GEN2 SiC Schottky Diode LSIC2SD120D20, 1200 V, 20 A, TO-263-2L

LSIC2SD120D20

Circuit Diagram TO-263-2L

Case









Case

Description

This series of silicon carbide (SiC) Schottky diodes has negligible reverse recovery current, high surge capability, and a maximum operating junction temperature of 175 °C. This diode series is ideal for applications where improvements in efficiency, reliability, and thermal management are desired.

Features

- Positive temperature coefficient for safe operation and ease of paralleling
- 175 °C maximum operating junction temperature
- Excellent surge capability
- · Extremely fast, temperature-independent switching behavior
- · Dramatically reduced switching losses compared to Si bipolar diodes

Applications

- Boost diodes in PFC or DC/DC stages
- Switch-mode power supplies
- Uninterruptible power supplies
- Solar inverters
- Industrial motor drives
- EV charging stations

Environmental

• Littelfuse "RoHS" logo = RoHS conform



• Littelfuse "HF" logo = **HF** Halogen Free



• Littelfuse "Pb-free" logo = Pb-free lead plating



Maximum Ratings

Characteristics	Symbol	Conditions	Value	Unit	
Repetitive Peak Reverse Voltage	V _{RRM}	-	1200	V	
DC Blocking Voltage	V _R	T _J = 25 °C	1200	V	
		T _c = 25 °C	54.5	А	
Continuous Forward Current	I _F	T _C = 135 °C	26.0		
		T _c = 150 °C	20.0		
Non-Repetitive Forward Surge Current	I _{FSM}	$T_{\rm C}$ = 25 °C, $T_{\rm P}$ = 10 ms, Half sine pulse	140	А	
Daniel Diagraphica	D	T _C = 25 °C	250	W	
Power Dissipation	P _{Tot}	T _C = 110 °C	108		
Operating Junction Temperature	T	-	-55 to 175	°C	
Storage Temperature	T _{STG}	-	-55 to 150	°C	
Soldering Temperature (reflow MSL1)	T _{sold}	-	260	°C	

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Electrical Characteristics

Characteristics	Complete	Symbol Conditions	Value			Unit
Characteristics	Symbol		Min.	Тур.	Max.	Unit
Forward Voltage	\/	I _F = 20 A, T _J = 25 °C	-	1.5	1.8	V
	V _F	I _F = 20 A, T _J = 175 °C	-	2.2	-	
Reverse Current		V _R = 1200 V , T _J = 25 °C	-	<1	100	μΑ
	I _R	V _R = 1200 V , T _J = 175 °C	-	15		
Total Capacitance		V _R = 1 V, f = 1 MHz	-	1142	-	pF
	С	$V_R = 400 \text{V}, \text{f} = 1 \text{MHz}$	-	108	-	
		V _R = 800 V, f = 1 MHz	-	82	-	
Total Capacitive Charge	O _c	$V_{R} = 800 \text{ V}, \ Q_{c} = \begin{cases} V_{R} \\ C(V)dV \\ 0 \end{cases}$	-	115	-	nC

Footnote: T = +25 °C unless otherwise specified

Thermal Characteristics

Characteristics	Symbol	Conditions	Value			Unit
Citaracteristics	Symbol	Conditions	Min.	Тур.	Max.	Oiiit
Thermal Resistance	Reic	-	-	0.6	-	°C/W

