

8A 650V Silicon Carbide Schottky Diode
SRD08V65A
General Description

The SRD08V65A 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 SRD08V65A is available in PDFN8*8-4, TO-220F-2, TO-263-2, TO-252 and TO-22C-2 packages.

Features

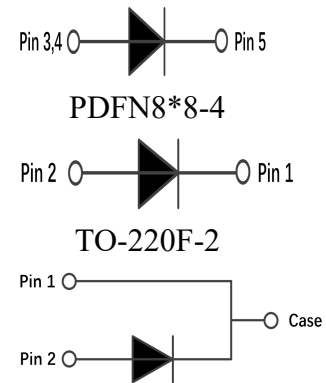
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on V_F
- Temperature-independent Switching
- 175°C Operating Junction Temperature
- Non-Automotive Qualified

Application

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

Ordering Information

	SRD08V65A□□-□	
Circuit Type		E: Lead Free
Package		G: Green
GD88: PDFN8*8-4	D: TO-252	Blank: Tube
TF2: TO-220F-2	S2: TO-263-2	TR: Tape & Reel
TC2: TO-220C-2		

Symbol


TO-252, TO-263 and TO-220C-2

Figure 1 Symbol of SRD08V65A

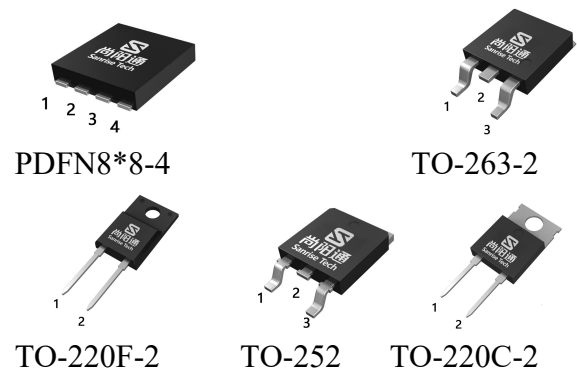
Package Type


Figure 2 Package Type of SRD08V65A

Package	Part Number	Marking ID	Packing Type
PDFN8*8-4	SRD08V65AGD88TR-G	SRD08V65AGD88G	Tape & Reel
TO-252	SRD08V65ADTR-G	SRD08V65ADG	Tape & Reel
TO-263-2	SRD08V65AS2TR-G	SRD08V65AS2G	Tape & Reel
TO-220C-2	SRD08V65ATC2-G	SRD08V65ATC2G	Tube
TO-220F-2	SRD08V65ATF2-G	SRD08V65ATF2G	Tube

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	$T_c \leq 153^\circ\text{C}$	I_F	8	A	
Non-Repetitive Forward Surge Current	$t_p=10\text{ms}$, Half Sine Wave	I_{FSM}	65	A	
	$T_c=110^\circ\text{C}$		55		
I^2t Value	-	$\int i^2 dt$	21.5	A^2S	
Power Dissipation	-	$P_{tot}^{(2)}$	TO-220F-2	36	W
			TO-220C-2	107	
Operating Junction Temperature	-	T_J	-55 ~ 175	$^\circ\text{C}$	
Storage Temperature	-	T_{STG}	-55 ~ 175	$^\circ\text{C}$	
Soldering Temperature		T_{sold}	260	$^\circ\text{C}$	

Thermal Resistance

Parameter	Packages	Symbol	Min	Typ.	Max	Unit
Thermal Resistance, Junction-to-Case	TO-220F-2	$R_{thJC}^{(2)}$	-	4.2	-	$^\circ\text{C}/\text{W}$
	TO-220C-2		-	1.4		
Thermal Resistance, Junction-to-Ambient	TO-220F-2	$R_{thJA}^{(2)}$	-	80	-	
	TO-220C-2		-	80	-	

Note:

 (1) Except for special instructions, $T_c = 25^\circ\text{C}$

(2) Packages TO-252-2, TO-263-2 and PDFN8*8-4 are same as TO-220C-2

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Unit
DC Blocking Voltage	V_{DC}		650			V
Forward Voltage	V_F	$I_F=8A$		1.4	1.65	V
		$I_F=8A, T_j=175^{\circ}C$		1.7	2.3	
Reverse Current	I_R	$V_R=650V$		1	20	μA
		$V_R=650V, T_j=175^{\circ}C$		5	100	
Total Capacitance	C	$V_R=1V, f=1MHz$		396		pF
		$V_R=200V, f=1MHz$		50		
		$V_R=400V, f=1MHz$		41		
Total Capacitive Charge	Q_C	$V_R=650V, I_F=8A$ $dI_F/dt=200A/us$		22		nC
Capacitance Stored Energy	E_c	$V_R=400V$		3.3		μJ
Single Pulse Avalanche Energy	EAS	$L=2mH$		80		mJ
		$L=2mH, T_j=110^{\circ}C$		65		

Note:

 Except for special instructions, $T_j=25^{\circ}C$



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