SiC Schottky Barrier Diode

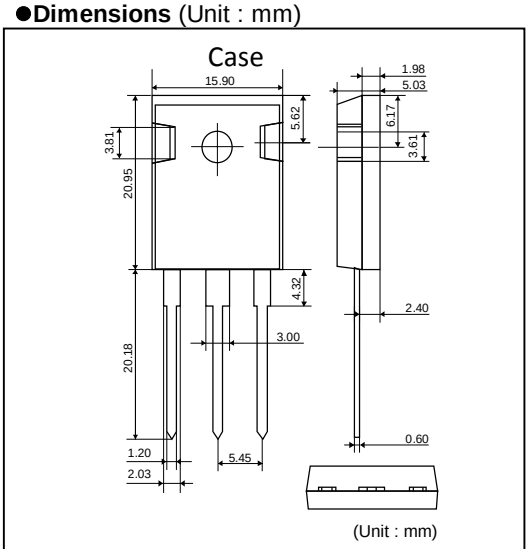
SCS120KE2

●Applications
General rectification

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

●Construction
Silicon carbide epitaxial planer type

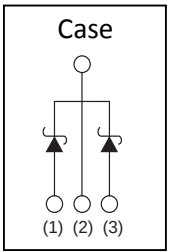
●Dimensions (Unit : mm)



ROHM : TO-247

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

●Structure



●Absolute maximum ratings (Tj=25°C)

Parameter	Symbol	Limits	Unit
Reverse voltage (repetitive peak)	V_{RM}	1200	V
Reverse voltage (DC)	V_R	1200	V
Continuous forward forward current *6	I_F	10/ 20 *1	A
Surge no repetitive forward current *6	I_{FSM}	45 / 90 *2	A
		190 / 380*3	A
Repetitive peak forward current *6	I_{FRM}	30 / 58*4	A
Total power disspation *6	P_D	115 / 210*5	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	−55 to +175	°C
Junction to case *6	Rth(j-c)	1.3 / 0.70	°C / W

(*1)Tc=135°C / 132°C (*2)PW=8.3ms sinusoidal,Tj=25°C
(*3)PW=10μs square,Tj=25°C (*4)Tc=120°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}	1200	-	-	V	I_R=0.2mA
Forward voltage	V_F	-	1.50	1.70	V	I_F=10A,Tj=25°C
		-	2.00	-	V	I_F=10A,Tj=175°C
Reverse current	I_R	-	10	200	μA	V_R=1200V,Tj=25°C
		-	120	-	μA	V_R=1200V,Tj=175°C
Total capacitance	C	-	650	-	pF	V_R=1V,f=1MHz
		-	50	-	pF	V_R=800V,f=1MHz
Total capacitive charge	Qc	-	34	-	nC	V_R=800V,di/dt=500A/μs
Switching time	tc	-	16	-	ns	V_R=800V,di/dt=500A/μs

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●Electrical characteristic curves (Ta=25°C)

Fig.1 V_F-I_F Characteristics [Per Leg]

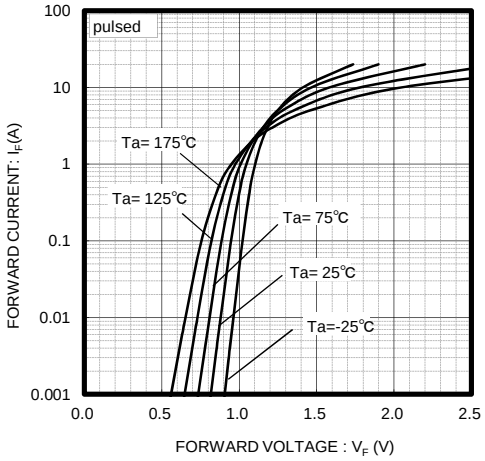

Fig.2 V_F-I_F Characteristics [Per Leg]

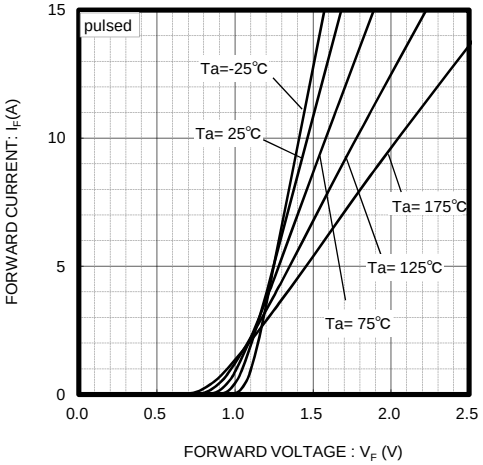

Fig.3 V_R-I_R Characteristics [Per Leg]