Figure 1: Typical Foward Characteristics

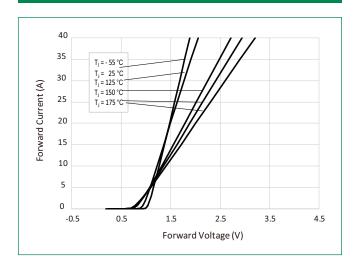


Figure 2: Typical Reverse Characteristics

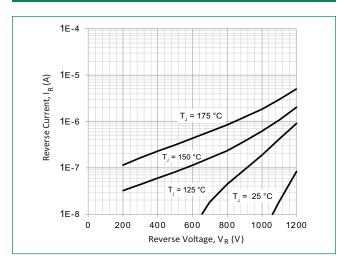




Figure 3: Power Derating

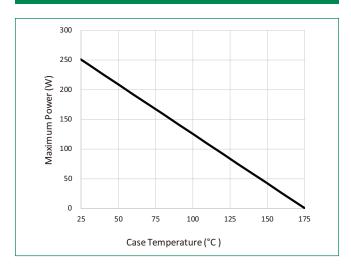


Figure 4: Current Derating

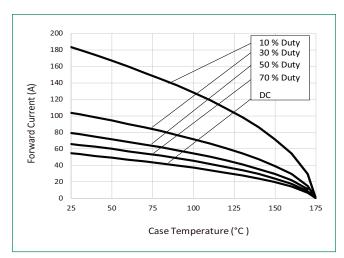


Figure 5: Capacitance vs. Reverse Voltage

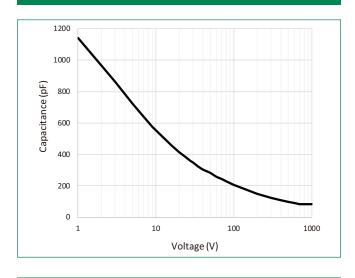


Figure 6: Capacitive Charge vs. Reverse Voltage

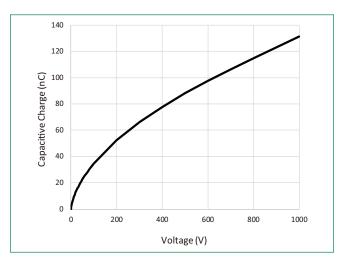


Figure 7: Stored Energy vs. Reverse Voltage

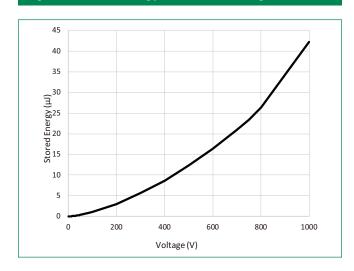
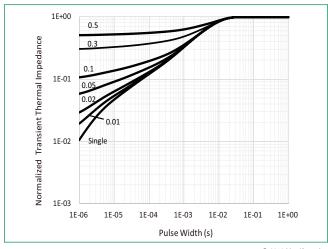


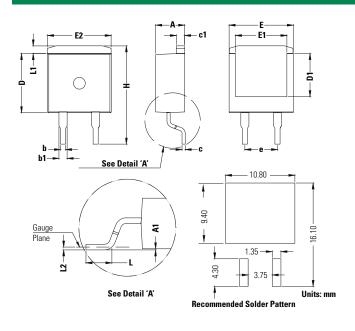
Figure 8: Transient Thermal Impedance



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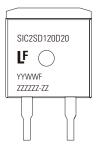
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Dimensions-Package TO-263-2L



Complete	Millimeters				
Symbol	Min	Nom	Max		
Α	4.30	4.50	4.70		
A1	0.00	-	0.25		
b	0.70	0.80	0.90		
b1	1.17	1.27	1.37		
С	0.46	0.50	0.60		
c1	1.25	1.30	1.40		
D	9.00	9.20	9.40		
D1	6.50	6.70	6.90		
E	9.80	10.00	10.20		
E1	7.80	8.00	8.20		
E2	9.70	9.90	10.10		
е	5.08 BSC				
Н	15.00	15.30	15.60		
L	2.00	2.30	2.60		
L1	1.00	1.20	1.40		
L2	0.254 BSC				

Part Numbering and Marking System



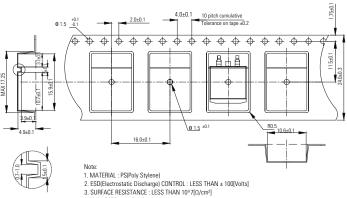
- = SiC Diode SIC 2 = Gen2
 - = Schottky Diode
- SD = Voltage Rating (1200 V) 120
- = TO-263 Package (2 Lead) D
- = Current Rating (20 A) 20
- ΥY = Year
- $\mathsf{W}\mathsf{W}$ = Week
- = Special Code
- ZZZZZZ-ZZ = Lot Number

Packing Option

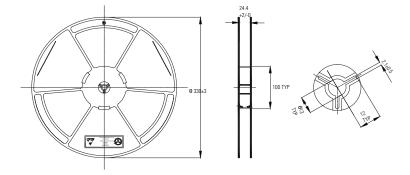
Part Number	Marking	Packing Mode	M.O.Q
LSIC2SD120D20	SIC2SD120D20	Tape and Reel	800

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TO-263 Carrier Reel Specifications



4. Unit: Millimeter (mm)



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