

V_R	650V
I_F	10A
Q_C	15nC

●Features

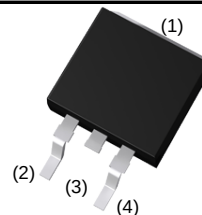
- 1) Shorter recovery time
- 2) Reduced temperature dependence
- 3) High-speed switching possible

●Construction

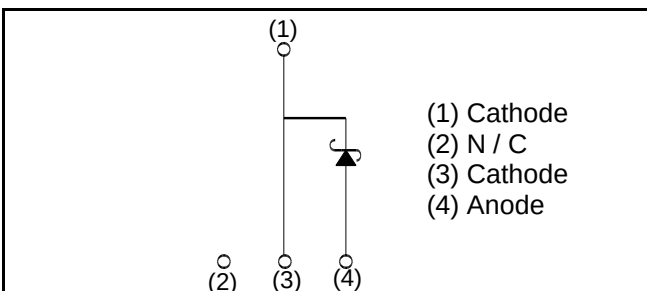
Silicon carbide epitaxial planer type

●Outline

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<TO-263AB>



●Inner circuit



●Packaging specifications

Type	Packaging	Embossed tape
	Reel size (mm)	330
	Tape width (mm)	24
	Basic ordering unit (pcs)	1,000
	Taping code	TLL
	Marking	SCS210AJ

●Absolute maximum ratings (Tj = 25°C)

Parameter	Symbol	Value	Unit
Reverse voltage (repetitive peak)	V_{RM}	650	V
Reverse voltage (DC)	V_R	650	V
Continuous forward current	I_F	10* ¹	A
Surge no repetitive forward current	I_{FSM}	40* ²	A
		150* ³	A
		31* ⁴	A
Repetitive peak forward current	I_{FRM}	42* ⁵	A
Total power dissipation	P_D	83* ⁶	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	-55 to +175	°C

*1 Tc=137°C *2 PW=8.3ms sinusoidal, Tj=25°C

*3 PW=10μs square, Tj=25°C *4 PW=8.3ms sinusoidal, Tj=150°C

*5 Tc=100°C, Tj=150°C, Duty cycle=10% *6 Tc=25°C

●Electrical characteristics (T_j = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V _{DC}	I _R =0.2mA	600	-	-	V
Forward voltage	V _F	I _F =10A, T _j =25°C	-	1.35	1.55	V
		I _F =10A, T _j =150°C	-	1.55	-	V
		I _F =10A, T _j =175°C	-	1.63	-	V
Reverse current	I _R	V _R =600V, T _j =25°C	-	2	200	μA
		V _R =600V, T _j =150°C	-	30	-	μA
		V _R =600V, T _j =175°C	-	70	-	μA
Total capacitance	C	V _R =1V, f=1MHz	-	365	-	pF
		V _R =600V, f=1MHz	-	37	-	pF
Total capacitive charge	Q _C	V _R =400V, di/dt=350A/μs	-	15	-	nC
Switching time	t _c	V _R =400V, di/dt=350A/μs	-	15	-	ns

●Thermal characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Thermal resistance	R _{th(j-c)}	-	-	1.5	1.8	°C/W

