



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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V_R	650V
I_F	20A
Q_C	31nC

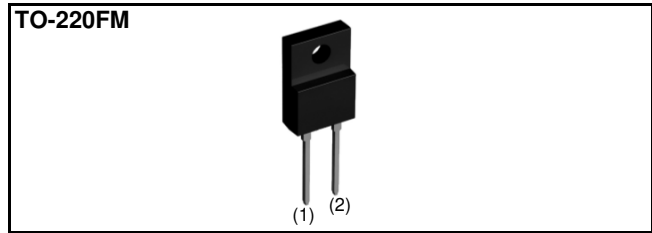
●Features

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

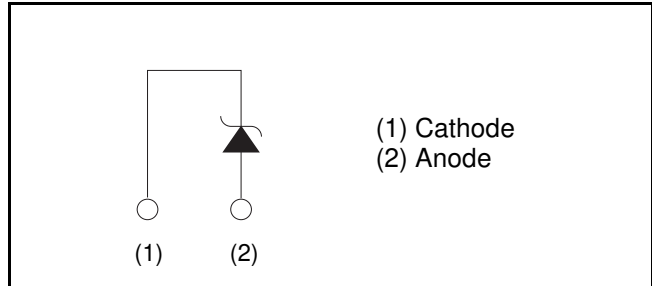
●Construction

Silicon carbide epitaxial planer type

●Outline



●Inner circuit



●Packaging specifications

Type	Packaging	Tube
	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	50
	Packing code	C
	Marking	SCS220AM

●Absolute maximum ratings ($T_j = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Reverse voltage (repetitive peak)	V_{RM}	650	V
Reverse voltage (DC)	V_R	650	V
Continuous forward current	I_F	20 ^{*1}	A
Surge no repetitive forward current	I_{FSM}	71 ^{*2}	A
		260 ^{*3}	A
		56 ^{*4}	A
Repetitive peak forward current	I_{FRM}	39 ^{*5}	A
Total power dissipation	P_D	40 ^{*6}	W
Junction temperature	T_j	175	°C
Range of storage temperature	T_{stg}	-55 to +175	°C

*1 $T_c=97^\circ\text{C}$ DUTY CYCLE=50%,square *2 $PW=8.3\text{ms}$ sinusoidal, $T_j=25^\circ\text{C}$ *3 $PW=10\mu\text{s}$ square, $T_j=25^\circ\text{C}$ *4 $PW=8.3\text{ms}$ sinusoidal, $T_j=150^\circ\text{C}$ *5 $T_c=100^\circ\text{C}$, $T_j=150^\circ\text{C}$, Duty cycle=10%
*6 $T_c=25^\circ\text{C}$

●Electrical characteristics (T_j = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V _{DC}	I _R =0.4mA	600	-	-	V
Forward voltage	V _F	I _F =20A, T _j =25°C	-	1.35	1.55	V
		I _F =20A, T _j =150°C	-	1.55	-	V
		I _F =20A, T _j =175°C	-	1.63	-	V
Reverse current	I _R	V _R =600V, T _j =25°C	-	4	400	μA
		V _R =600V, T _j =150°C	-	60	-	μA
		V _R =600V, T _j =175°C	-	140	-	μA
Total capacitance	C	V _R =1V, f=1MHz	-	730	-	pF
		V _R =600V, f=1MHz	-	74	-	pF
Total capacitive charge	Q _c	V _R =400V, di/dt=350A/μs	-	31	-	nC
Switching time	t _c	V _R =400V, di/dt=350A/μs	-	19	-	ns

●Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance	R _{th(j-c)}	-	-	3.2	3.7	°C/W

