

SCS240KE2 SiC Schottky Barrier Diode

V _R	1200V
I _F	20A/40A*
Q _C	66nC(Per leg)
	*(Per leg / Both legs)

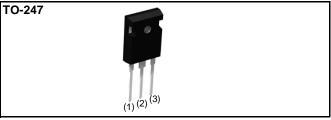
Features

Construction

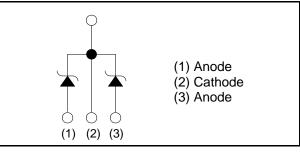
- 1) Shorter recovery time
- 2) Reduced temperature dependence
- 3) High-speed switching possible

Silicon carbide epitaxial planer type

Outline



Inner circuit



Packaging specifications

	Packaging	Tube
Туре	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	30
	Packing code	С
	Marking	SCS240KE2

•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	20/40* ¹	А	
		83/160* ²	А	
Surge no repetitive forward current ^{*7}	I _{FSM}	310/620* ³	А	
		62/120* ⁴	А	
Repetitive peak forward current ^{*7}	I _{FRM}	77/150* ⁵	А	
Total power disspation ^{*7}	P _D	210/420* ⁶	W	
Junction temperature	Tj	175	°C	
Range of storage temperature	Tstg	-55 to +175	°C	

*1 Tc=134°C/Tc=134°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			1.1.0.14
			Min.	Тур.	Max.	Unit
DC blocking voltage	V_{DC}	I _R =0.4mA	1200	-	-	V
	V _F	I _F =20A,Tj=25°C	-	1.4	-	V
Forward voltage		I _F =20A,Tj=150°C	-	1.8	-	V
		I _F =20A,Tj=175°C	-	1.9	-	V
Reverse current	I _R	V _R =1200V,Tj=25°C	-	20	400	μA
		V _R =1200V,Tj=150°C	-	160	-	μA
		V _R =1200V,Tj=175°C	-	260	-	μA
Total capacitance	С	V _R =1V,f=1MHz	-	1060	-	pF
		V _R =800V,f=1MHz	-	85	-	pF
Total capacitive charge	Qc	V _R =800V,di/dt=500A/μs	-	66	-	nC
Switching time	tc	V _R =800V,di/dt=500A/µs	-	18	-	ns

•Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Тур.	Max.	Unit
Thermal resistance	R _{th(i-c)}	Per Leg	-	0.56	0.70	°C/W
		Both Legs	-	0.28	0.35	°C/W

•Electrical characteristic curves

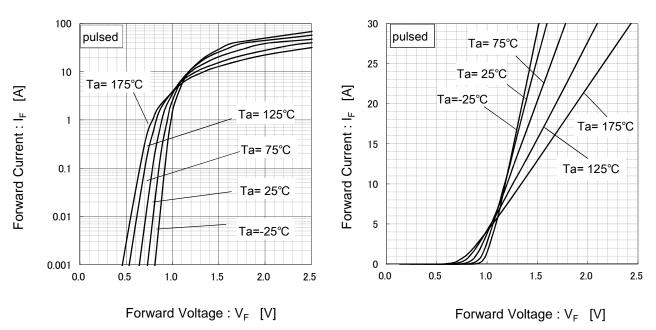


Fig.1 V_F - I_F Characteristics (Per leg)

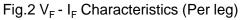
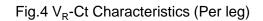
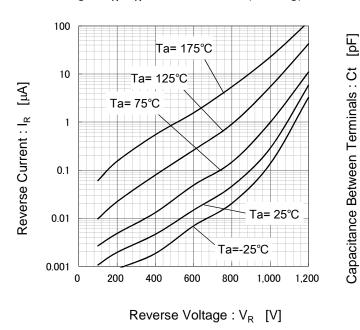
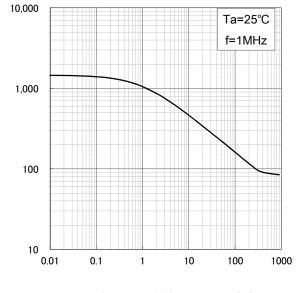


Fig.3 V_R - I_R Characteristics (Per leg)







Reverse Voltage : V_R [V]

•Electrical characteristic curves

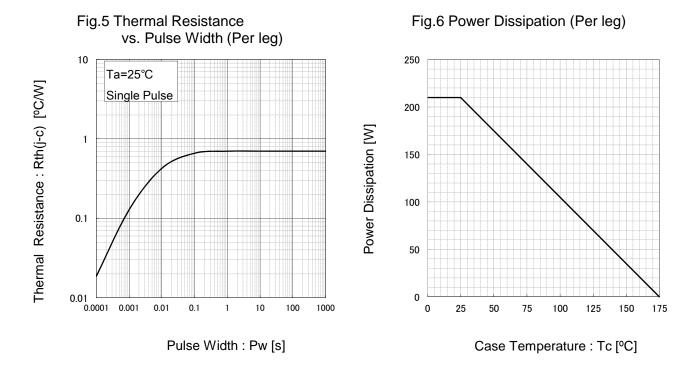
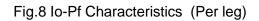
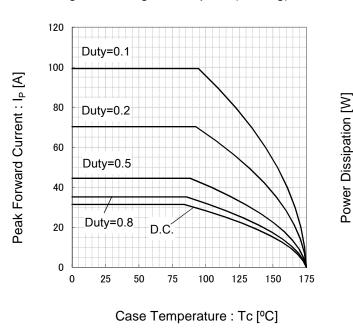
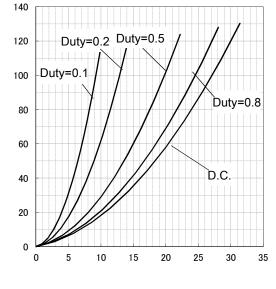


Fig.7 Derating Curve Ip-Tc (Per leg)







Average Rectified Forward Current : Io [A]

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