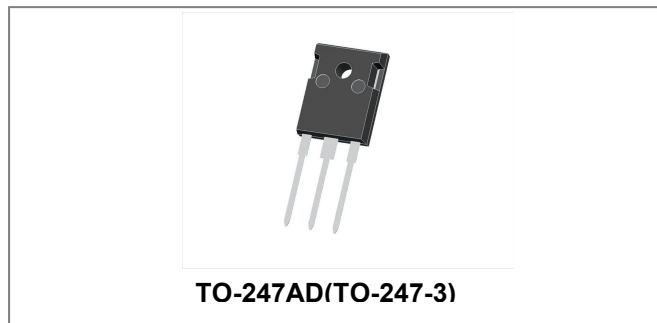


S4D20120D

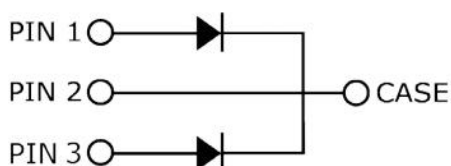
1200V SIC POWER SCHOTTKY RECTIFIER



Description

S4D20120D is a single SiC Schottky rectifier packaged in TO-247AD(TO-247-3) case. The device is a high voltage Schottky rectifier that has very low total conduction losses and very stable switching characteristics over temperature extremes. The S4D20120D is ideal for energy sensitive, high frequency applications in challenging environments.

Circuit Diagram



Features

- 175°C T_J operation
- Ultra-low switching loss
- Switching speeds independent of operating temperature
- Low total conduction losses
- High forward surge current capability
- High package isolation voltage
- Terminals finish: 100% Pure Tin
- Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional electrical and life testing can be performed upon request

Applications

- Alternative energy inverters
- Power Factor Correction (PFC)
- Free-Wheeling diodes
- Switching supply output rectification
- Reverse polarity protection

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	1200	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
Average Rectified Forward Current	$I_F (AV)$	T _c =150°C	10 (per leg) 20 (per device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	10ms, Half Sine pulse, T _J = 25 °C	105	A

Electrical Characteristics:

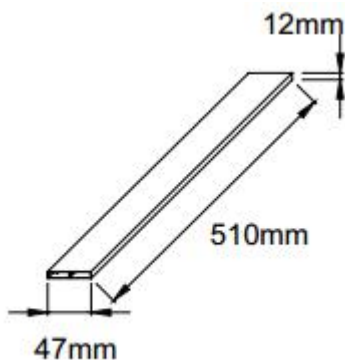
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg)*	V _{F1}	@ 10A, Pulse, T _J = 25 °C	1.5	1.8	V
	V _{F2}	@ 10A, Pulse, T _J = 175 °C	2.2	3.0	V
Reverse Current (per leg)*	I _{R1}	@V _R = rated V _R T _J = 25 °C	30	200	uA
	I _{R2}	@V _R = rated V _R T _J = 175 °C	55	350	uA
Junction Capacitance(per leg)	C _T	VR=0V, Tj=25°C, f=1MHz	772	-	pF

* Pulse width < 300 μs, duty cycle < 2%

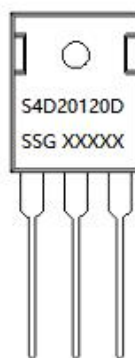
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T _J	-	-55 to +175	°C
Storage Temperature	T _{stg}	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case	R _{θJC}	DC operation, Tj=25°C	0.84(per leg) 0.42(both leg)	°C/W

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

S4D = Device Type
 D = Package type
 20 = Forward Current (20A)
 120 = Reverse Voltage (1200V)
 SSG = SSG
 YY = Year
 WW = Week
 L = Lot Number

