SiC Schottky Barrier Diode

SCS112AG

●Applications

Switching power supply

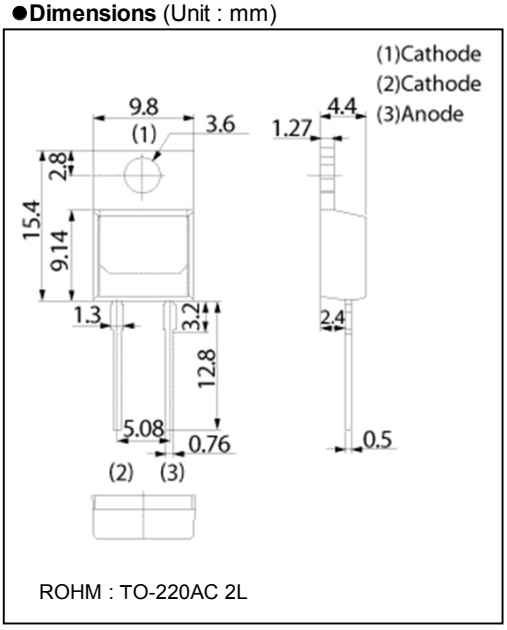
●Features

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

●Construction

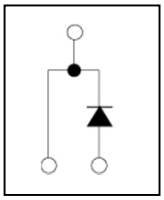
Silicon carbide epitaxial planer type

●Dimensions (Unit : mm)



ROHM : TO-220AC 2L

●Structure



●Absolute maximum ratings (Tj=25°C)

Parameter	Symbol	Limits	Unit
Reverse voltage (repetitive peak)	V_{RM}	600	V
Reverse voltage (DC)	V_R	600	V
Continuous forward current	I_F	12	A
Surge no repetitive forward current	I_{FSM}	41*2	A
		167*3	A
Repetitive peak forward current	I_{FRM}	48*4	A
Total power disspation	P_D	93*5	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	−55 to +175	°C
Junction to case	Rth(j-c)	1.6	°C / W

(*1)Tc=131°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

●Electrical characteristics (Tj=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
DC blocking voltage	V_{DC}	600	-	-	V	I_R=0.24mA
Forward voltage	V_F	-	1.5	1.7	V	I_F=12A,Tj=25°C
		-	1.82	-	V	I_F=12A,Tj=175°C
Reverse current	I_R	-	2.4	240	μA	V_R=600V,Tj=25°C
		-	48	-	μA	V_R=600V,Tj=175°C
Total capacitance	C	-	516	-	pF	V_R=1V,f=1MHz
		-	56	-	pF	V_R=600V,f=1MHz
Total capacitive charge	Qc	-	22	-	nC	V_R=400V,di/dt=350A/μs
Switching time	tc	-	16	-	ns	V_R=400V,di/dt=350A/μs

●**Electrical characteristic curves** (Ta=25°C)

