SiC Schottky Barrier Diode

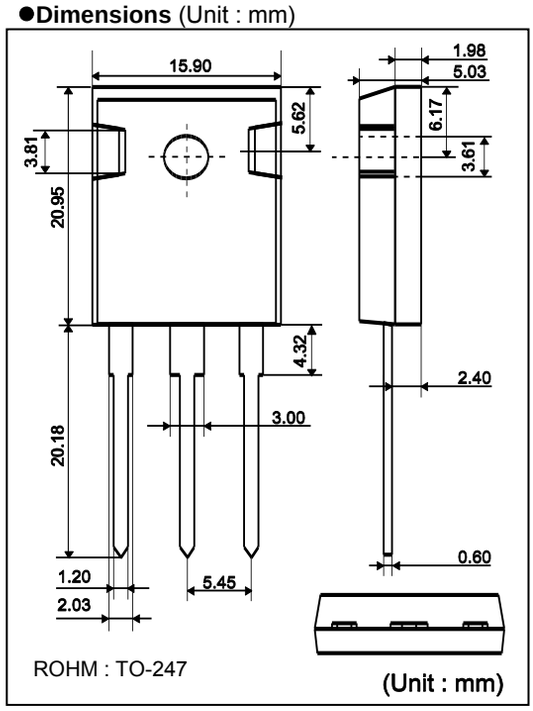
SCS120AE2

●Applications
Switching power supply

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

●Construction
Silicon carbide epitaxial planer type

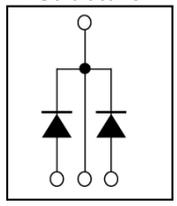
●Dimensions (Unit : mm)



ROHM : TO-247

(Unit : mm)

●Structure



●Absolute maximum ratings (Tj=25°C)

Parameter	Symbol	Limits	Unit
Reverse voltage (repetitive)	V_{RM}	600	V
Reverse voltage (DC)	V_R	600	V
Continuous forward current*6	I_F	10 / 20*1	A
Surge no repetitive forward current*6	I_{FSM}	40 / 80*2	A
		160 / 320*3	A
Repetitive peak forward current*6	I_{FRM}	42 / 82*4	A
Total power disspation*6	P_D	83 / 160*5	W
Junction temperature	Tj	175	°C
Storage temperature	Tstg	−55 to +175	°C
Junction to case*6	Rth(j-c)	1.8 / 0.93	°C / W

(*1)Tc=134°C / Tc=133°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 (*6)Per Leg / Per Device

●Electrical characteristics (Tj=25°C) [Per Leg]

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
DC blocking voltage	V_{DC}	600	-	-	V	I_R=0.2mA
Forward voltage	V_F	-	1.5	1.7	V	I_F=10A,Tj=25°C
		-	1.82	-	V	I_F=10A,Tj=175°C
Reverse current	I_R	-	2	200	μA	V_R=600V,Tj=25°C
		-	40	-	μA	V_R=600V,Tj=175°C
Total capacitance	C	-	430	-	pF	V_R=1V,f=1MHz
		-	47	-	pF	V_R=600V,f=1MHz
Total capacitive charge	Qc	-	16	-	nC	V_R=400V,di/dt=350A/μs
Switching time	tc	-	15	-	ns	V_R=400V,di/dt=350A/μs

Fig.1 V_F-I_F Characteristics (Per Leg)

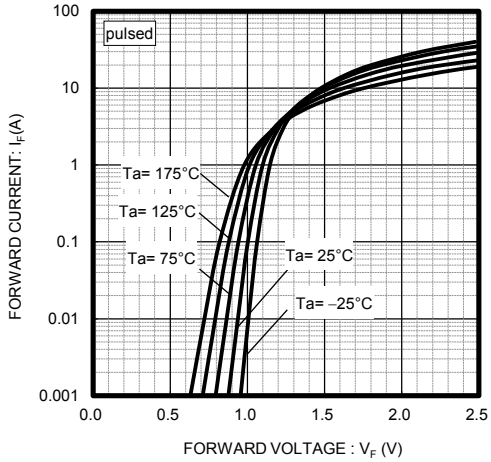


Fig.2 V_F-I_F Characteristics (Per Leg)

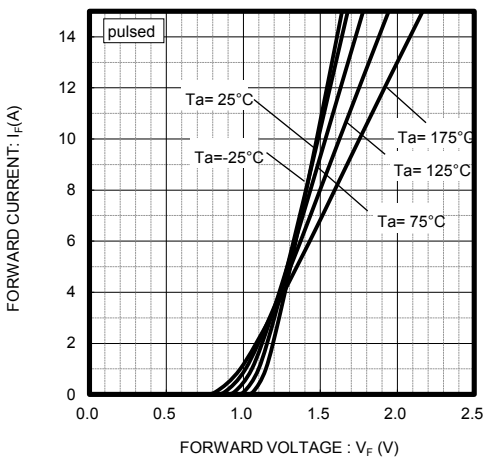


Fig.3 V_R-I_R Characteristics (Per Leg)

