

SCS230KE2

SiC Schottky Barrier Diode

V_R	1200V
I _F	15A/30A*
Q _C	51nC

*(Per leg / Both legs)

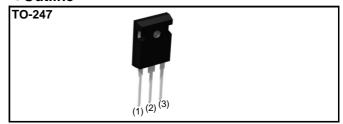
Features

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

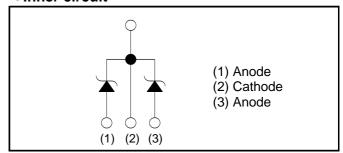
Construction

Silicon carbide epitaxial planer type

Outline



•Inner circuit



Packaging specifications

	ging speemeanens	
	Packaging	Tube
	Reel size (mm)	-
Type	Tape width (mm)	-
Туре	Basic ordering unit (pcs)	30
	Taping code	С
	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	А	
		65/130* ²	А	
Surge no repetitive forward current*7	I _{FSM}	240/480* ³	Α	
		49/98*4	Α	
Repetitive peak forward current*7	I _{FRM}	62/120* ⁵	А	
Total power disspation*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 (Tj = 25°C) (Per leg)

Parameter	Symbol	Conditions	Values			Linit
			Min.	Тур.	Max.	Unit
DC blocking voltage	V_{DC}	I _R =0.3mA	1200	-	-	V
Forward voltage	V _F	I _F =15A,Tj=25°C	-	1.4	1.6	V
		I _F =15A,Tj=150°C	-	1.8	-	V
		I _F =15A,Tj=175°C	-	1.9	-	V
Reverse current	I _R	V _R =1200V,Tj=25°C	-	15	300	μΑ
		V _R =1200V,Tj=150°C	-	120	1	μΑ
		V _R =1200V,Tj=175°C	-	195	-	μΑ
Total capacitance	С	V _R =1V,f=1MHz	-	790	-	pF
		V _R =800V,f=1MHz	-	63	-	pF
Total capacitive charge	Qc	V _R =800V,di/dt=500A/μs	-	51	-	nC
Switching time	tc	V _R =800V,di/dt=500A/μs	1	18	-	ns

Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Тур.	Max.	Offic
Thermal resistance	$R_{\text{th(j-c)}}$	Per Leg	ı	0.67	0.81	°C/W
		Both Legs	ı	0.34	0.41	°C/W

•Electrical characteristic curves

Fig.1 V_F - I_F Characteristics (per leg)

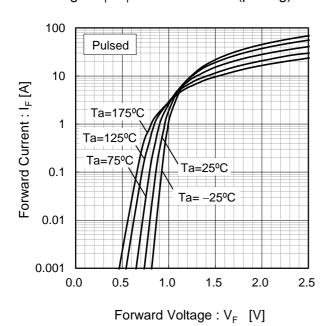
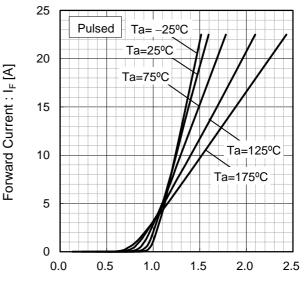


Fig.2 V_F - I_F Characteristics (per leg)



Forward Voltage : V_F [V]

Fig.3 V_R - I_R Characteristics (per leg)

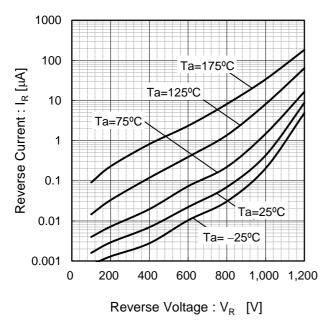
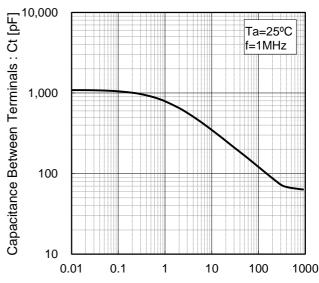


Fig.4 V_R-Ct Characteristics (per leg)



Reverse Voltage : V_R [V]

•Electrical characteristic curves

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

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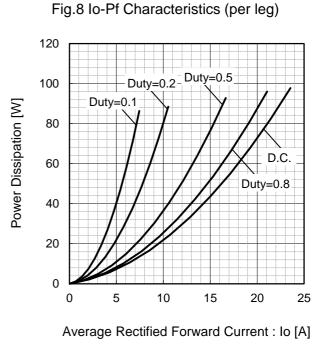
Ta=25°C
Single Pulse

0.01
0.0001 0.001 0.01 0.1 1 10 100 1000

Pulse Width: Pw [s]

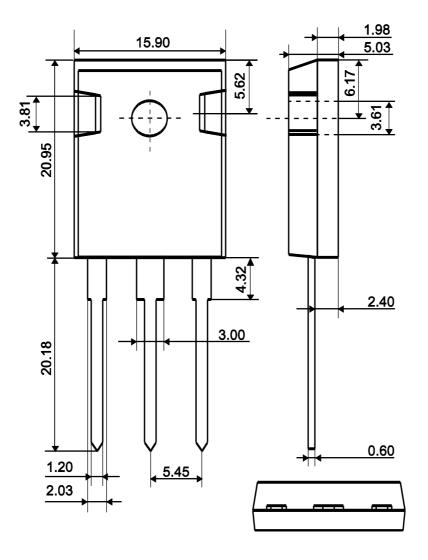
Fig.6 Power Dissipation (per leg)

Fig.7 Ip-Tc Derating Curve (per leg) 80 Duty=0.1 70 Peak Forward Current: Ip [A] 60 50 Duty=0.2 40 Duty=0.5 30 20 Duty=0.8 D.C 10 0 25 125 150 175 0 50 75 100 Case Temperature : Tc [°C]



●Dimensions (Unit:mm)

TO-247



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