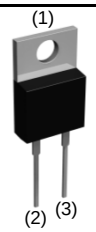
SCS120KG

SiC Schottky Barrier Diode Datasheet

V_R	1200V
I_F	20A
Q_C	70nC

●Outline

TO-220AC



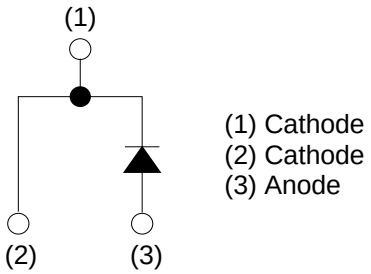
●Features

1) Shorter recovery time

2) Reduced temperature dependence

3) High-speed switching possible

●Inner circuit



●Construction

Silicon carbide epitaxial planer type

●Packaging specifications

Type	Packaging	Tube
	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	50
	Taping code	-
	Marking	SCS120KG

●Absolute maximum ratings (Tj = 25°C)

Parameter	Symbol	Value	Unit
Reverse voltage (repetitive peak)	V_{RM}	1200	V
Reverse voltage (DC)	V_R	1200	V
Continuous forward current	I_F	20*1	A
Surge no repetitive forward current	I_{FSM}	84*2	A
		358*3	A
Repetitive peak forward current	I_{FRM}	60*4	A
Total power dissipation	P_D	130*5	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	−55 to +175	°C
Thermal resistance, junction to case	Rth(j-c)	1.1	°C/W

*1 Tc=108°C *2 PW=8.3ms sinusoidal,Tj=25°C

*3 PW=10μs square,Tj=25°C *4 Tc=100°C,Tj=150°C,Duty cycle=10% *5 Tc=25°C

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●**Electrical characteristics** (Tj = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}	I_R =0.4mA	1200	-	-	V
Forward voltage	V_F	I_F=20A,Tj=25°C	-	1.5	1.75	V
		I_F=20A,Tj=175°C	-	2.0	-	V
Reverse current	I_R	V_R=1200V,Tj=25°C	-	20	400	μA
		V_R=120V,Tj=175°C	-	240	-	μA
Total capacitance	C	V_R=1V,f=1MHz	-	1300	-	pF
		V_R=800V,f=1MHz	-	100	-	pF
Total capacitive charge	Qc	V_R=800V,di/dt=500A/μs	-	70	-	nC
Switching time	tc	V_R=800V,di/dt=500A/μs	-	18	-	ns

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●Electrical characteristic curves

