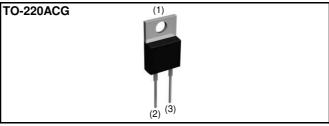


V _R	650V
١ _F	10A
Q _C	15nC

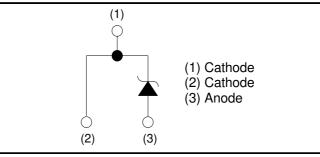
Features

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

Outline



●Inner circuit



Applications

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

Packaging specifications

	Packaging	Tube
Туре	Reel size (mm)	-
	Tape width (mm)	-
	Basic ordering unit (pcs)	50
	Packing code	C17
	Marking	SCS210AG

•Absolute maximum ratings (T_{vi} = 25°C unless otherwise specified.)

	a = 1000 mm m			
Parameter		Symbol	Value	Unit
Reverse voltage (re	epetitive peak)	V _{RM}	650	V
Reverse voltage (D	C)	V _R	650	V
Continuous forward	current $(T_c= 135^{\circ}C)^{*1}$	١ _F	10	А
Surge non-	PW=10ms sinusoidal, T _{vj} =25°C		38	А
repetitive forward current	PW=10ms sinusoidal, T _{vj} =150°C	I _{FSM}	30	А
	PW=10μs square, T _{vj} =25°C		150	А
Repetitive peak forward current		I _{FRM}	44 * ²	А
;2 	PW=10ms, T _{vj} =25°C	C 2	7.2	A ² s
i ² t value	PW=10ms, T _{vj} =150°C	∫ i²dt	4.5	A ² s
Total power disspation		P _D	78 * ^{1, 3}	W
Virtual Junction temperature		T _{vj}	175	°C
Range of storage temperature		T _{stg}	-55 to +175	°C
*1 Limited by maxim	num T_{vj} and for Max. R_{thJC} . *2 T_{c} =	=100°C, T _{vj} =150°C	C, Duty cycle=10%	. *3 T _c =25°C.

Devenedar	Symbol		Values			1.1
Parameter		Conditions	Min.	Тур.	Max.	Unit
DC blocking voltage	V _{DC}	I _R = 2.0mA	650	-	-	V
	V _F	I _F = 10A, T _{vj} =25°C	-	1.35	1.55	V
Forward voltage		I _F = 10A, T _{vj} =150°C	-	1.55	-	V
		I _F = 10A, T _{vj} =175°C	-	1.63	-	V
	I _R	V _R = 600 V,T _{vj} =25°C	-	2	200	μ A
Reverse current		V _R = 600 V,T _{vj} =150°C	-	30	-	μ A
		V _R = 600 V,T _{vj} =175°C	-	70	-	μ A
	С	V _R = 1V,f=1MHz	-	360	-	pF
Total capacitance		V _R = 600V,f=1MHz	-	37	-	pF
Total capacitive charge	Q _C	V _R =400V,di/dt=350A/µs	-	15	-	nC
Switching time	t _C	V _R =400V,di/dt=350A/µs	-	15	-	ns

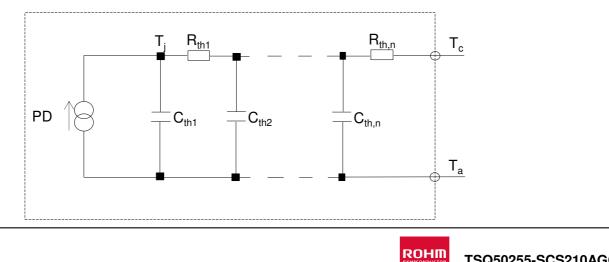
•Electrical characteristics (T_{vj} = 25°C unless otherwise specified.)

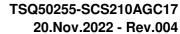
•Thermal characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Тур.	Max.	Unit
Thermal resistance	R_{thJC}	_	-	1.6	1.9	K/W

•Typical Transient Thermal Characteristics

Symbol	Value	Unit	Symbol	Value	Unit
R _{th1}	5.71 × 10 ⁻¹		C _{th1}	1.65×10^{-3}	
R _{th2}	1.02 × 10 °	K/W	C _{th2}	5.88 × 10 ⁻³	Ws/K
R _{th3}	5.32 × 10 $^{-3}$		C _{th3}	3.43 × 10 ⁻¹	





