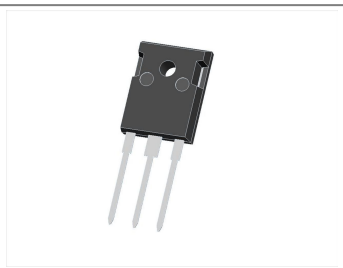
Technical Data
Data Sheet N2379, REV.-

S4D15120D
1200V SIC POWER SCHOTTKY RECTIFIER

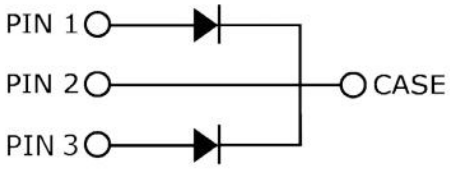


TO-247AD(TO-247-3)

Description

S4D15120D 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 S4D15120D 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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	1200	V
Average Rectified Forward Current	$I_{F\ (AV)}$	50% duty cycle @Tc=150°C, rectangular wave form	8 (per leg) 15 (per device)	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	10ms, Half Sine pulse, T_J = 25 °C	66	A
Repetitive Peak Forward Surge Current (per leg)	I_{FRM}	10 ms, Half Sine pulse , T_J =25°C	38	A

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RoHS

Electrical Characteristics:

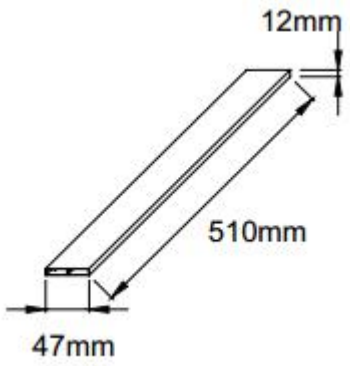
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg)*	V_{F1}	@ 8A, Pulse, T_J = 25 °C	1.6	1.8	V
	V_{F2}	@ 8A, Pulse, T_J = 175 °C	2.2	3.0	V
Reverse Current (per leg)*	I_{R1}	@V_R = rated V_R T_J = 25 °C	1.5	15	uA
	I_{R2}	@V_R = rated V_R T_J = 175 °C	5	35	uA
Junction Capacitance(per leg)	C_T	VR=0V, Tj=25℃, f=1MHz	560	-	pF

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

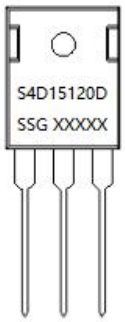
Thermal-Mechanical Specifications:

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	$R_{\theta JC}$	DC operation, Tj=25℃	0.84(per leg) 0.42(both leg)	°C/W

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

S4D	= Device Type
D	= Package type
15	= Forward Current (15A)
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
S4D15120D	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)