Fig.1 V_F - I_F Characteristics

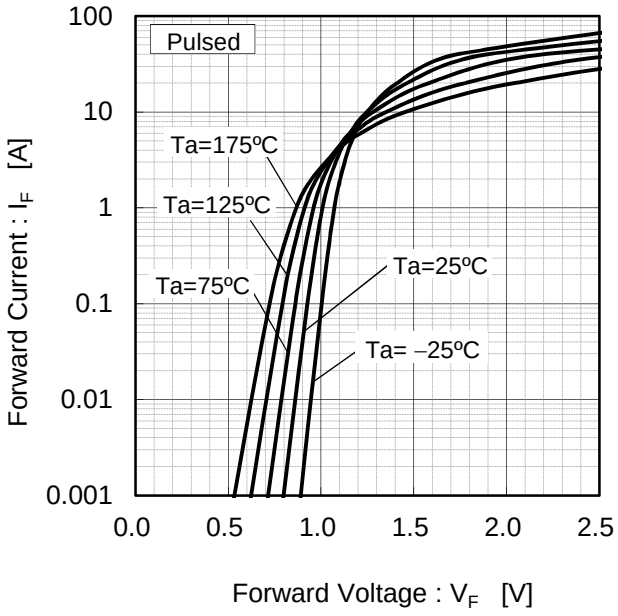


Fig.2 V_F - I_F Characteristics

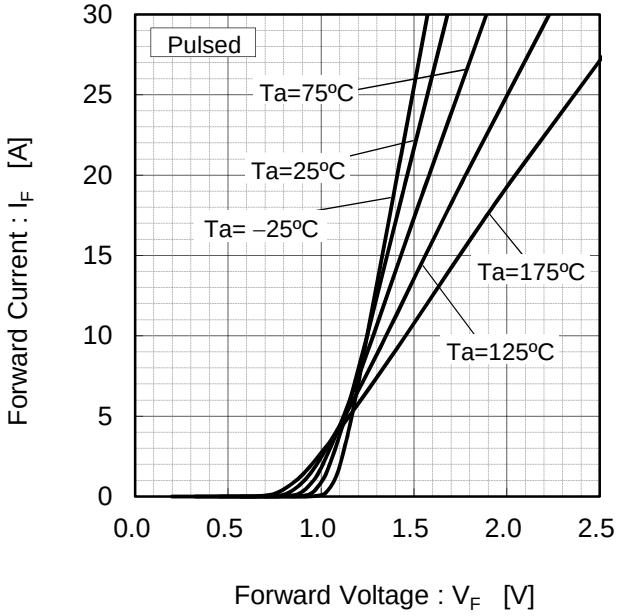


Fig.3 V_R - I_R Characteristics

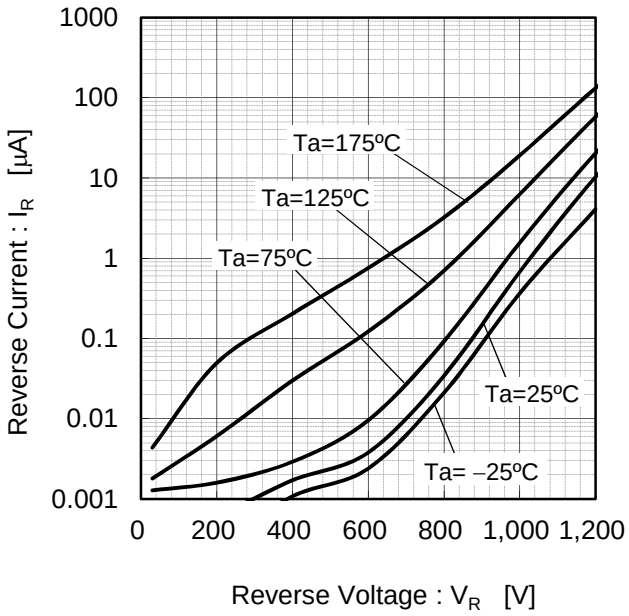
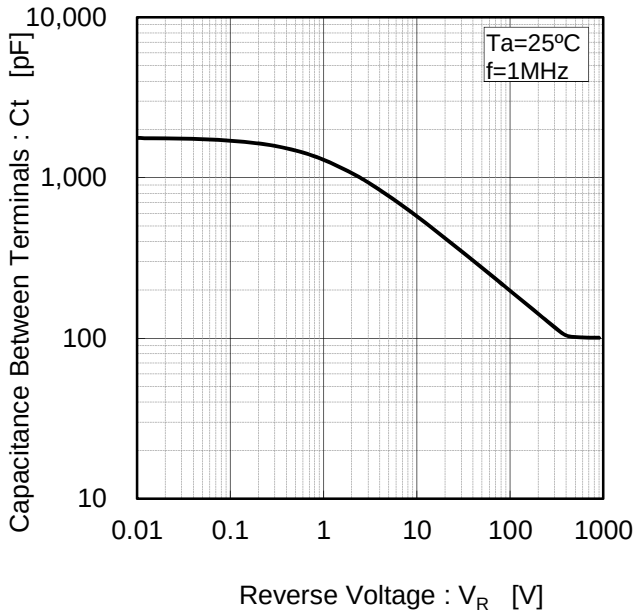


Fig.4 V_R-Ct Characteristics



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●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width