•Electrical characteristic curves

Fig.1 V_F - I_F Characteristics

Fig.2 V_F - I_F Characteristics

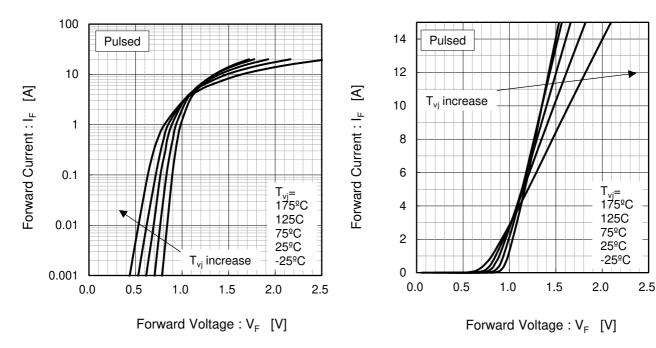
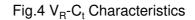
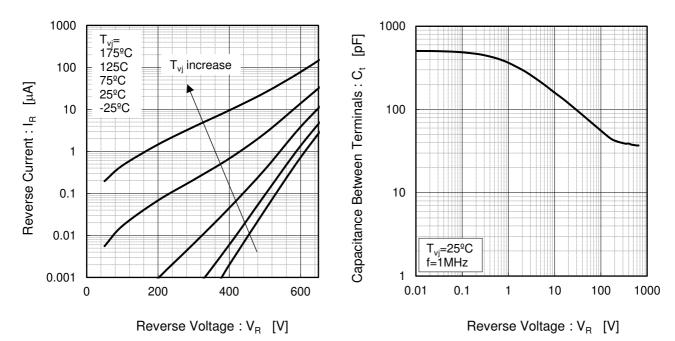


