

SCS215KG

SiC Schottky Barrier Diode

V _R	1200V
I _F	15A
Q _C	51nC

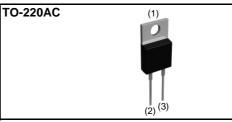
Features

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

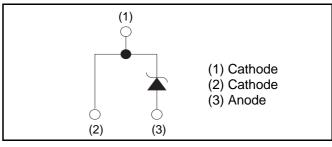
Applications

- PFC Boost Topology
- Secondary Side Rectification
- Data Center
- PV Power Conditioners

●Outline



Inner circuit



Packaging specifications

	Packaging	Tube
	Reel size (mm)	-
Tuno	Tape width (mm)	-
Туре	Basic ordering unit (pcs)	50
	Packing code	С
	Marking	SCS215KG

•Absolute maximum ratings $(T_j = 25^{\circ}C)$

Parameter		Symbol	Value	Unit
Reverse voltage (re	petitive peak)	V _{RM}	1200	V
Reverse voltage (De	C)	V _R	1200	V
Continuous forward	current $(T_c= 140^{\circ}C)$	I _F	15	А
Surge non-	PW=10ms sinusoidal, T _j =25°C		62	А
repetitive forward	PW=10ms sinusoidal, T _j =150°C	I _{FSM}	46	А
current	PW=10µs square, T _j =25°C		240	А
Repetitive peak for	ward current	I _{FRM}	68 ^{*1}	А
2	PW=10ms, T _j =25°C	f .2	19	A ² s
i ² t value	PW=10ms, T _j =150°C	∫ i ² dt	11	A ² s
Total power dissipation		P _D	180 ^{*2}	W
Junction temperature		Τ _j	175	°C
Range of storage te	emperature	T _{stg}	–55 to +175	°C

*1 $T_c=100^{\circ}C$, $T_j=150^{\circ}C$, Duty cycle=10% *2 $T_c=25^{\circ}C$

•Electrical characteristics ($T_j = 25^{\circ}C$)

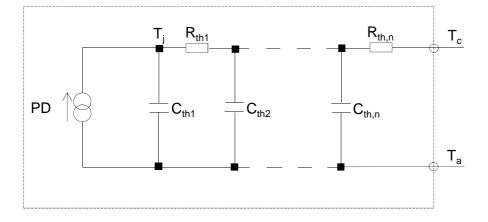
Deremeter	Symbol	Conditions	Values			1 10:4
Parameter		Conditions	Min.	Тур.	Max.	Unit
DC blocking voltage	V _{DC}	I _R =0.3mA	1200	-	-	V
		I _F =15A,T _j =25°C	-	1.4	1.6	V
Forward voltage		I _F =15A,T _j =150°C	-	1.8	-	V
		I _F =15A,T _j =175°C	-	1.9	-	V
	I _R	V _R =1200V,T _j =25°C	-	15	300	μA
Reverse current		V _R =1200V,T _j =150°C	-	120	-	μA
		V _R =1200V,T _j =175°C	-	195	-	μA
Total conscitance	С	V _R =1V,f=1MHz	-	790	-	pF
Total capacitance		V _R =800V,f=1MHz	-	64	-	pF
Total capacitive charge	Q _C	V _R =800V,di/dt=500A/μs	-	51	-	nC
Switching time	t _C	V _R =800V,di/dt=500A/μs	-	18	-	ns

•Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Тур.	Max.	Offic
Thermal resistance	R _{th(j-c)}	-	-	0.67	0.80	°C/W

•Typical Transient Thermal Characteristics

Symbol	Value	Unit	Symbol	Value	Unit
R _{th1}	1.24E-01		C _{th1}	3.81E-03	
R _{th2}	3.92E-01	K/W	C _{th2}	4.44E-03	Ws/K
R _{th3}	1.54E-01		C _{th3}	6.02E-02	





•Electrical characteristic curves



Fig.2 V_F - I_F Characteristics

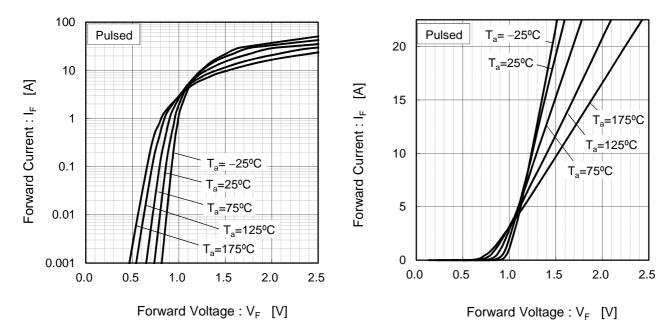
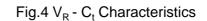
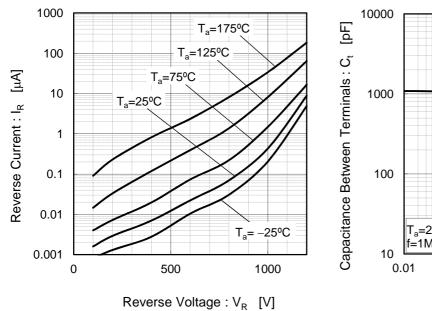
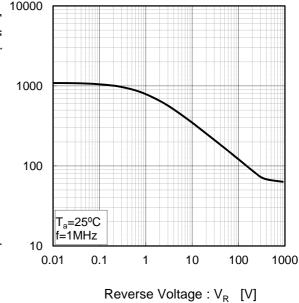


