

V_R	1200V
I_F	15A/30A*
Q_C	51nC

*(Per leg / Both legs)

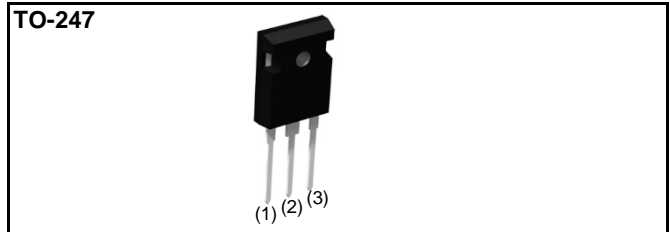
●Features

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

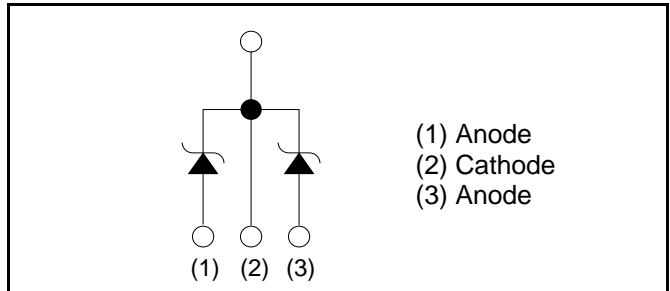
●Construction

Silicon carbide epitaxial planer type

●Outline



●Inner circuit



●Packaging specifications

Type	Packaging	Tube
	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	30
	Packing code	C
	Marking	SCS230KE2

●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 ^{*7}	I_F	15/30 ^{*1}	A
Surge no repetitive forward current ^{*7}	I_{FSM}	65/130 ^{*2}	A
		240/480 ^{*3}	A
		49/98 ^{*4}	A
Repetitive peak forward current ^{*7}	I_{FRM}	62/120 ^{*5}	A
Total power dissipation ^{*7}	P_D	180/360 ^{*6}	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	-55 to +175	°C

*1 Tc=139°C/Tc=139°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 *7 Per leg / Both legs

●Electrical characteristics (T_j = 25°C) (Per leg)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V _{DC}	I _R =0.3mA	1200	-	-	V
Forward voltage	V _F	I _F =15A, T _j =25°C	-	1.4	1.6	V
		I _F =15A, T _j =150°C	-	1.8	-	V
		I _F =15A, T _j =175°C	-	1.9	-	V
Reverse current	I _R	V _R =1200V, T _j =25°C	-	15	300	μA
		V _R =1200V, T _j =150°C	-	120	-	μA
		V _R =1200V, T _j =175°C	-	195	-	μA
Total capacitance	C	V _R =1V, f=1MHz	-	790	-	pF
		V _R =800V, f=1MHz	-	63	-	pF
Total capacitive charge	Q _C	V _R =800V, di/dt=500A/μs	-	51	-	nC
Switching time	t _c	V _R =800V, di/dt=500A/μs	-	18	-	ns

●Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance	R _{th(j-c)}	Per Leg	-	0.67	0.81	°C/W
		Both Legs	-	0.34	0.41	°C/W

●Electrical characteristic curves

Fig.1 $V_F - I_F$ Characteristics (per leg)

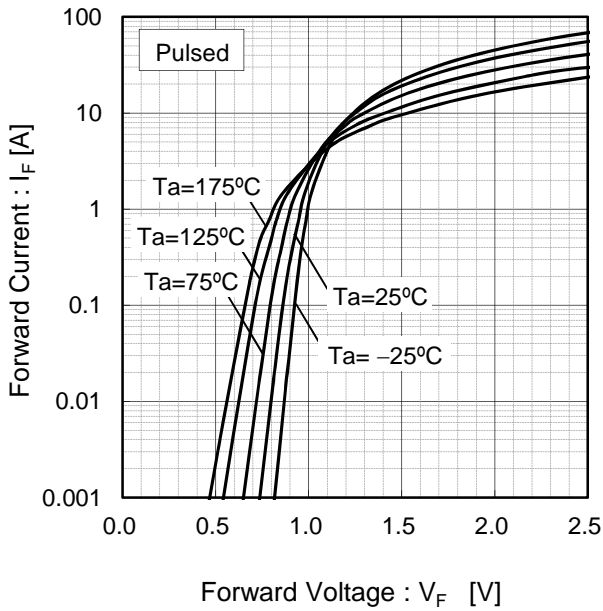


Fig.2 $V_F - I_F$ Characteristics (per leg)