●Electrical characteristic curves

Fig.1 $V_F - I_F$ Characteristics

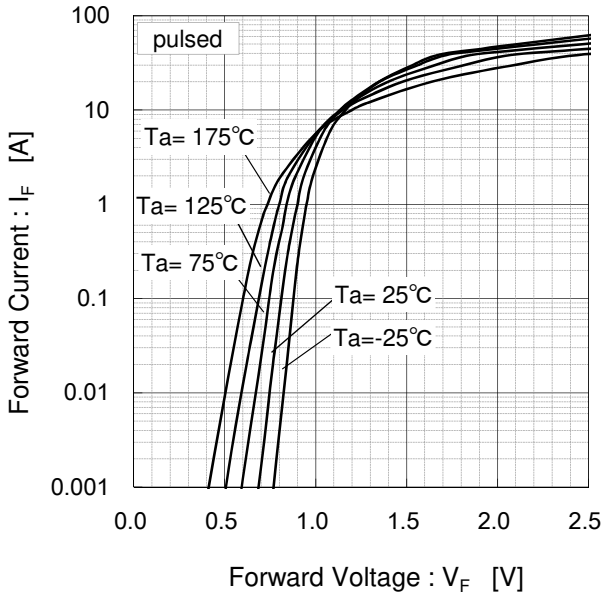


Fig.2 $V_F - I_F$ Characteristics

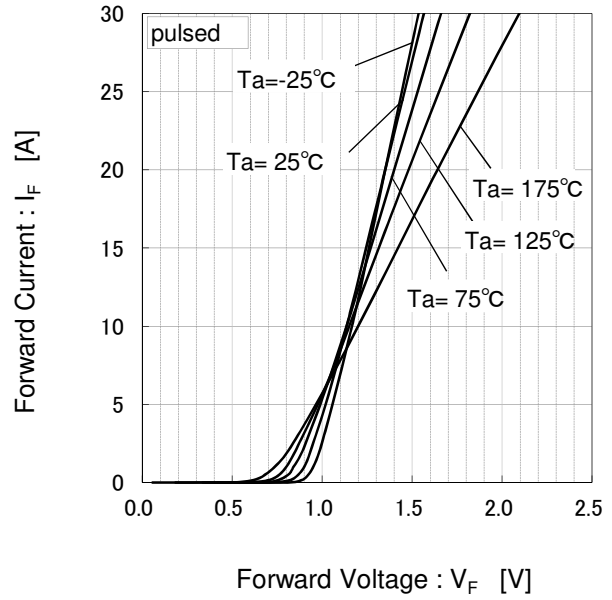


Fig.3 $V_R - I_R$ Characteristics

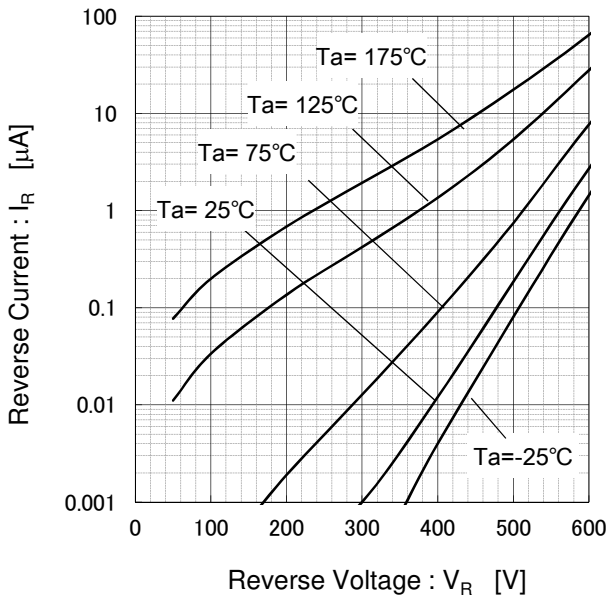
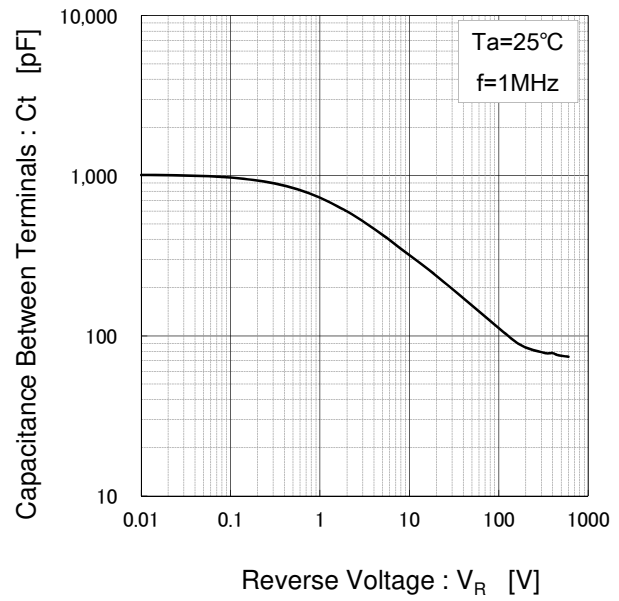