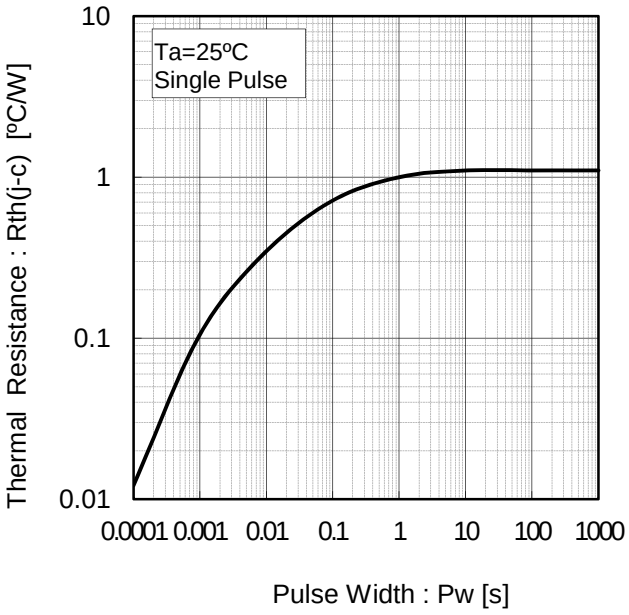


Fig.6 Power Dissipation

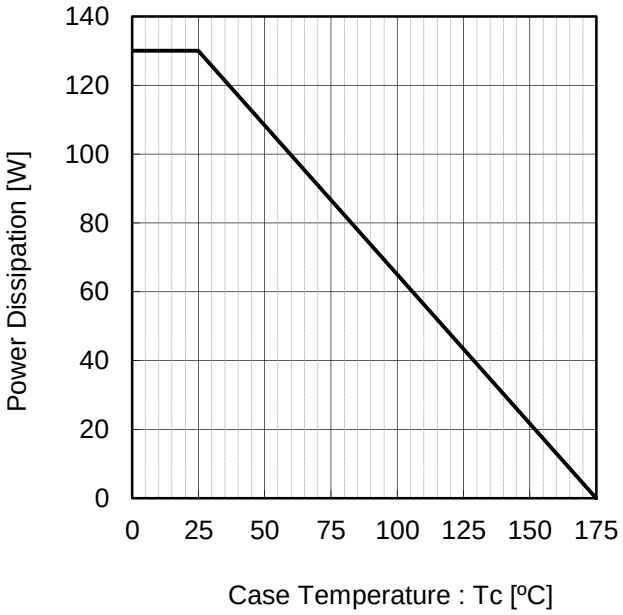


Fig.7 Derating Curve Ip-Tc

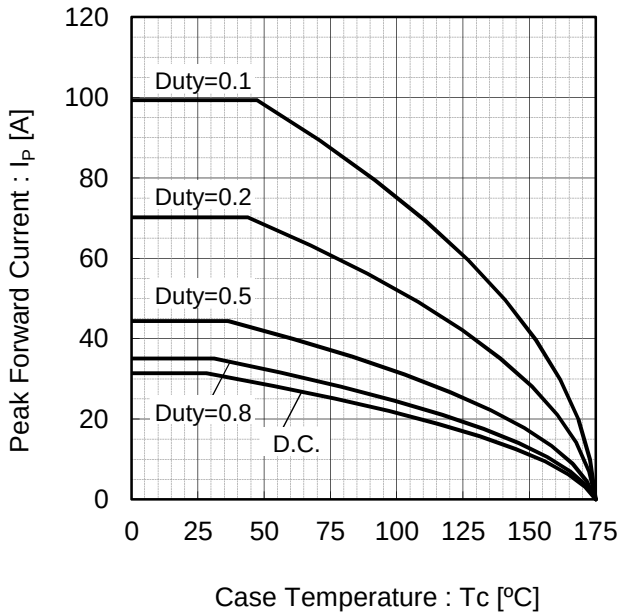
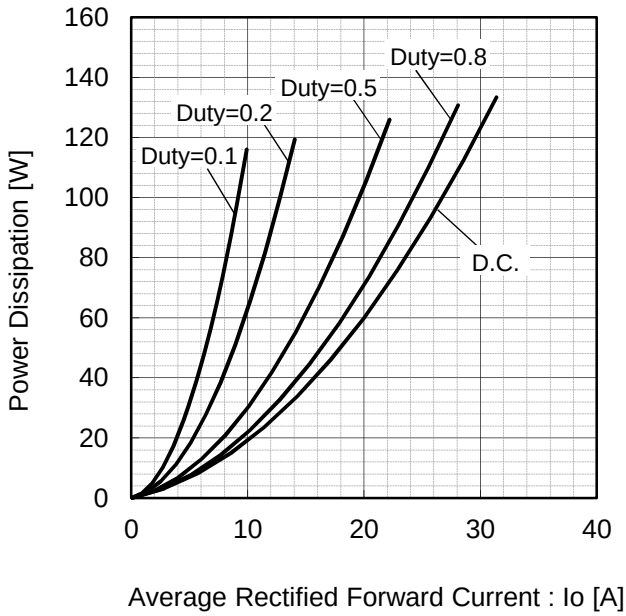


Fig.8 Io-Pf Characteristics



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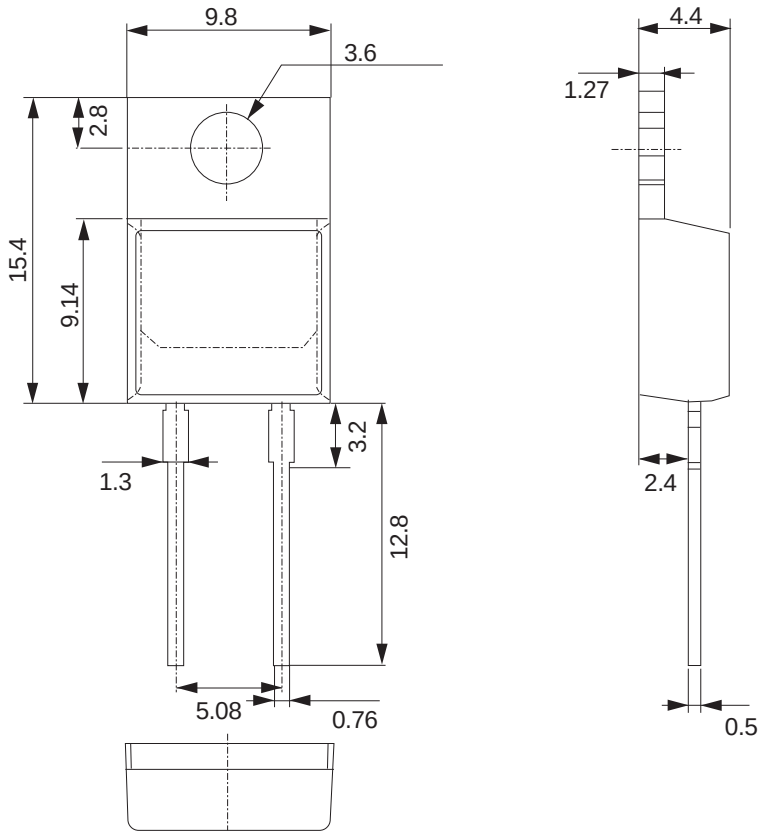
●**Dimensions** (Unit : mm)

TO-220AC



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