Fig.1 V_F-I_F Characteristics

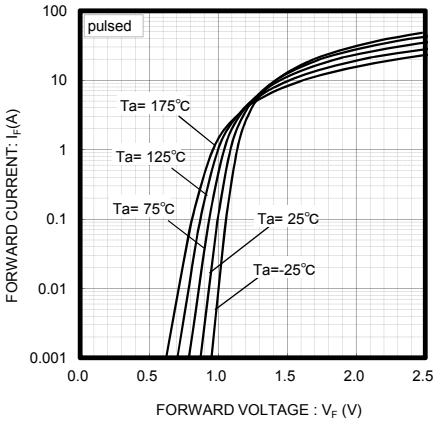


Fig.2 V_F-I_F Characteristics

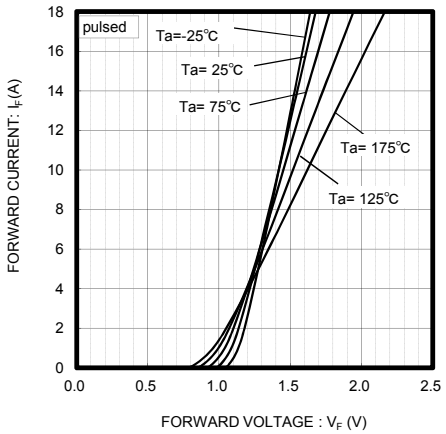


Fig.3 V_R-I_R Characteristics

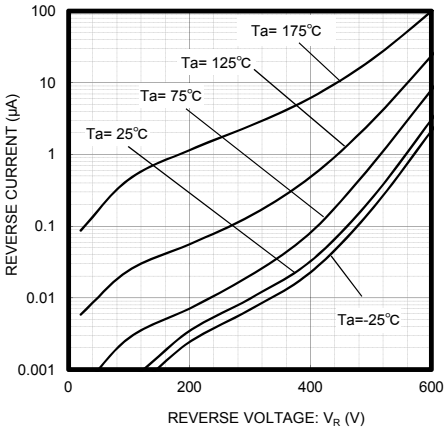


Fig.4 V_R-Ct Characteristics

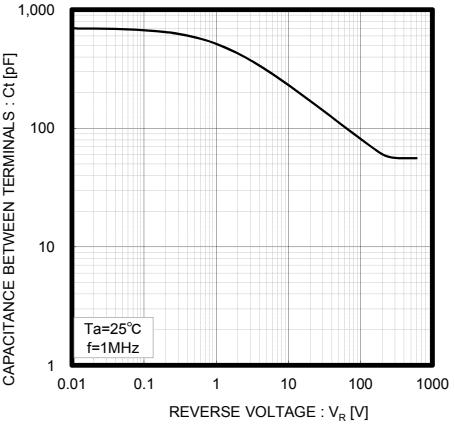


Fig.5 Thermal Resistance vs Pulse Width

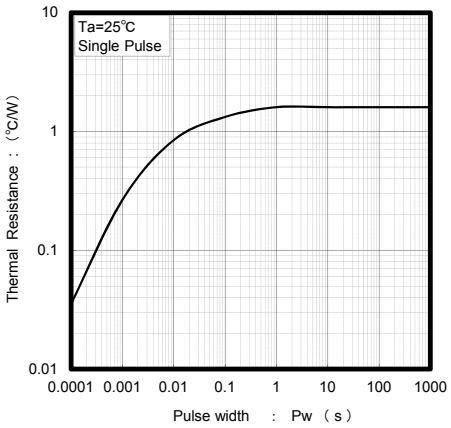


Fig.6 Power Dissipation

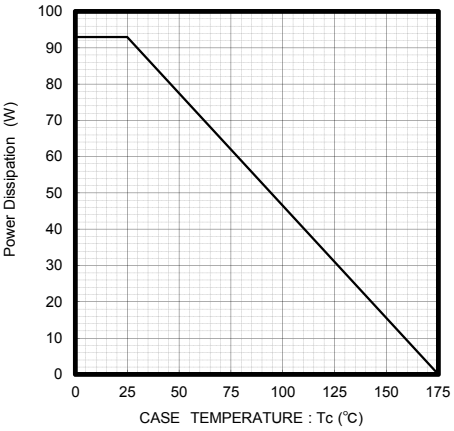


Fig.7 Derating Curve Ip-Tc

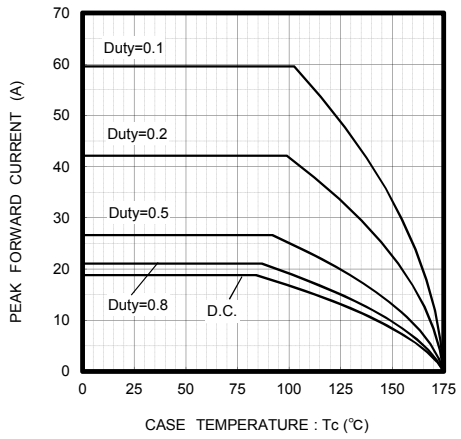
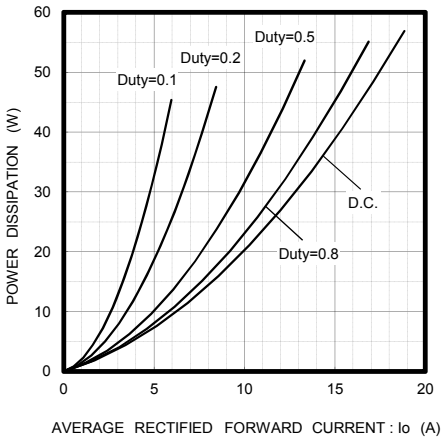


Fig.8 Io-Pf Characteristics



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