

SCS230AE2

SiC Schottky Barrier Diode

V_R	650V
I _F	15A/30A*
Q _C	23nC

*(Per leg / Both legs)

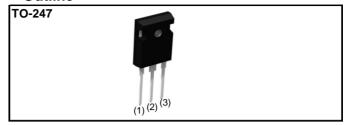
Features

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

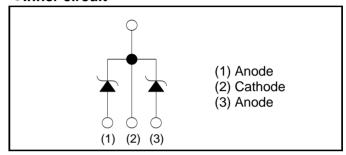
Construction

Silicon carbide epitaxial planer type

Outline



•Inner circuit



Packaging specifications

- 0.01101	ging opcomoduciono	
Type	Packaging	Tube
	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	30
	Taping code	С
	Marking	SCS230AE2

● 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*7	I _F	15/30* ¹	А
		55/110* ²	А
Surge no repetitive forward current*7	I _{FSM}	200/410* ³	А
		43/87* ⁴	А
Repetitive peak forward current*7	I _{FRM}	61/124* ⁵	А
Total power disspation*7	P_{D}	110/230* ⁶	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	-55 to +175	°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)

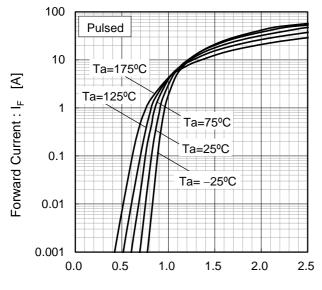
Parameter	Symbol	Conditions	Values			Lloit
		Conditions	Min.	Тур.	Max.	Unit
DC blocking voltage	V_{DC}	I _R =0.3mA	600	-	-	V
Forward voltage	V _F	I _F =15A,Tj=25°C	-	1.35	1.55	V
		I _F =15A,Tj=150°C	-	1.55	-	V
		I _F =15A,Tj=175°C	-	1.63	-	V
Reverse current	I _R	V _R =600V,Tj=25°C	-	3	300	μΑ
		V _R =600V,Tj=150°C	-	45	1	μΑ
		V _R =600V,Tj=175°C	-	105	-	μΑ
Total capacitance	С	V _R =1V,f=1MHz	-	550	-	pF
		V _R =600V,f=1MHz	-	56	-	pF
Total capacitive charge	Qc	V _R =400V,di/dt=350A/μs	-	23	-	nC
Switching time	tc	V _R =400V,di/dt=350A/μs	1	18	-	ns

Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Тур.	Max.	Offic
Thermal resistance	$R_{\text{th(j-c)}}$	Per Leg	-	1.1	1.3	°C/W
		Both Legs	-	0.55	0.63	°C/W

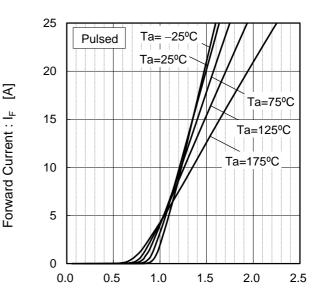
•Electrical characteristic curves

Fig.1 V_F - I_F Characteristics (Per leg)



Forward Voltage: V_F [V]

Fig.2 V_F - I_F Characteristics (Per leg)



Forward Voltage : V_F [V]

Fig.3 V_R - I_R Characteristics (Per leg)

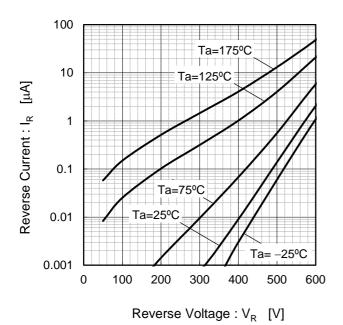
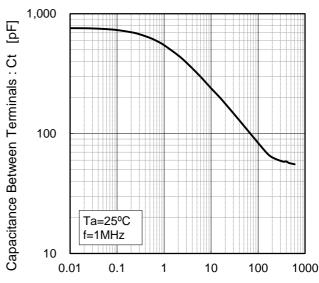


Fig.4 V_R-Ct Characteristics (Per leg)



Reverse Voltage : V_R [V]

•Electrical characteristic curves

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

10

Ta=25°C
Single Pulse

0.01
0.0001 0.001 0.01 0.1 1 10 100 1000

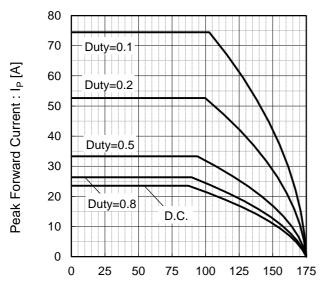
Pulse Width: Pw [s]

Fig.6 Power Dissipation (Per leg)

120
100
80
60
40
20
0 25 50 75 100 125 150 175

Power Dissipation [W]

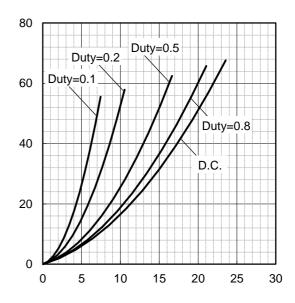
Fig.7 Derating Curve Ip-Tc (Per leg)



Case Temperature : Tc [°C]

Fig.8 Io-Pf Characteristics (Per leg)

Case Temperature : Tc [°C]

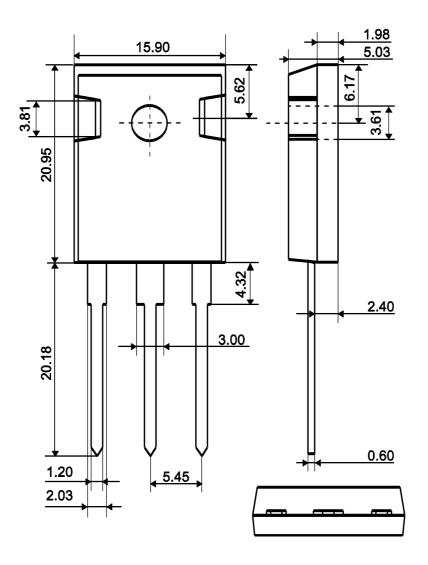


Average Rectified Forward Current : Io [A]

Power Dissipation [W]

●Dimensions (Unit:mm)

TO-247



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