S6302

SiC Schottky Barrier Diode Bare Die Data Sheet

V_R	1200V
I_F	10A*[1]
Q_C	34nC

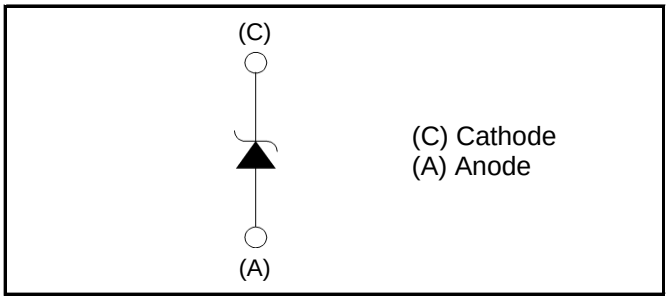
●Features

1) Shorter recovery time

2) Reduced temperature dependence

3) High-speed switching possible

●Inner circuit



●Construction

Silicon carbide epitaxial planer type

Schottky diode

●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	10*[1]	A
Surge no repetitive forward current	I_{FSM}	45*[2]	A
		190*[3]	A
		33*[4]	A
Repetitive peak forward current	I_{FRM}	46*[5]	A
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	−55 to +175	°C

*1 Limited by Tj *2 PW=8.3ms sinusoidal,Tj=25°C *3 PW=10μs square,Tj=25°C

*4 Pw=8.3ms sinusoidal, Tj=150°C *5 Duty cycle=10%, limited by Tj

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

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}	I_R =0.2mA	1200	-	-	V
Forward voltage	V_F	I_F=10A,Tj=25°C	-	1.4	1.6	V
		I_F=10A,Tj=150°C	-	1.8	-	V
		I_F=10A,Tj=175°C	-	1.9	-	V
Reverse current	I_R	V_R=1200V,Tj=25°C	-	10	200	μA
		V_R=1200V,Tj=150°C	-	80	-	μA
		V_R=1200V,Tj=175°C	-	130	-	μA
Total capacitance	C	V_R=1V,f=1MHz	-	550	-	pF
		V_R=800V,f=1MHz	-	42	-	pF
Total capacitive charge	Qc	V_R=800V,di/dt=500A/μs	-	34	-	nC
Switching time	tc	V_R=800V,di/dt=500A/μs	-	15	-	ns

●Electrical characteristic curves

Fig.1 V_F - I_F Characteristics

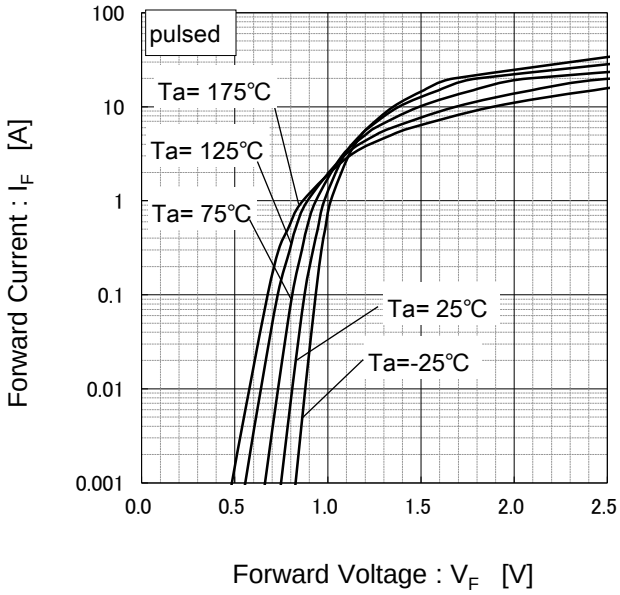


Fig.2 V_F - I_F Characteristics

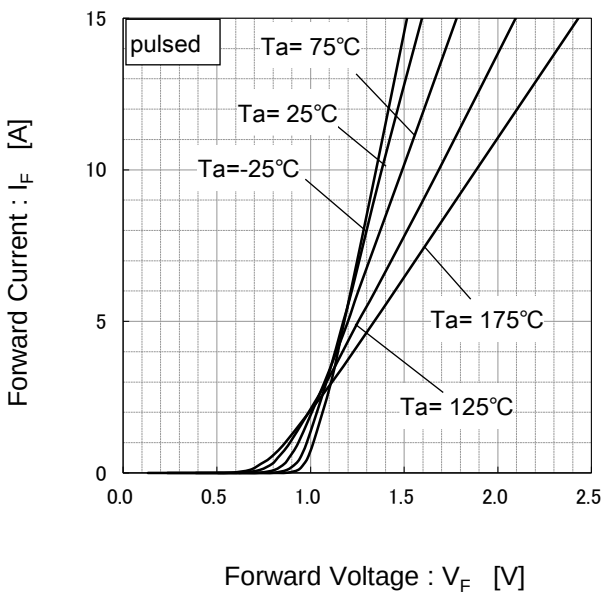


Fig.3 V_R - I_R Characteristics

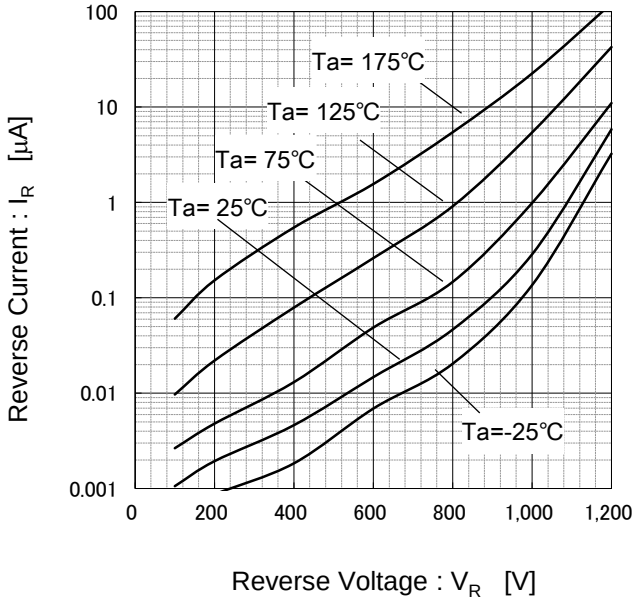
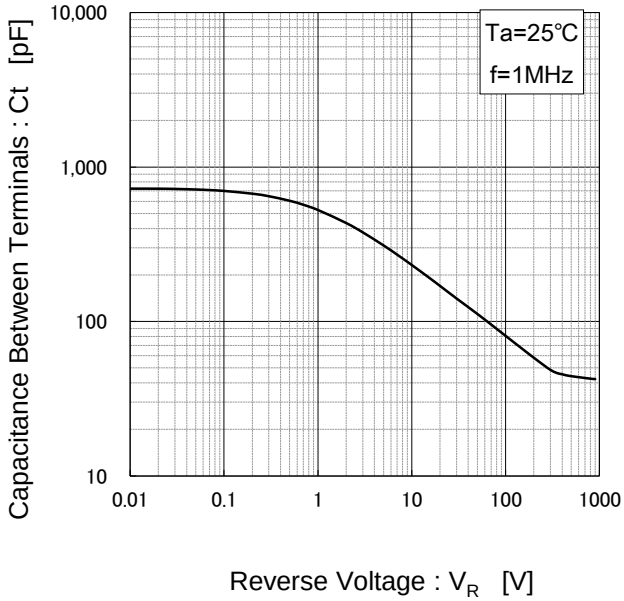


Fig.4 V_R-Ct Characteristics



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