6A 650V Silicon Carbide Schottky Diode SRD06V65A

General Description

The SRD06V65A is a Silicon Carbide Schottky Diode, which offers low V_F and superior switching performance for high frequency applications such as PFC, Power Supply, Inverter, etc.

The SRD06V65A is available in TO-252 and TO-220C-2 packages.

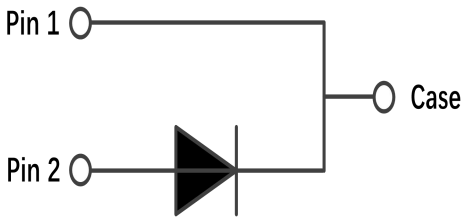
Features

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on V_F
- Temperature-independent Switching
- 175°C Operating Junction Temperature
- Non-Automotive Qualified

Application

- Switch Mode Power Supplies
- Motor Driver, PV Inverter
- PFC Application
- High Frequency Operation

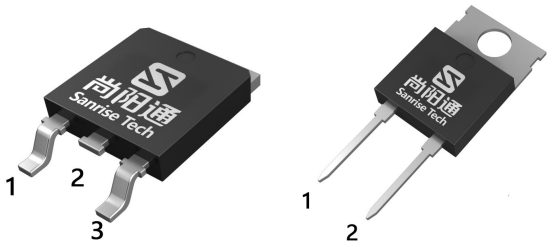
Symbol



TO-252 and TO-220C-2

Figure 1 Symbol of SRD06V65A

Package Type



TO-252 TO-220C-2

Figure 2 Package Type of SRD06V65A

Ordering Information

SRD06V65A□□–□

Circuit Type

Package
TC2: TO-220C-2
D: TO-252

E: Lead Free
G: Green
Blank: Tube
TR: Tape & Reel

Package	Part Number	Marking ID	Packing Type
TO-252	SRD06V65ADTR-G	SRD06V65ADG	Tape & Reel
TO-220C-2	SRD06V65ATC2-G	SRD06V65ATC2G	Tube

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Absolute Maximum Ratings

Parameter	Test Conditions	Symbol	Value	Unit
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
Surge Peak Reverse Voltage		V_{RSM}	650	V
DC Blocking Voltage		V_R	650	V
Forward Current	Tc≤155ºC	I_F	6	A
Non-Repetitive Forward Surge Current	tp=10ms, Half Sine Wave	I_{FSM}	47	A
	Tc=110ºC		38	A
I^2t Value		$\int i^2dt$	15	A^2S
Power Dissipation		P_{tot}(2)	93	W
Operating Junction Temperature	-	T_J	-55 ~ 175	ºC
Storage Temperature	-	T_{STG}	-55 ~ 175	ºC
Soldering Temperature	-	T_{sold}	260	ºC

Thermal Resistance

Parameter	Symbol	Min	Typ.	Max	Unit
Thermal Resistance，Junction-to-Case	R_{thJC}(2)	-	1.6	-	ºC/W
Thermal Resistance，Junction-to-Ambient	R_{thJA}(2)	-	80	-	

Note:

(1)Except for special instructions, T_c= 25℃

(2)Packages TO-252 is same as TO-220C-2

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Electrical Characteristics

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Unit
DC Blocking Voltage	V_{DC}		650			V
Forward Voltage	V_F	I_F=6A		1.4	1.65	V
		I_F=6A, T_j=175ºC		1.75	2.3	
Reverse Current	I_R	V_R=650V		1	20	µA
		V_R=650V, T_j=175ºC		5	100	
Total Capacitance	C	V_R=1V, f=1MHz		258		pF
		V_R=200V, f=1MHz		34		
		V_R=400V, f=1MHz		30		
Total Capacitive Charge	Q_C	V_R=650V, I_F=6A, dI_F/dt=200A/us		18		nC
Capacitance Stored Energy	Ec	V_R=400V		2.4		µJ
Single Pulse Avalanche Energy	EAS	L=2mH		60		mJ
		L=2mH, T_j=110ºC		50		

Note:

Except for special instructions, T_j= 25℃

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