●Electrical characteristic curves

Fig.1 $V_F - I_F$ Characteristics

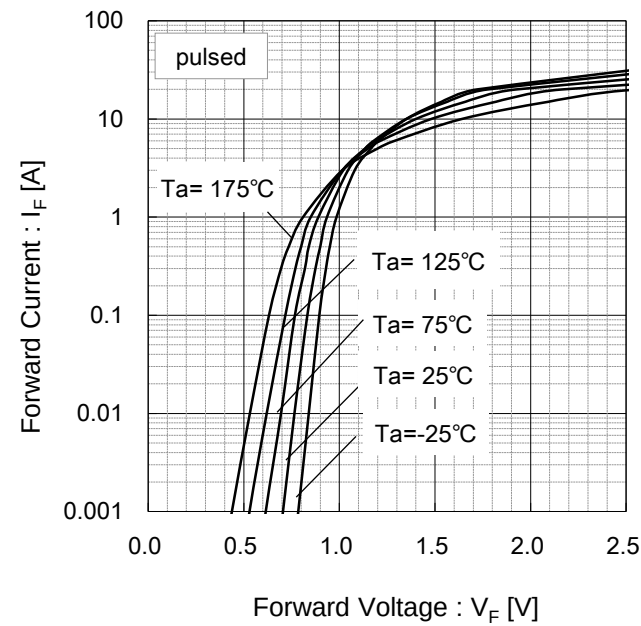


Fig.2 $V_F - I_F$ Characteristics

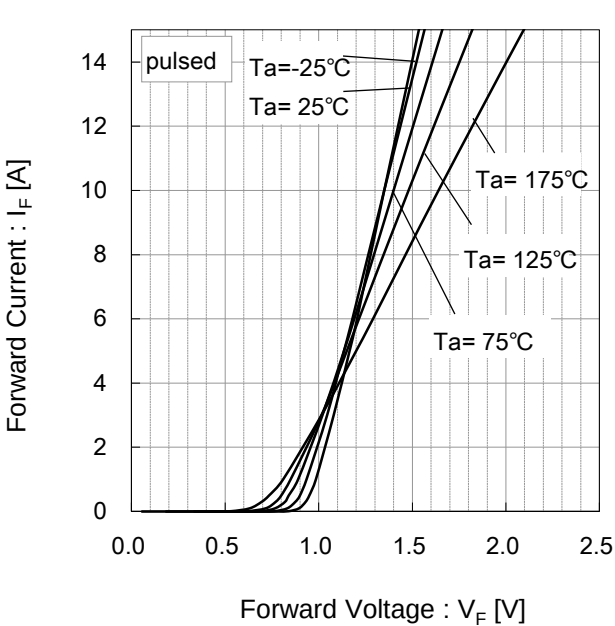


Fig.3 $V_R - I_R$ Characteristics

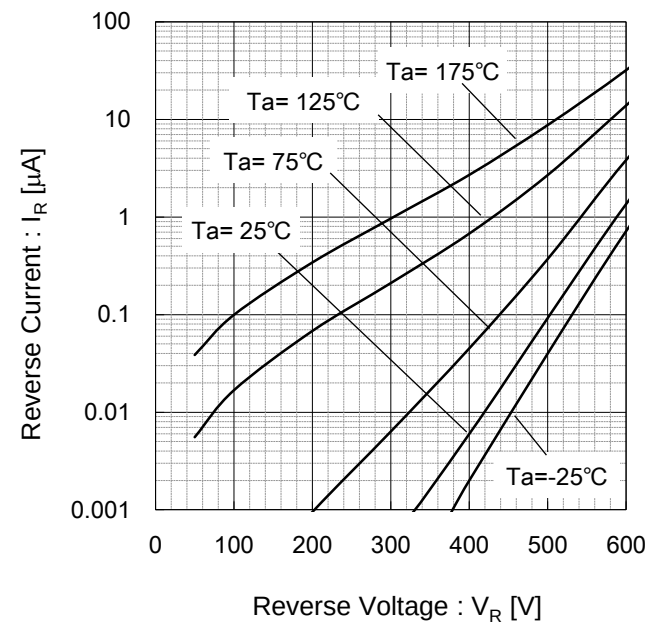
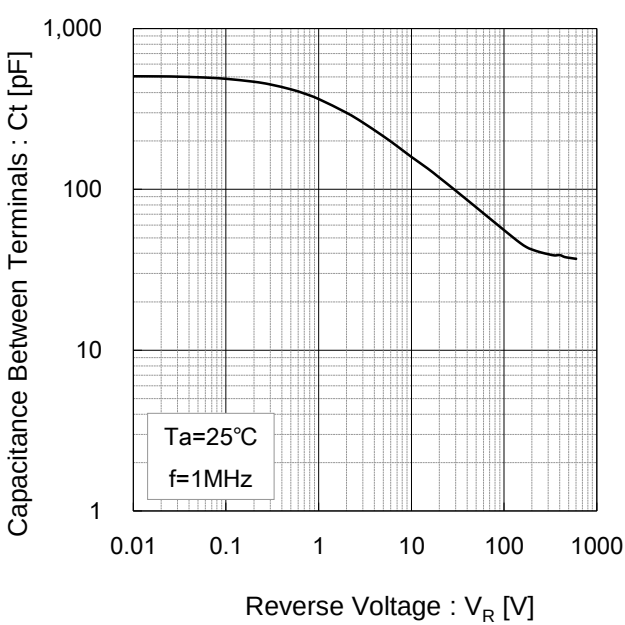