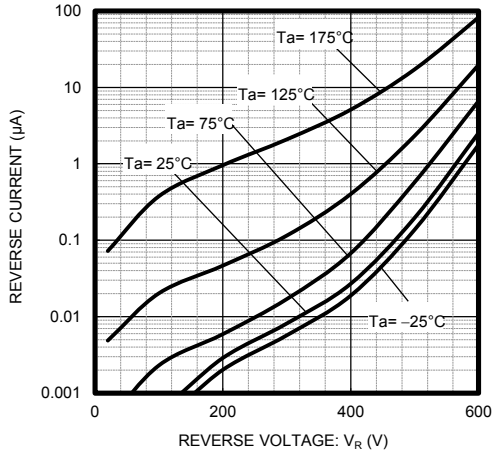


Fig.4 V_R-Ct Characteristics (Per Leg)

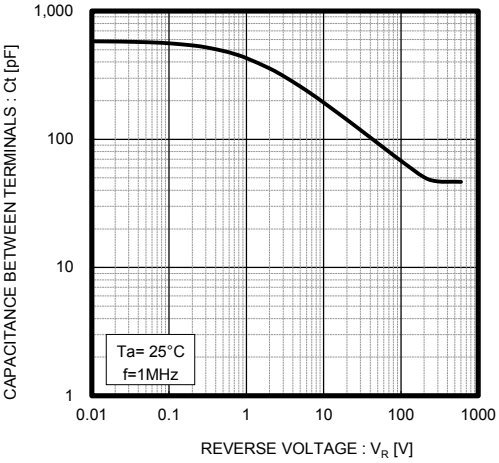


Fig.5 Thermal Resistance vs. Pulse Width

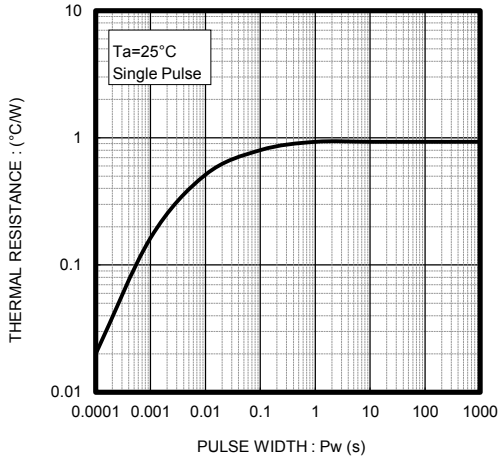


Fig.6 Power Dissipation

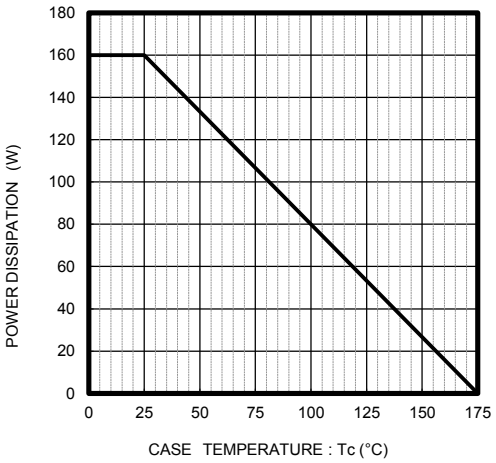


Fig.7 Derating Curve Ip-Tc

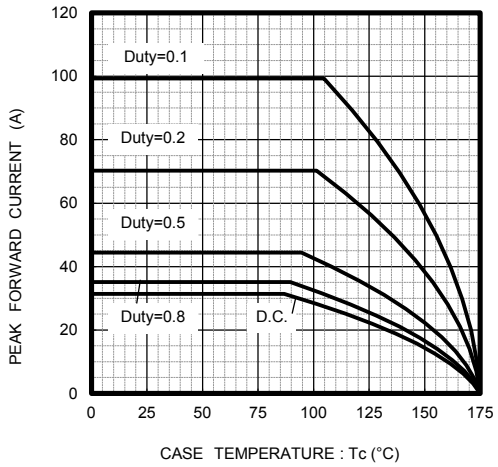
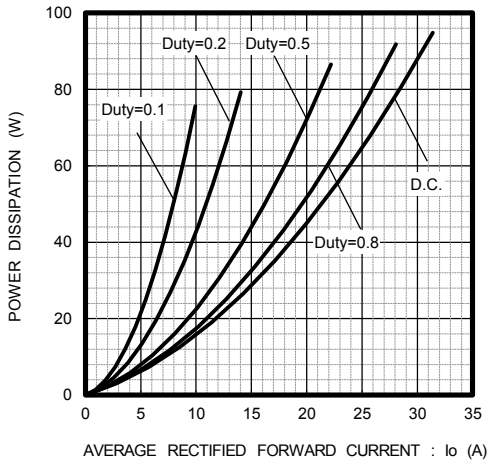


Fig.8 Io-Pf Characteristics



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