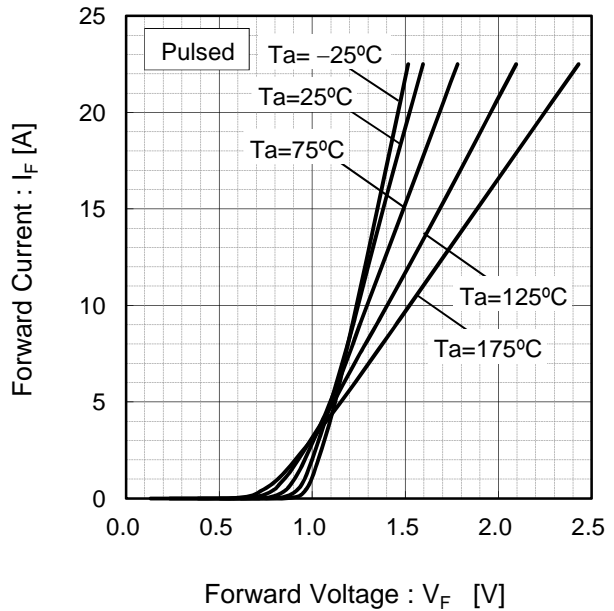


Fig.3 $V_R - I_R$ Characteristics (per leg)

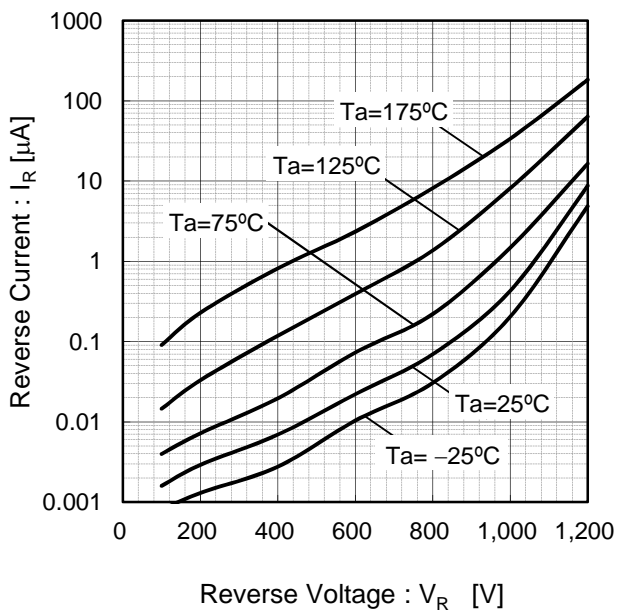
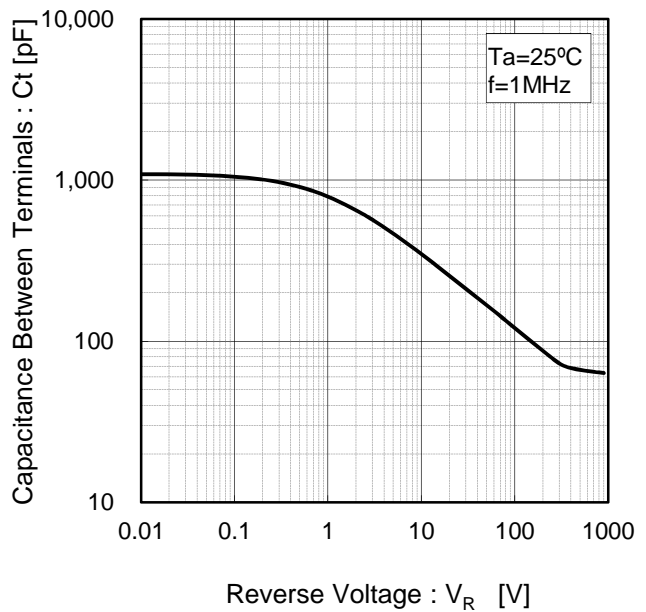


Fig.4 $V_R - C_t$ Characteristics (per leg)



●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width (per leg)