Fig.4 $V_R - C_t$ Characteristics



●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width

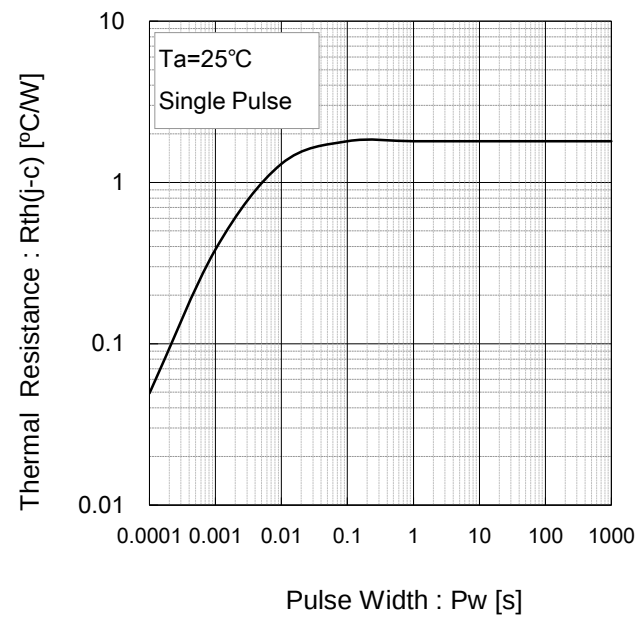


Fig.6 Power Dissipation

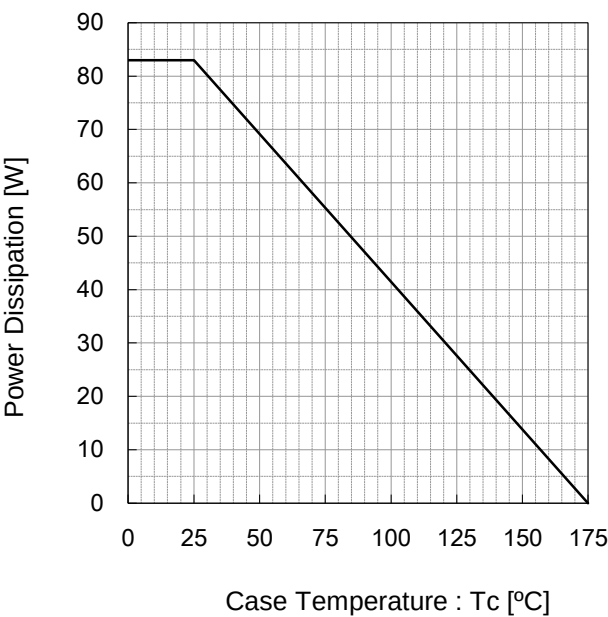


Fig.7 Derating Curve I_p - T_c

