

General Description

The SRD20V65A 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 SRD20V65A is available in TO-220C-2 and TO-247-2 packages.

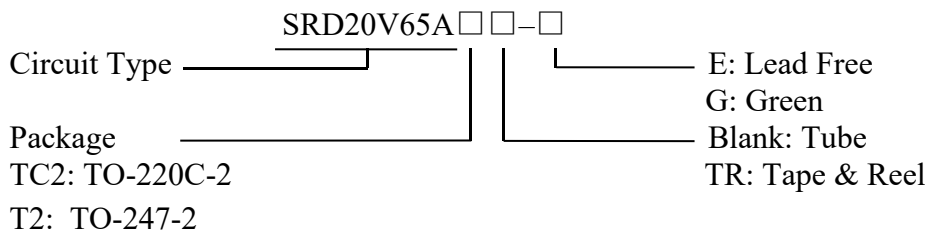
Features

- 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

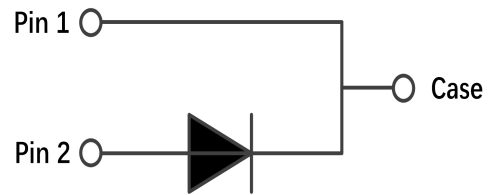
Application

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

Ordering Information



Symbol



TO-220C-2 and TO-247-2

Figure 1 Symbol of SRD20V65A

Package Type

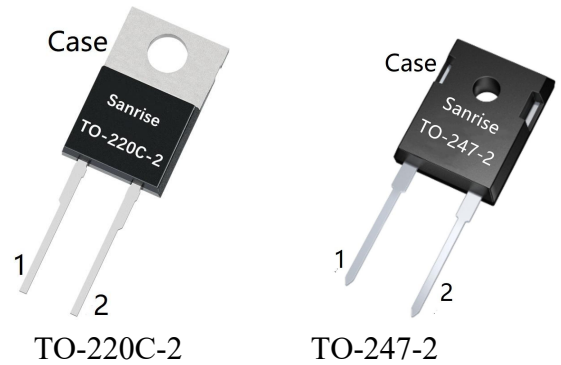


Figure 2 Package Type of SRD20V65A

Package	Part Number	Marking ID	Packing Type
TO-220C-2	SRD20V65ATC2-G	SRD20V65ATC2G	Tube
TO-247-2	SRD20V65AT2-G	SRD20V65AT2G	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	$T_c \leq 147^\circ\text{C}$	I_F	20	A	
Non-Repetitive Forward Surge Current,	tp=10ms, Half Sine Wave	I_{FSM}	128	A	
	$T_c=110^\circ\text{C}$		110	A	
I^2t Value, tp=10ms		$\int i^2 dt$	120	A ² S	
Power Dissipation		P_{tot}	TO-220C-2	176	W
			TO-247-2	250	
Operating Junction Temperature	-	T_J	-55 ~ 175	°C	
Storage Temperature	-	T_{STG}	-55 ~ 175	°C	
Soldering Temperature		T_{sold}	260	°C	

Thermal Resistance

Parameter	Package	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	TO-220C-2	R_{thJC}	-	0.85	-	°C/W
	TO-247-2		-	0.6	-	
Thermal Resistance, Junction-to-Ambient	TO-220C-2	R_{thJA}	-	80	-	
	TO-247-2		-	80	-	

Note:

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

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
DC Blocking Voltage	V_{DC}		650			V
Forward Voltage	V_F	$I_F=20A$		1.4	1.6	V
		$I_F=20A, T_j=175^{\circ}C$		1.7	2.3	
Reverse Current	I_R	$V_R=650V$		2	20	μA
		$V_R=650V, T_j=175^{\circ}C$		10	200	
Total Capacitance	C	$V_R=1V, f=1MHz$		894		pF
		$V_R=200V, f=1MHz$		115		
		$V_R=400V, f=1MHz$		96		
Total Capacitive Charge	Q_C	$V_R=650V, I_F=20A$ $dI_F/dt=200A/us$		37		nC
Capacitance Stored Energy	E_c	$V_R=400V$		7.7		μJ
Single Pulse Avalanche Energy	EAS	$L=2mH$		250		mJ
		$L=2mH, T_j=110^{\circ}C$		180		

Note:

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



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