Fig.3 V_R - I_R Characteristics

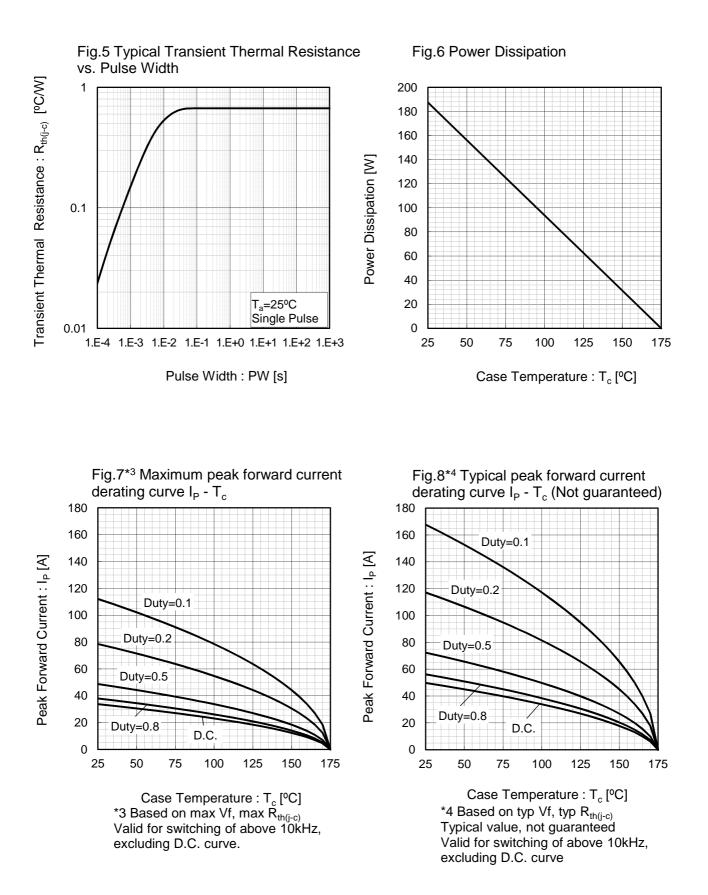






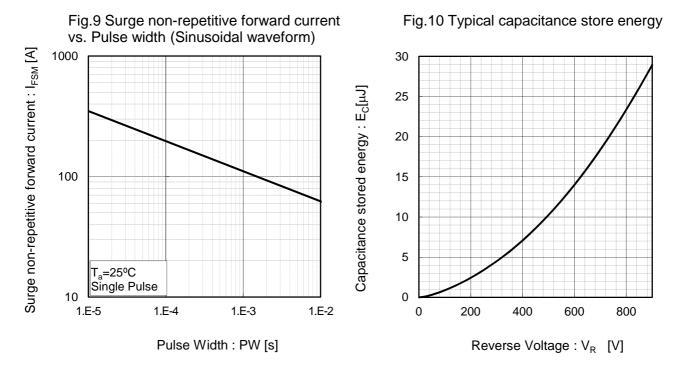


•Electrical characteristic curves

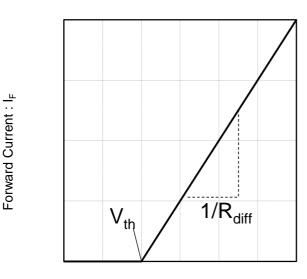




•Electrical characteristic curves



•Symplified forward characteristic model



Forward Voltage : V_F

 $V_F = V_{th} + R_{diff} I_F$

$V_{th}(T_{j}) = a_0 + a_1 T_{j}$	
$R_{diff} (T_j) = b_0 + b_1 T_j + b_2 T_j$	-2 j

Symbol	Typical Value	Unit
a ₀	9.93E-01	V
a ₁	-1.27E-03	V/°C
b ₀	2.43E-02	Ω
b ₁	1.37E-04	Ω/°C
b ₂	8.87E-07	$\Omega/^{\circ}C^{2}$

 $T_i \text{ in } {}^\circ\text{C}; -55 \, {}^\circ\text{C} < T_i < {}^\circ\text{C}; I_F < 30 \text{ A}$

Fig.11 Equivalent forward current curve



	Notes
1)	The information contained herein is subject to change without notice.
2)	Before you use our Products, please contact our sales representative and verify the latest specifications :
3)	Although ROHM is continuously working to improve product reliability and quality, semicon ductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Poducts beyond the rating specified by ROHM.
4)	Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The periphera conditions must be taken into account when designing circuits for mass production.
5)	The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
6)	The Products specified in this document are not designed to be radiation tolerant.
7)	For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, and power transmission systems.
8)	Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
9)	ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
10)	ROHM has used reasonable care to ensur the accuracy of the information contained in this document. However, ROHM does not warrants that such information is error-free, and ROHM shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
11)	Please use the Products in accordance with any applicable environmental laws and regulations such as the RoHS Directive. For more details, including RoHS compatibility, please contact a ROHM sales office. ROHM shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.
12)	When providing our Products and technologies contained in this document to other countries you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the US Export Administration Regulations and the Foreign Exchange and Foreign Trade Act.
13)	This document, in part or in whole, may not be reprinted or reproduced without prior consent or ROHM.



Thank you for your accessing to ROHM product informations. More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ROHM Semiconductor: SCS215KGC