

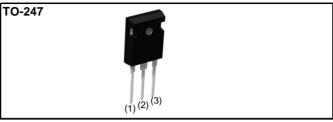
SCS240AE2 SiC Schottky Barrier Diode

V _R	650V
I _F	20A/40A*
Q _C	31nC
*	(Per leg / Both legs)

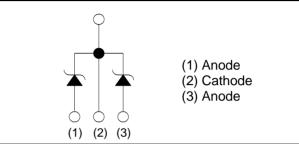
Features

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

Outline



●Inner circuit



Packaging specifications

	Packaging	Tube
Туре	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	30
	Taping code	С
	Marking	SCS240AE2

Construction

Silicon carbide epitaxial planer type

●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	20/40* ¹	А
	I _{FSM}	71/140* ²	А
Surge no repetitive forward current ^{*7}		260/530* ³	А
		56/110* ⁴	А
Repetitive peak forward current ^{*7}	I _{FRM}	76/154* ⁵	А
Total power disspation ^{*7}	P _D	130/270* ⁶	W
Junction temperature	Tj	175	°C
Range of storage temperature	Tstg	-55 to +175	°C

*1 Tc=128°C/Tc=129°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			l locit
Parameter			Min.	Тур.	Max.	Unit
DC blocking voltage	V _{DC}	I _R =0.4mA	600	-	-	V
	V _F	I _F =20A,Tj=25°C	-	1.35	1.55	V
Forward voltage		I _F =20A,Tj=150°C	-	1.55	-	V
		I _F =20A,Tj=175°C	-	1.63	-	V
Reverse current	I _R	V _R =600V,Tj=25°C	-	4	400	μA
		V _R =600V,Tj=150°C	-	60	-	μA
		V _R =600V,Tj=175°C	-	140	-	μA
Total capacitance	С	V _R =1V,f=1MHz	-	730	-	pF
		V _R =600V,f=1MHz	-	74	-	pF
Total capacitive charge	Qc	V _R =400V,di/dt=350A/μs	-	31	-	nC
Switching time	tc	V _R =400V,di/dt=350A/µs	-	19	-	ns

•Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Тур.	Max.	
Thermal resistance	R _{th(j-c)}	Per Leg	-	0.92	1.1	°C/W
		Both Legs	-	0.46	0.54	°C/W

•Electrical characteristic curves

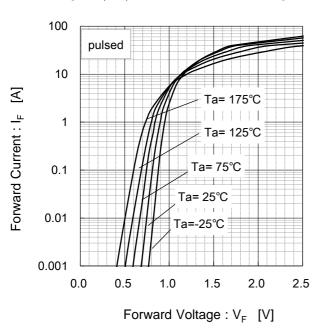
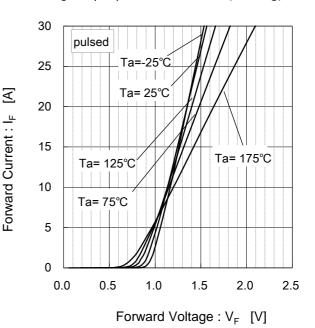


Fig.1 V_F - I_F Characteristics (Per leg)

Fig.2 V_F - I_F Characteristics (Per leg)



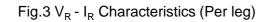
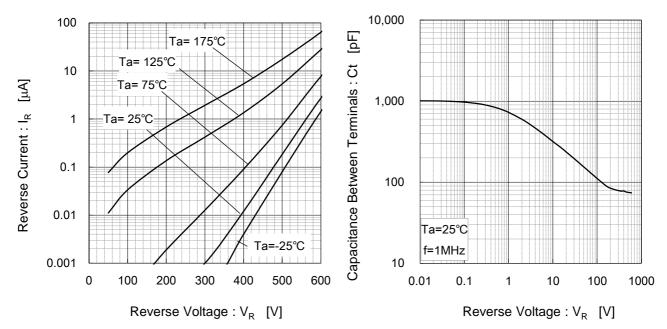


Fig.4 V_R-Ct Characteristics (Per leg)



•Electrical characteristic curves

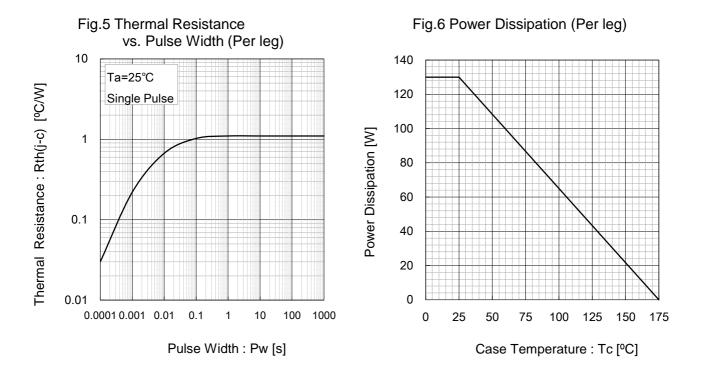
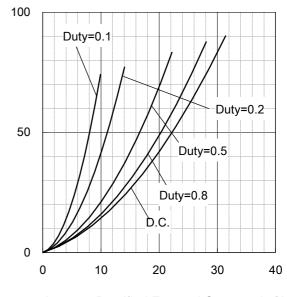


Fig.7 Derating Curve Ip-Tc (Per leg) 120 Duty=0.1 100 ^Deak Forward Current : I_P [A] 80 Duty=0.2 60 Duty=0.5 40 20 Duty=0.8 D.C 0 0 25 50 75 100 125 150 175 Case Temperature : Tc [°C]

Fig.8 Io-Pf Characteristics (Per leg)

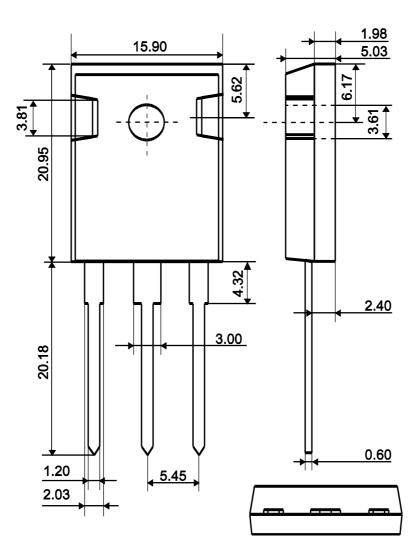


Average Rectified Forward Current : Io [A]

Power Dissipation [W]

•Dimensions (Unit : mm)

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