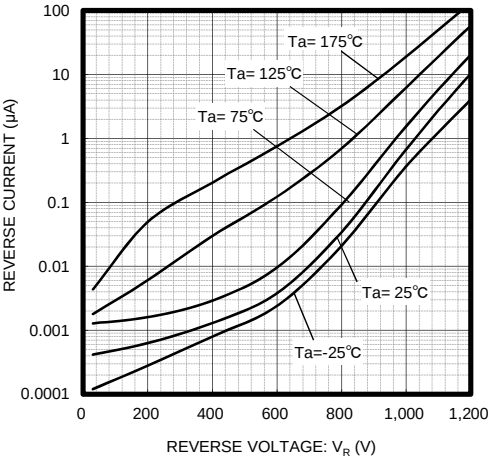

Fig.4 V_R-Ct Characteristics [Per Leg]

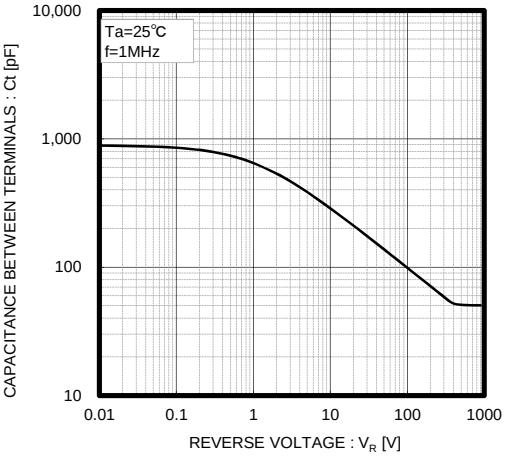

Fig.5 Thermal Resistance vs Pulse Width

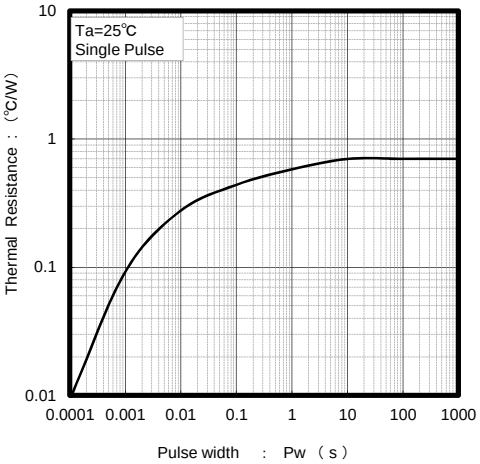

Fig.6 Power Dissipation

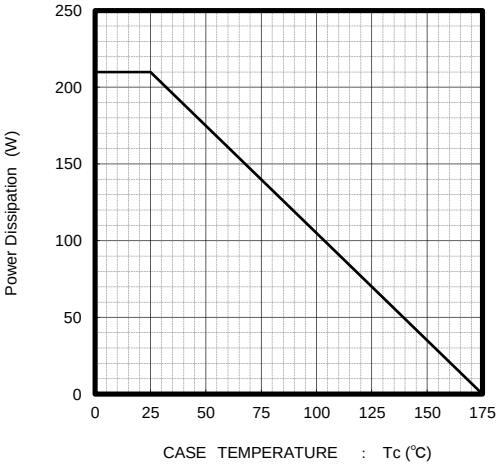

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Fig.7 Derating Curve Ip-Tc

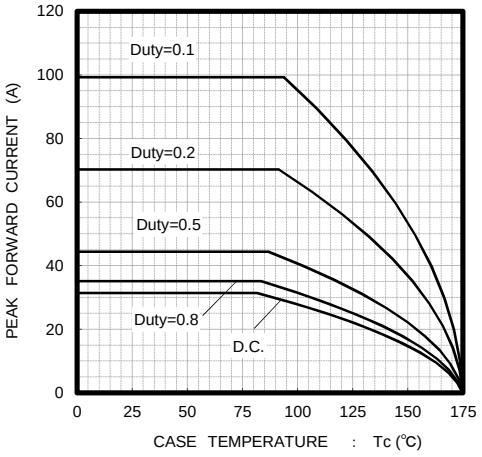
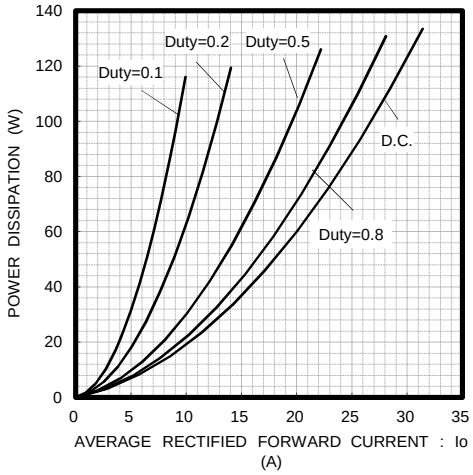


Fig.8 Io-Pf Characteristics



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