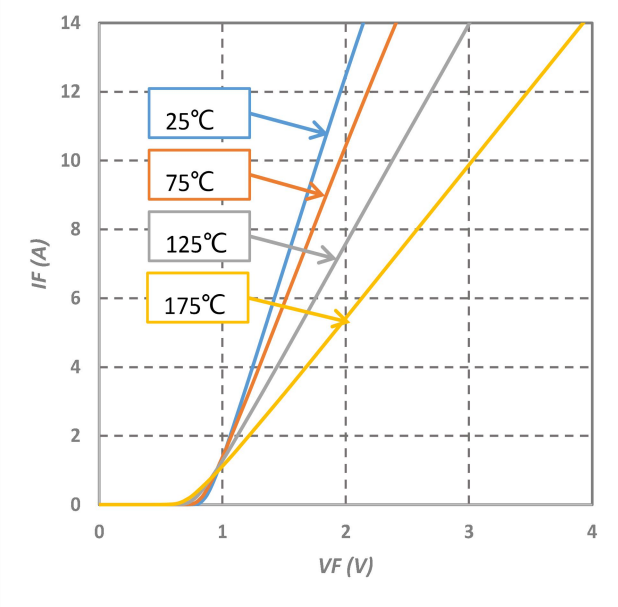


Fig.1-Typical Forward Voltage Characteristics

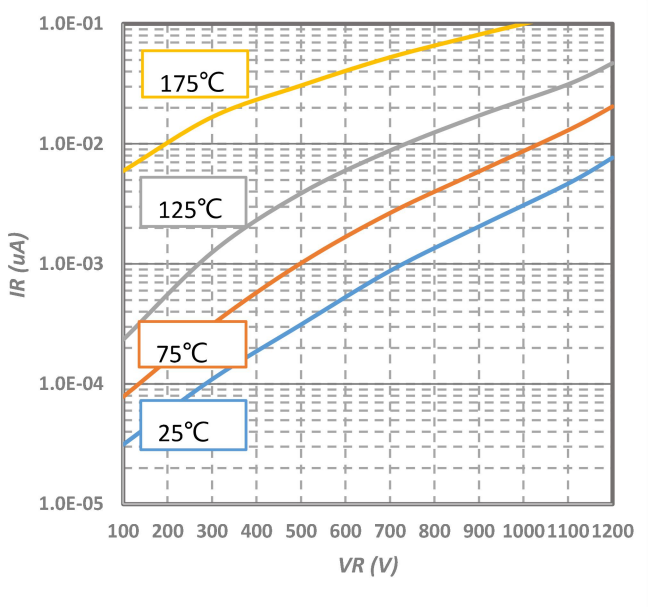


Fig.2-Typical Reverse Characteristics

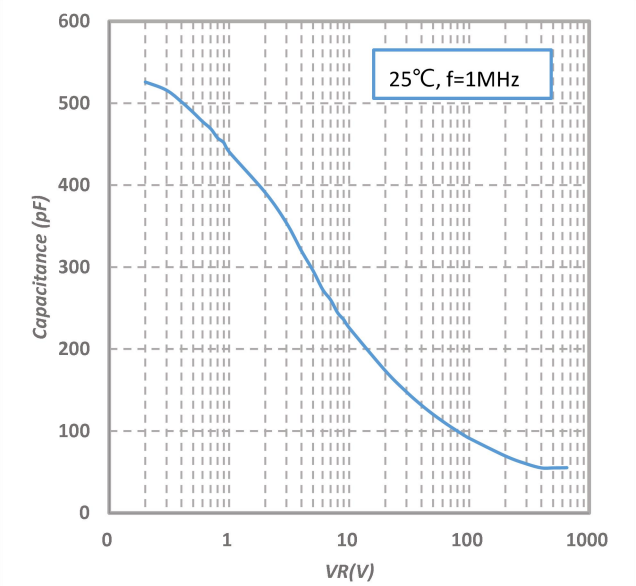
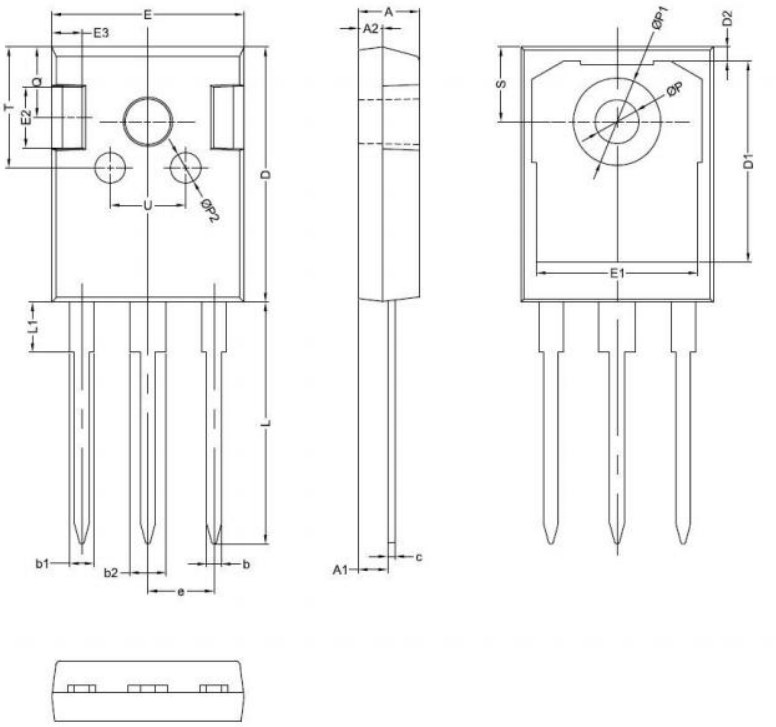


Fig.3-Capacitance vs. Reverse Voltage

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	

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