

SiC Schottky Barrier Diode

SCS112AM

●Applications

Switching power supply

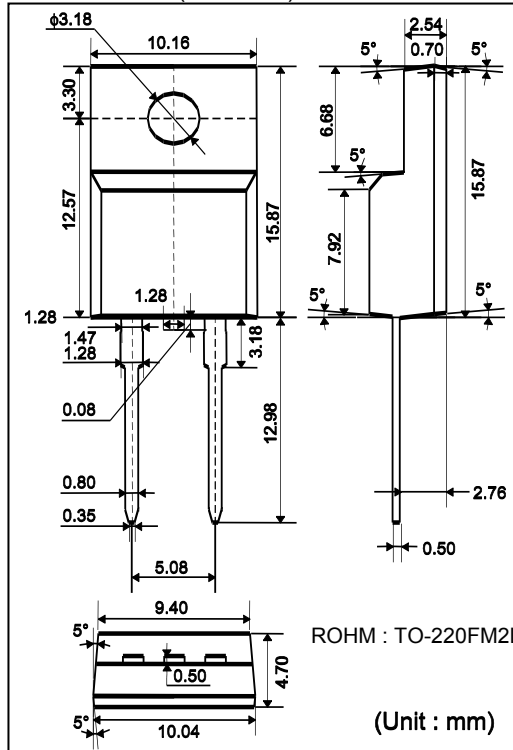
●Features

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

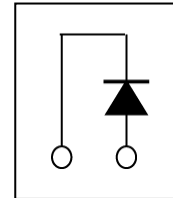
●Construction

Silicon carbide epitaxial planer type

●Dimensions (Unit : mm)



●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	I_F	12 ^{*1}	A
Surge no repetitive forward current	I_{FSM}	41 ^{*2}	A
		167 ^{*3}	A
Repetitive peak forward current	I_{FRM}	26 ^{*4}	A
Total power dissipation	P_D	30 ^{*5}	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C
Junction to case	$R_{th(j-c)}$	4.1	°C / W

(*1)Tc=60°C (*2)PW=8.3ms sinusoidal, Tj=25°C (*3)PW=10μs square, Tj=25°C

(*4)Tc=95°C, Tj=125°C, Duty cycle=10% (*5)Tc=25°C

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

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	$I_F=12A, T_j=25°C$
		-	1.6	-	V	$I_F=12A, T_j=150°C$
Reverse current	I_R	-	2.4	240	μA	$V_R=600V, T_j=25°C$
		-	12	-	μA	$V_R=600V, T_j=150°C$
Total capacitance	C	-	516	-	pF	$V_R=1V, f=1MHz$
		-	56	-	pF	$V_R=600V, f=1MHz$
Total capacitive charge	Q_c	-	22	-	nC	$V_R=400V, di/dt=350A/μs$
Switching time	t_c	-	16	-	ns	$V_R=400V, di/dt=350A/μs$

