HFZT

SCS210KE2HR

SiC Schottky Barrier Diode

VOLTAGE RANGE: 1200V

Features

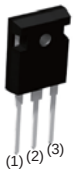
- Shorter recovery time
- Reduced temperature dependence
- High-speed switching possible

MECHANICAL DATA

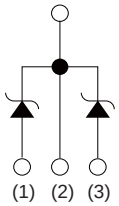
- Case style:TO-247 molded plastic
- Mounting position:any

●AEC-Q101 Qualified

TO-247



●Inner circuit



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

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	5/10*1	A
Surge no repetitive forward current*7	I_{FSM}	23/46*2	A
		87/170*3	A
		18/36*4	A
Repetitive peak forward current*7	I_{FRM}	24/49*5	A
Total power disspation*7	P_D	80/170*6	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	−55 to +175	°C

*1 Tc=148°C/Tc=150°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 (Tj = 25°C) (Per leg)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}	I_R =0.1mA	1200	-	-	V
Forward voltage	V_F	I_F=5A,Tj=25°C	-	1.4	1.6	V
		I_F=5A,Tj=150°C	-	1.8	-	V
		I_F=5A,Tj=175°C	-	1.9	-	V
Reverse current	I_R	V_R=1200V,Tj=25°C	-	5	100	μA
		V_R=1200V,Tj=150°C	-	40	-	μA
		V_R=1200V,Tj=175°C	-	65	-	μA
Total capacitance	C	V_R=1V,f=1MHz	-	270	-	pF
		V_R=800V,f=1MHz	-	21	-	pF
Total capacitive charge	Qc	V_R=800V,di/dt=500A/μs	-	17	-	nC
Switching time	tc	V_R=800V,di/dt=500A/μs	-	15	-	ns

●Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance	$R_{th(j-c)}$	Per Leg	-	1.5	1.8	°C/W
		Both Legs	-	0.75	0.86	°C/W

RATINGS AND CHARACTERISTIC CURVES

● Electrical characteristic curves

Fig.1 V_F - I_F Characteristics (Per leg)

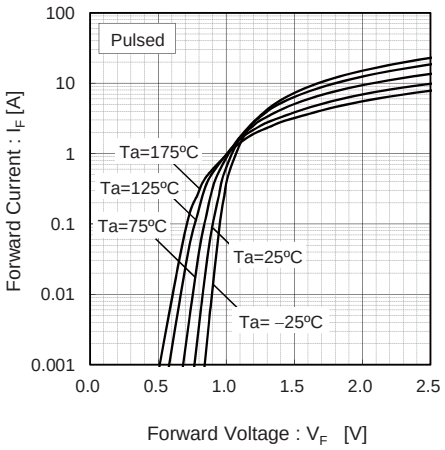


Fig.2 V_F - I_F Characteristics (Per leg)

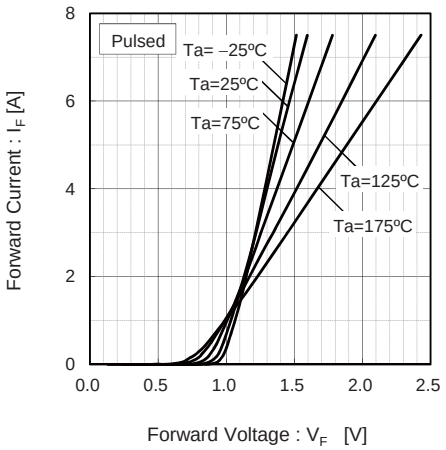


Fig.3 V_R - I_R Characteristics (Per leg)

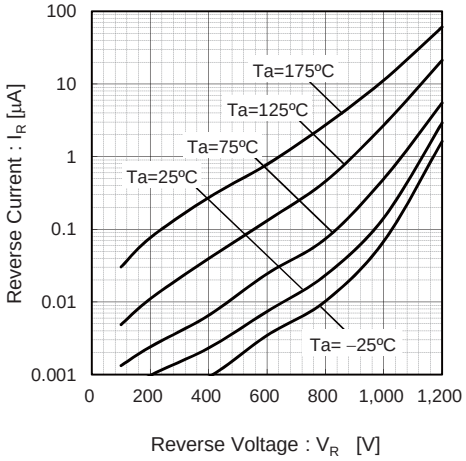


Fig.4 V_R-Ct Characteristics (Per leg)

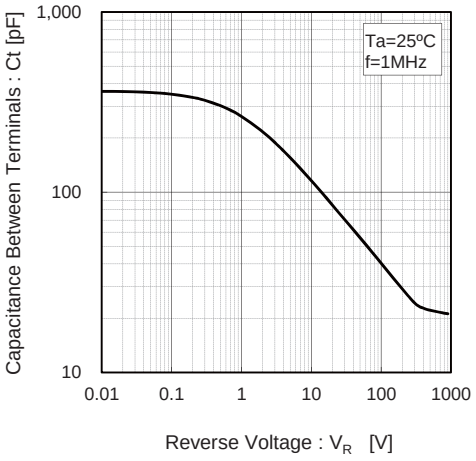


Fig.5 Thermal Resistance vs. Pulse Width (Per leg)

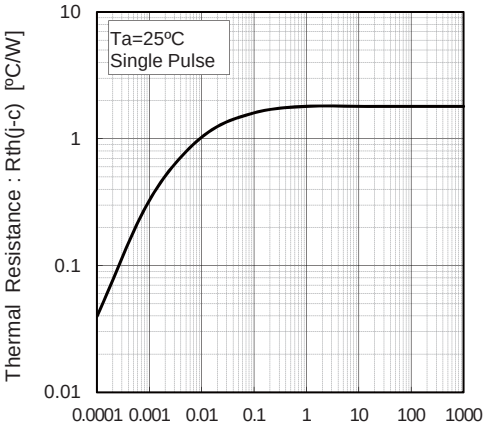


Fig.6 Power Dissipation (Per leg)

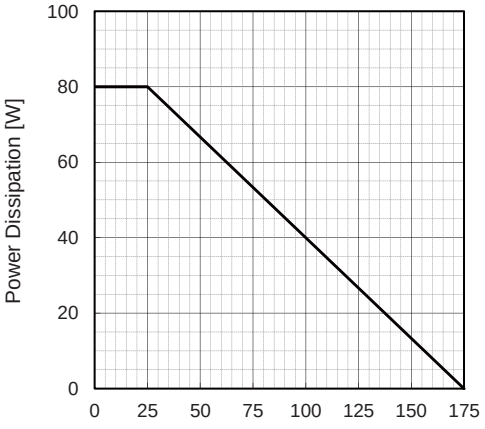


Fig.7 Ip-Tc Derating Curve (Per leg)

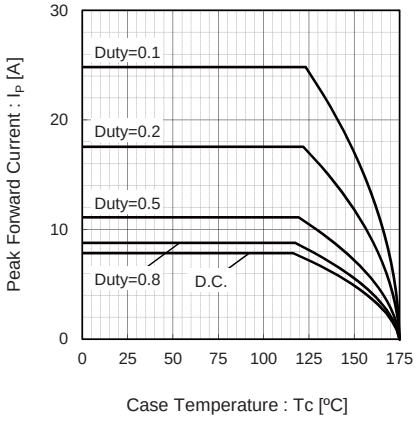


Fig.8 Io-Pf Characteristics (Per leg)