

General Description

The SRD10V65A 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 SRD10V65A is available in PDFN8*8, TO-252, TO-263-2, TO-220F-2, TO-22C-2, and TO-247-2 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

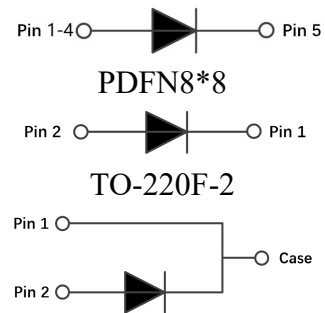
Application

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

Ordering Information

SRD10V65A□□-□		
Circuit Type		
Package		E: Lead Free G: Green Blank: Tube TR: Tape & Reel
GD88: PDFN8*8	DT: TO-252	
S2: TO-263-2	TF2: TO-220F-2	
TC2: TO-220C-2	T2: TO-247-2	

Symbol



TO-252, TO-263, TO-220C-2 and TO-247-2

Figure 1 Symbol of SRD10V65A

Package Type

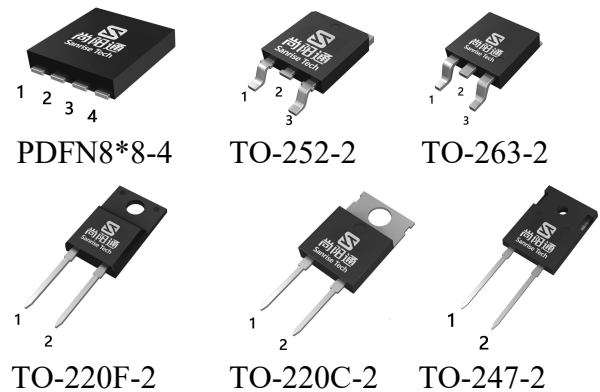


Figure 2 Package Type of SRD10V65A

Package	Part Number	Marking ID	Packing Type
PDFN8*8-4	SRD10V65AGD88TR-G	SRD10V65AGD88G	Tape & Reel
TO-252	SRD10V65ADTR-G	SRD10V65ADG	Tape & Reel
TO-263-2	SRD10V65AS2TR-G	SRD10V65AS2G	Tape & Reel
TO-220F-2	SRD10V65ATF2-G	SRD10V65ATF2G	Tube
TO-220C-2	SRD10V65ATC2-G	SRD10V65ATC2G	Tube
TO-247-2	SRD10V65AT2-G	SRD10V65AT2G	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	10	A	
Non-Repetitive Forward Surge Current	tp=10ms, Half Sine Wave	I_{FSM}	80	A	
	$T_c=110^\circ\text{C}$		70	A	
I^2t Value		$\int i^2 dt$	30	A ² S	
Power Dissipation		$P_{tot}^{(2)}$	PDFN8*8-4	136	W
			TO-220F-2	42	
			TO-220C-2	125	
			TO-247-2	230	
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	Package	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	PDFN8*8-4	$R_{thJC}^{(2)}$	-	0.8	1.1	$^\circ\text{C}/\text{W}$
	TO-220F-2		-	3.5	-	
	TO-220C-2		-	1.16	-	
	TO-247-2		-	0.65	-	
Thermal Resistance, Junction-to-Ambient	PDFN8*8-4	$R_{thJA}^{(2)}$	-	-	45	$^\circ\text{C}/\text{W}$
	TO-220F-2		-	80	-	
	TO-220C-2		-	80	-	
	TO-247-2		-	80	-	

Note:

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

(2) Packages TO-252 and TO-263-2 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	$I_F=10A$		1.37	1.65	V
		$I_F=10A, T_j=175^{\circ}C$		1.75	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	$V_R=1V, f=1MHz$		440		pF
		$V_R=200V, f=1MHz$		57		
		$V_R=400V, f=1MHz$		46		
Total Capacitive Charge	Q_C	$V_R=650V, I_F=10A$ $dI_F/dt=200A/us$		25		nC
Capacitance Stored Energy	E_c	$V_R=400V$		3.7		μJ
Single Pulse Avalanche Energy	EAS	$L=2mH$		120		mJ
		$L=2mH, T_j=110^{\circ}C$		90		

Note:

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



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