Fig.4 $V_R - C_t$ Characteristics



●Electrical characteristic curves

Fig.5 Thermal Resistance vs. Pulse Width

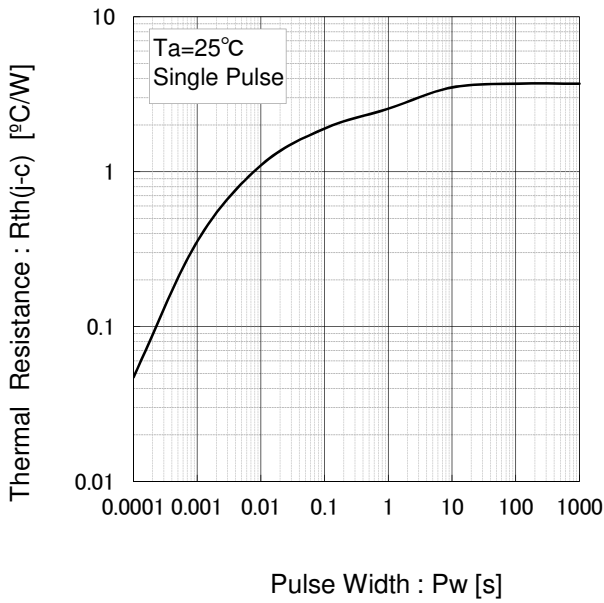


Fig.6 Power Dissipation

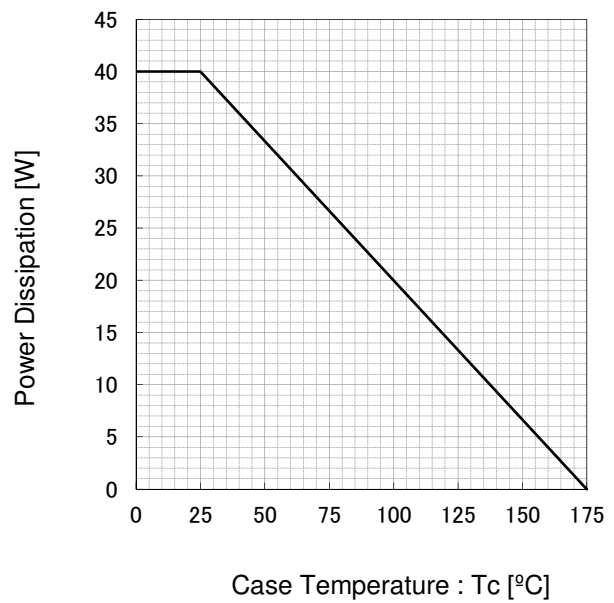


Fig.7 Derating Curve I_p - T_c