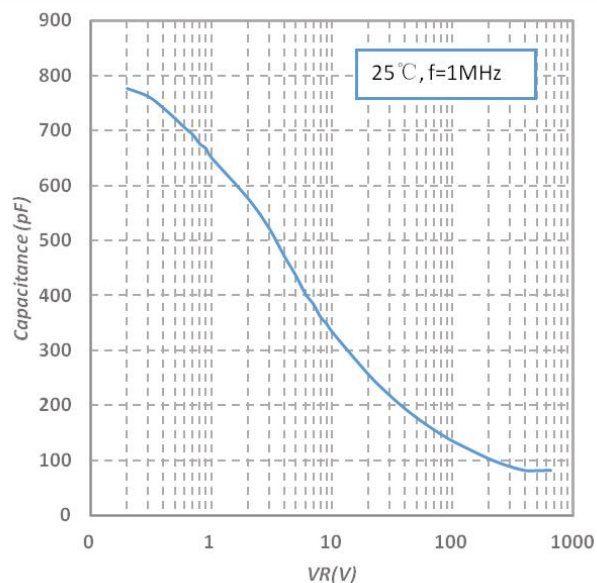
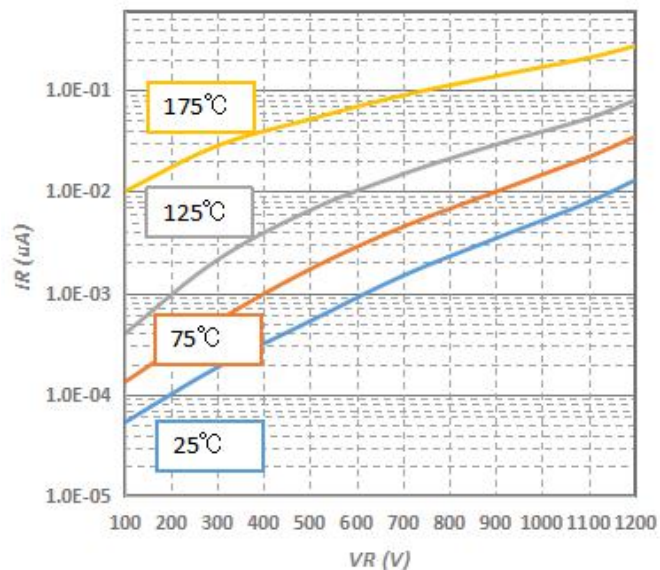
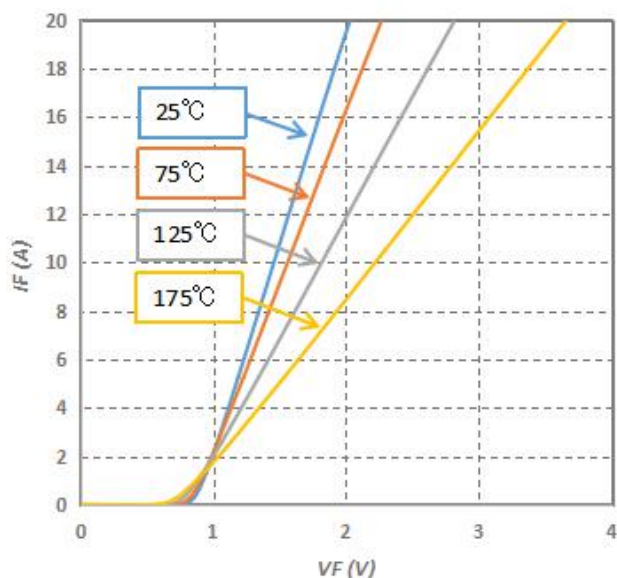
Cautions: Molding resin
 Epoxy resin UL:94V-0

Ordering Information

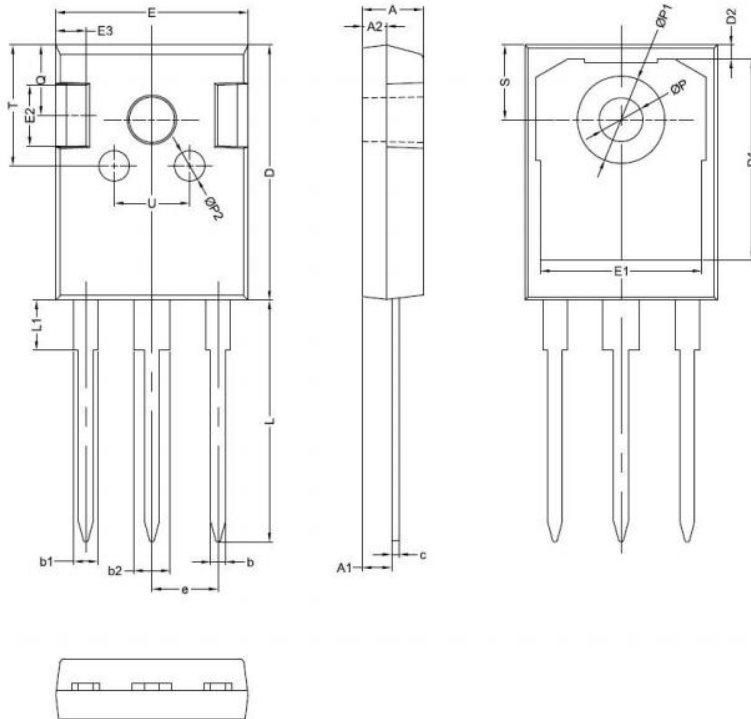
Device	Package	Shipping
S4D20120D	TO-247AD(TO-247-3)	25pcs /tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Ratings and Characteristics Curves (per leg)



Mechanical Dimensions TO-247AD



SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.40
b1	1.80	2.00	2.20
b2	2.80	3.00	3.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.55	
D2		1.20	
E	15.45	15.80	16.00
E1		13.30	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.70
L1		4.13	
P	3.50	3.60	3.70
P1	7.1		7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

Technical Data
Data Sheet N2290, REV. B



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