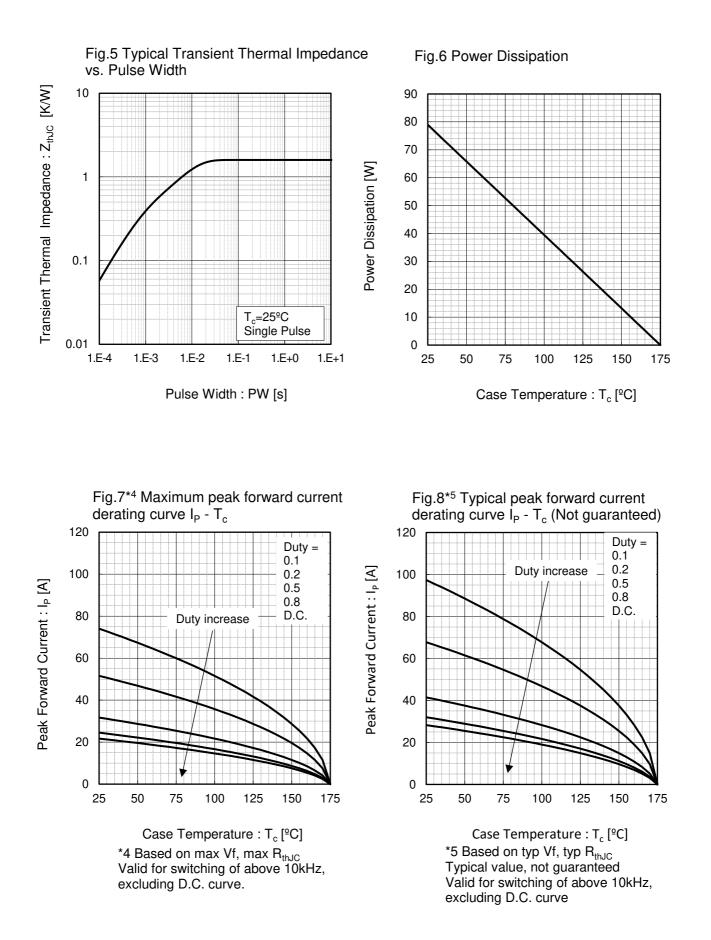
Fig.3 V_R - I_R Characteristics





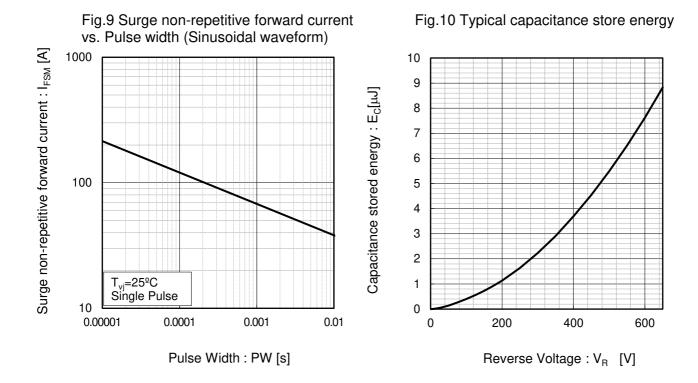


•Electrical characteristic curves





•Electrical characteristic curves



•Symplified forward characteristic model

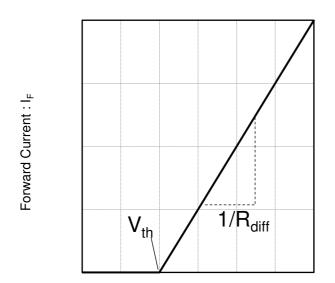


Fig.11 Equivalent forward current curve

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

 $\begin{array}{l} V_{th} \left({ \ T_{vj} \ } \right) = a_0 + a_1 \, T_{vj} \\ R_{diff} \left({ \ T_{vj} \ } \right) = b_0 + b_1 \, T_{vj} + b_2 \, T_{vj}^{\ 2} \end{array}$

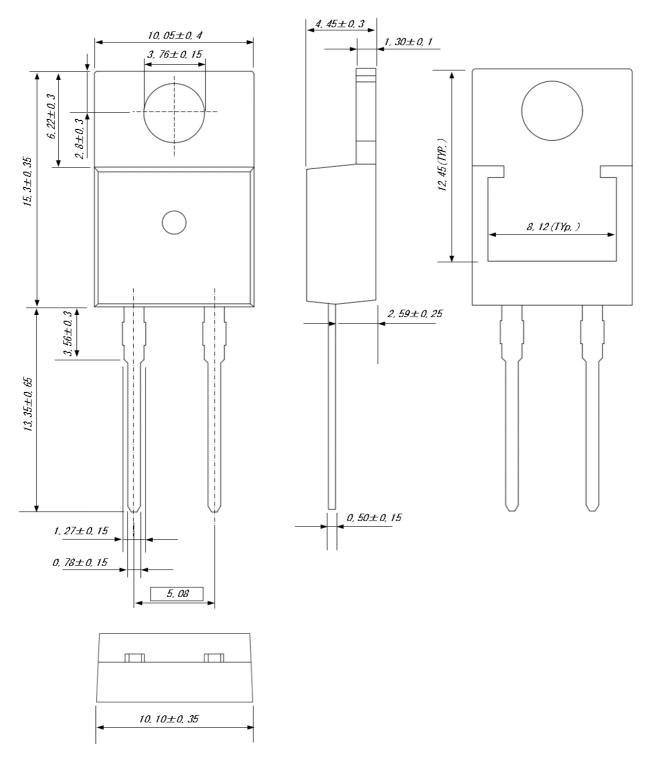
Symbol	Typical Value	Unit
a ₀	9.35 × 10 ⁻¹	V
a ₁	-1.12 × 10 ⁻³	V/°C
b ₀	3.98 × 10 ⁻²	Ω
b ₁	1.02 × 10 ⁻⁴	Ω/°C
b ₂	1.08 × 10 ⁻⁶	$\Omega/^{\circ}C^{2}$
	2	

 $T_{vj} \text{ in } ^{\circ}\text{C} \text{ ; -55 } ^{\circ}\text{C} \text{ < } T_{vj} \text{ < 175 } ^{\circ}\text{C} \text{ ; } I_{F} \text{ < } 20 \quad \text{A}$



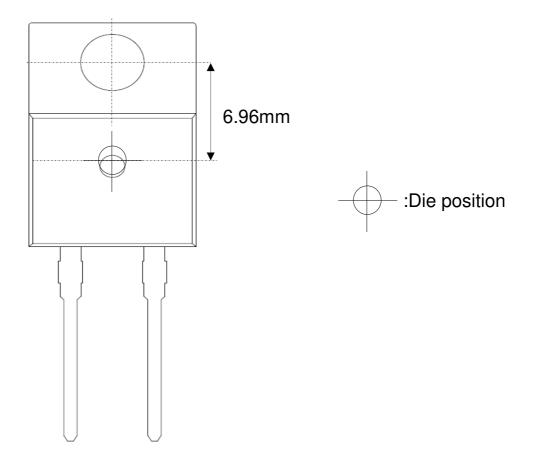
Forward Voltage : V_F

•Dimensions (Unit : mm)





•Die Bonding Layout



•Front view of the packaging.

•Dimensions are design values.

• If the heat sink is to be installed, it should be in contact with the die bonding point.

Unit: mm



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