Fig.1 V_F-I_F Characteristics

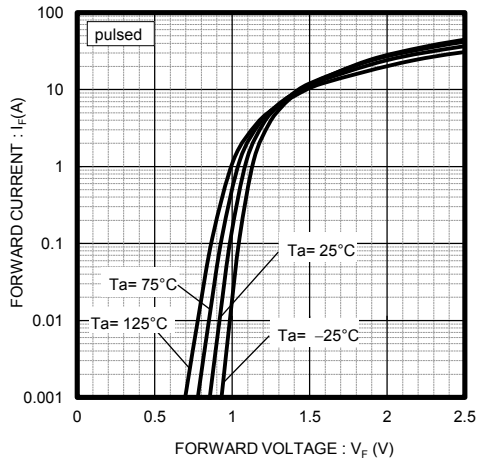


Fig.2 V_F-I_F Characteristics

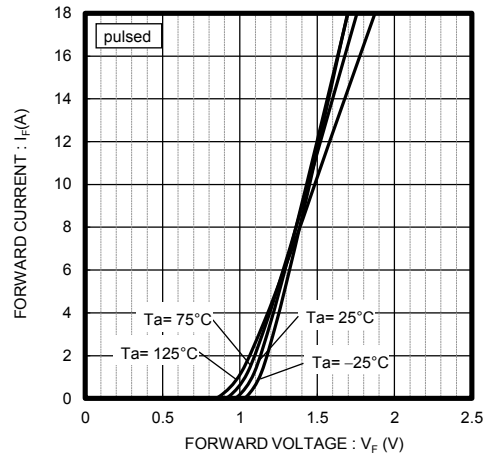


Fig.3 V_R-I_R Characteristics

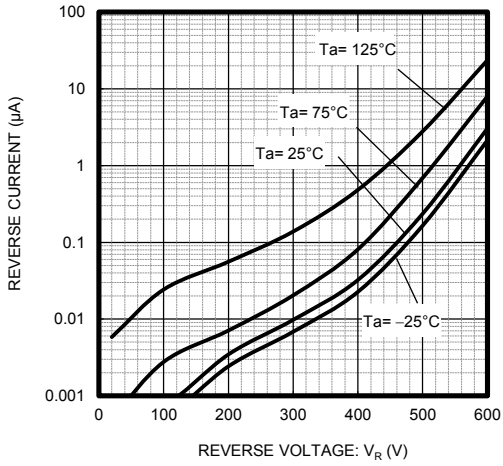


Fig.4 V_R-C_t Characteristics

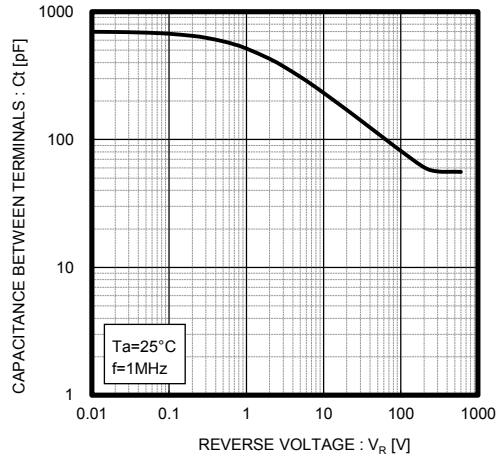


Fig.5 Thermal Resistance vs. Pulse Width

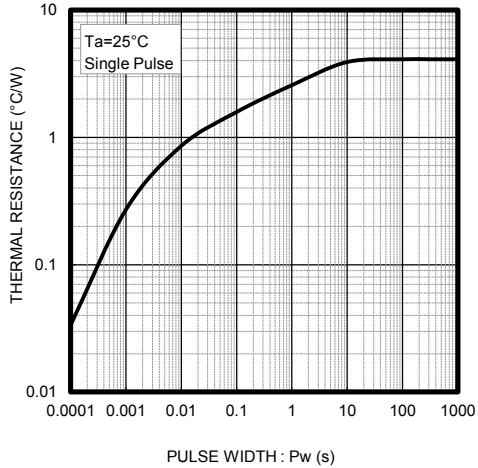
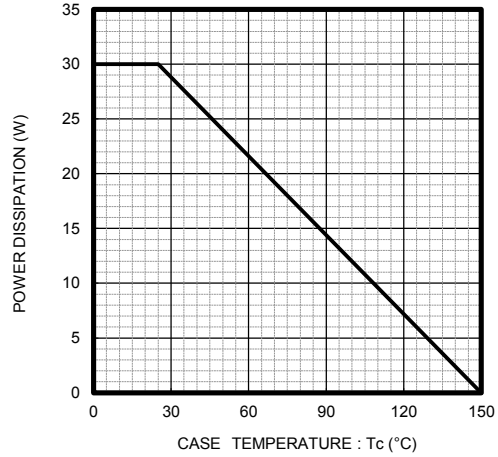
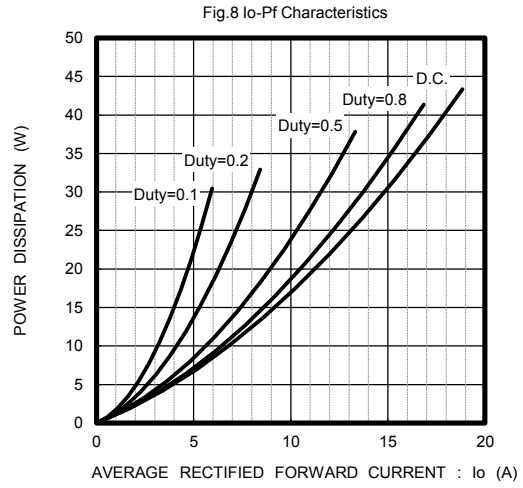
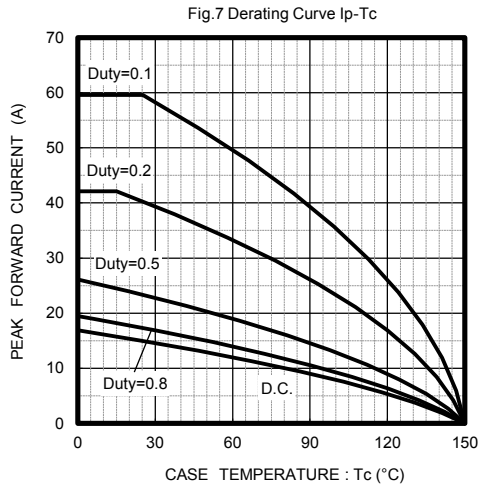


Fig.6 Power Dissipation





Notes

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