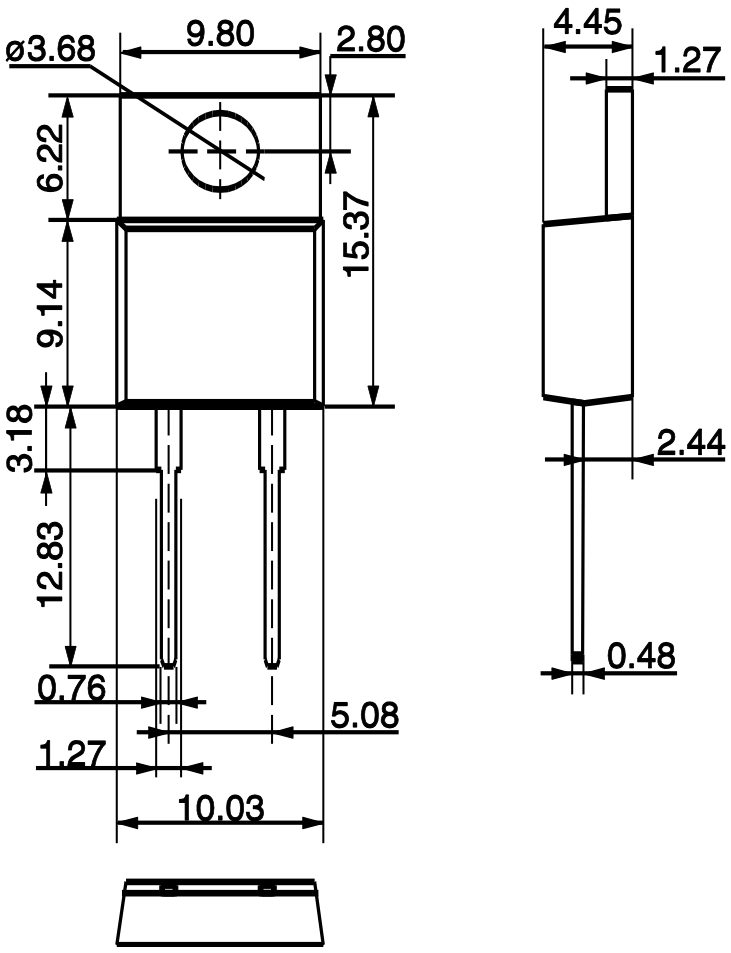

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