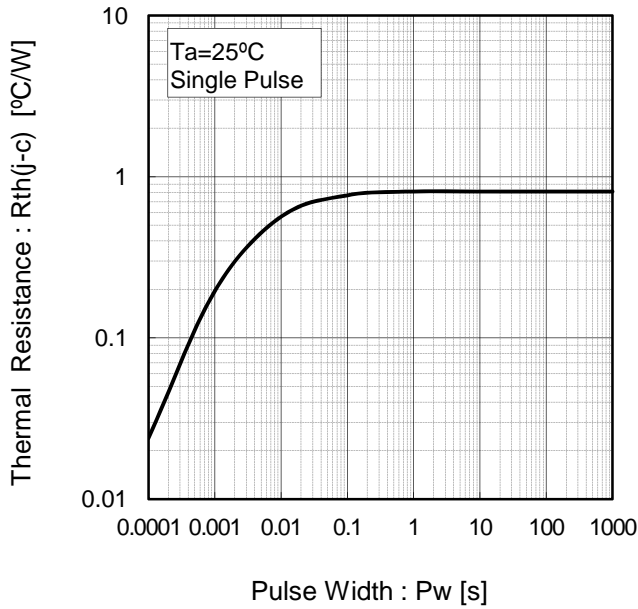


Fig.6 Power Dissipation (per leg)

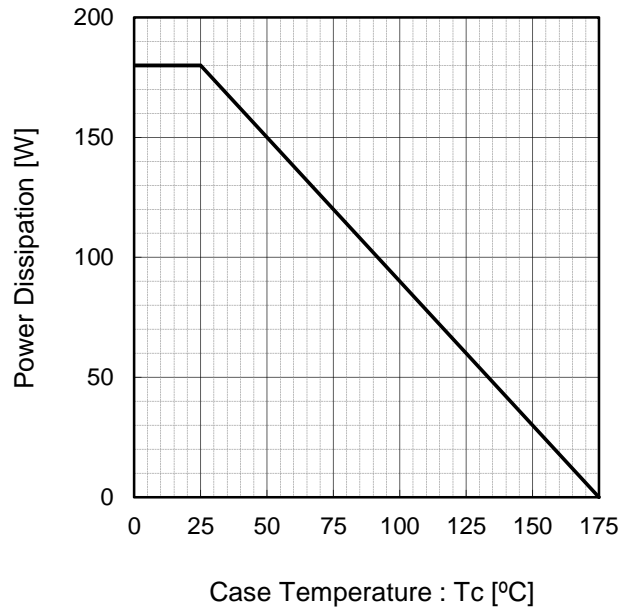


Fig.7 I_p - T_c Derating Curve (per leg)

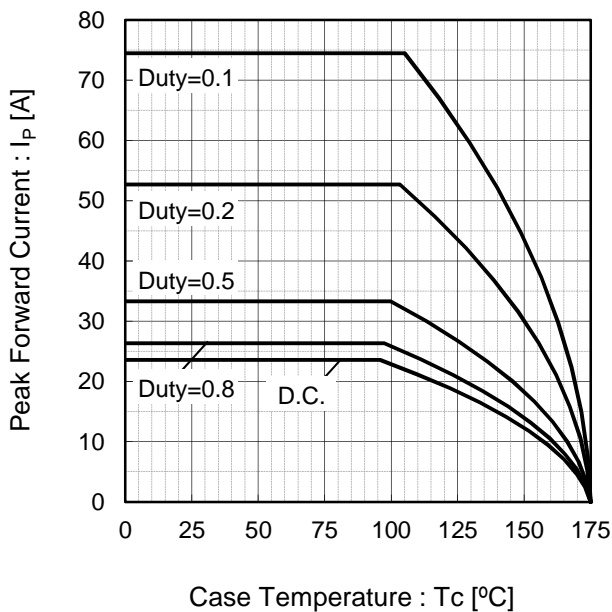
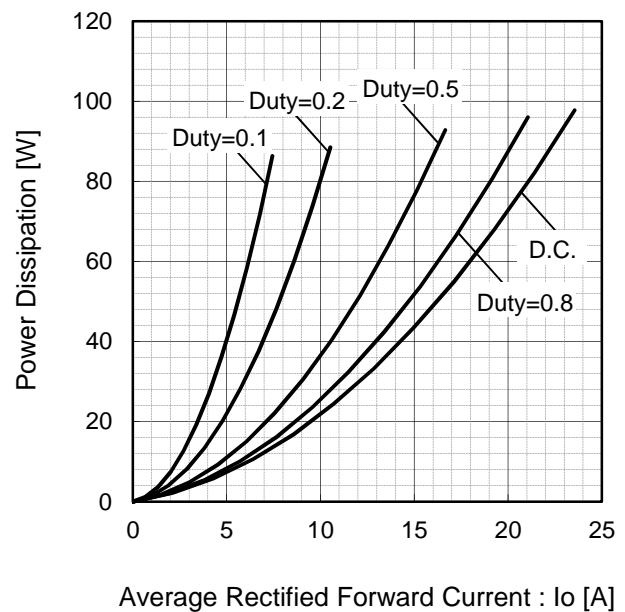


Fig.8 I_o - P_f Characteristics (per leg)



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