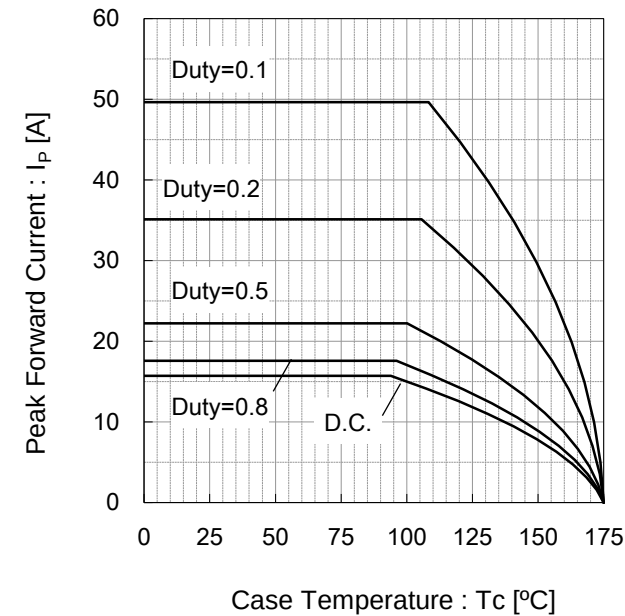
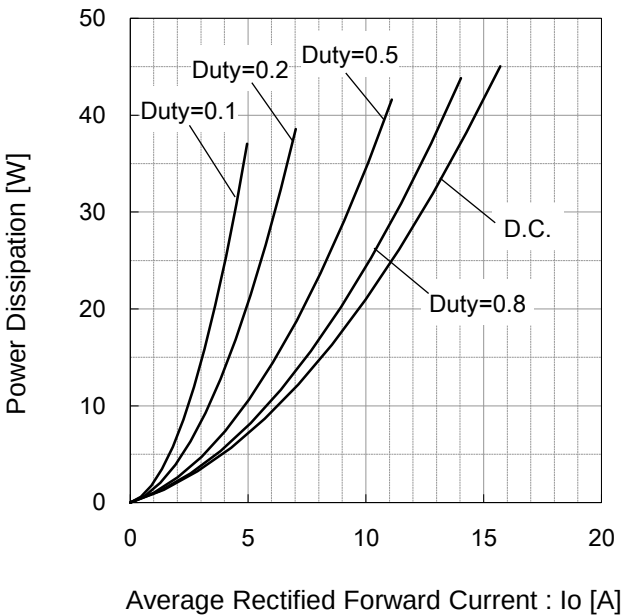
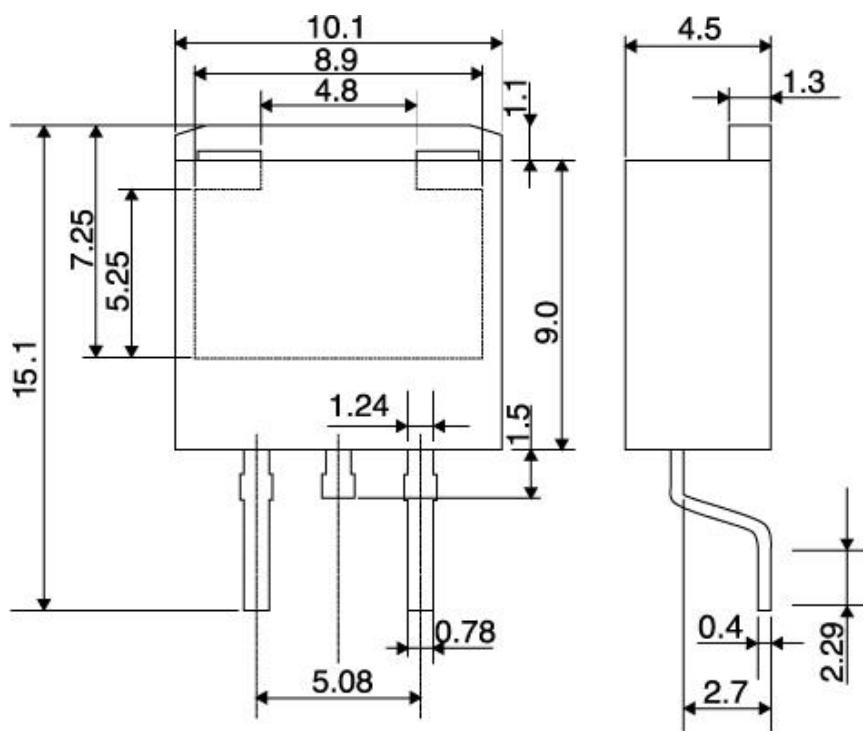


Fig.8 I_o - P_f Characteristics



●Dimensions (Unit : mm)

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