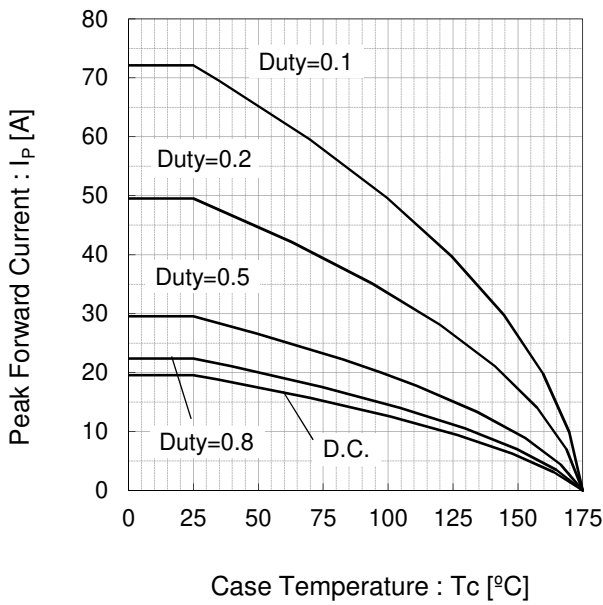
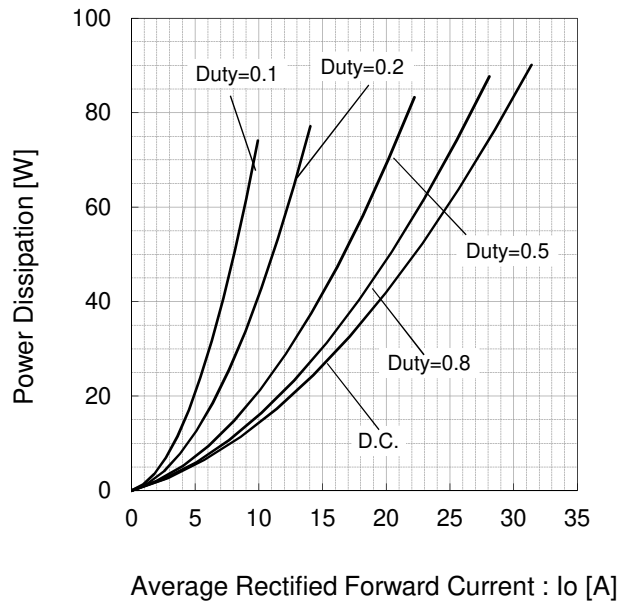
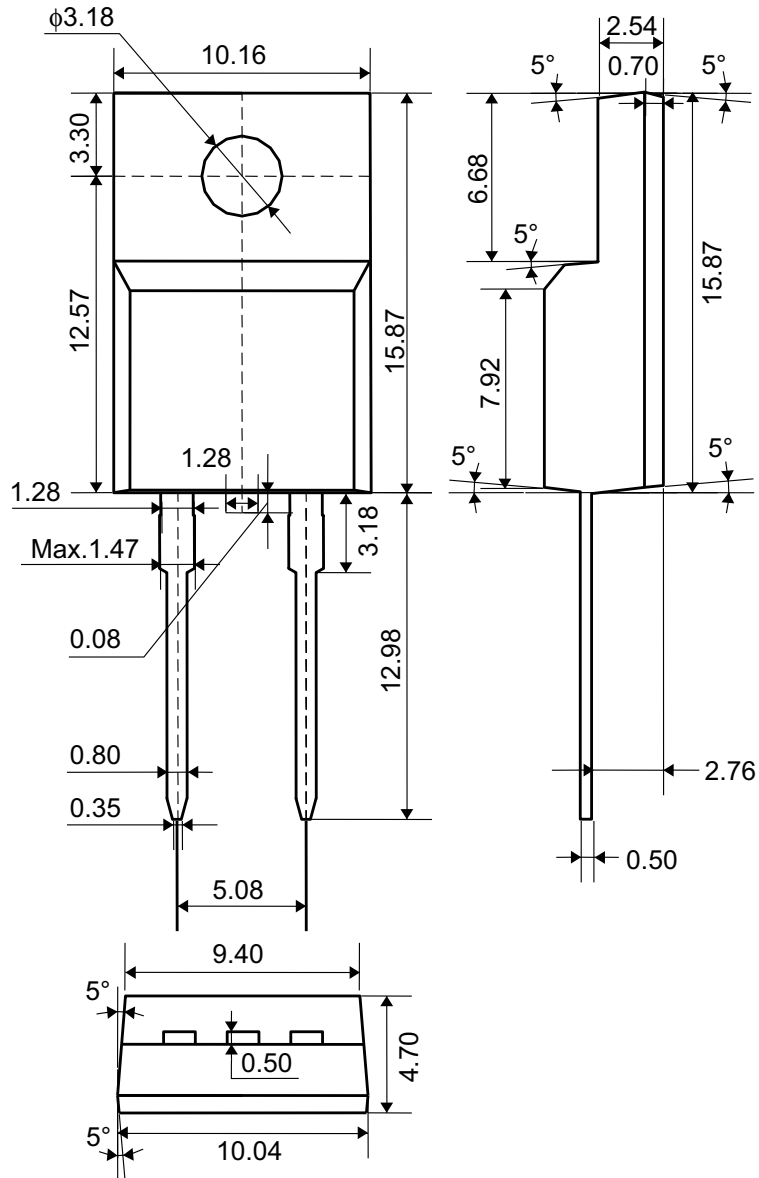


Fig.8 I_o - P_f Characteristics



●Dimensions (Unit : mm)

TO-220FM (2pin)



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