GEN2 SiC Schottky Diode LSIC2SD120D15, 1200 V, 15 A, TO-263-2L

LSIC2SD120D15









Case

 \bigcirc

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 RoHS conform
- Littelfuse "HF" logo = HF Halogen Free
- Littelfuse "Pb-free" logo = Pb-free lead plating



Maximum Ratings

Circuit Diagram TO-263-2L

Case

Characteristics	Symbol	Conditions	Value	Unit	
Repetitive Peak Reverse Voltage	V _{RRM}	-	1200	V	
DC Blocking Voltage	V _R	T _J = 25 °C	1200	V	
Continuous Forward Current		T _C = 25 °C	44		
	I _F	T _C = 135 °C	21	А	
		T _C = 150 °C	15		
Non-Repetitive Forward Surge Current	I _{FSM}	$T_{\rm C}$ = 25 °C, $T_{\rm p}$ = 10 ms, Half sine pulse	120	А	
Power Dissipation	D	T _C = 25 °C	214	W	
Fower Dissipation	P _{Tot}	P_{Tot} $T_{\text{c}} = 110 ^{\circ}\text{C}$			
Operating Junction Temperature	T	-	-55 to 175	°C	
Storage Temperature	T _{STG}	-	-55 to 150	°C	
Soldering Temperature (reflow MSL1)	T _{sold}	-	260	°C	

GEN2 SiC Schottky Diode LSIC2SD120D15, 1200 V, 15 A, T0-263-2L

Electrical Characteristics

Characteristics Sym	Complete	Symbol Conditions	Value			Unit
	Symbol		Min.	Тур.	Max.	Unit
Forward Voltage	\/	I _F = 15 A, T _J = 25 °C	-	1.5	1.8	V
	V _F	I _F = 15 A, T _J = 175 °C	-	2.2		V
Reverse Current		V _R = 1200 V , T _J = 25 °C	-	<1	100	μΑ
	I _R	V _R = 1200 V , T _J = 175 °C	-	10		
Total Capacitance C		V _R = 1 V, f =1 MHz	-	920		pF
	С	V _R = 400 V, f = 1 MHz	-	88		
		V _R = 800 V, f = 1 MHz	-	64		
Total Capacitive Charge	O _c	$V_{R} = 800 \text{ V}, \ Q_{c} = \int_{C}^{V_{R}} C(V) dV$	-	92		nC

Footnote: T₁ = +25 °C unless otherwise specified

Thermal Characteristics

Characteristics	Cumhal	Conditions	Value			Unit
	Symbol	Conditions	Min.	Тур.	Max.	Oiiit
Thermal Resistance	R _{euc}	-	-	0.7	-	°C/W

Figure 1: Typical Foward Characteristics

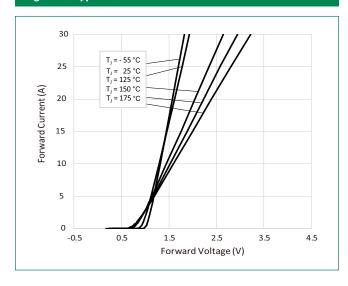


Figure 2: Typical Reverse Characteristics

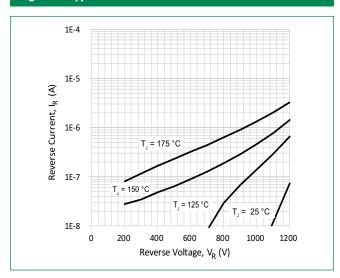




Figure 3: Power Derating

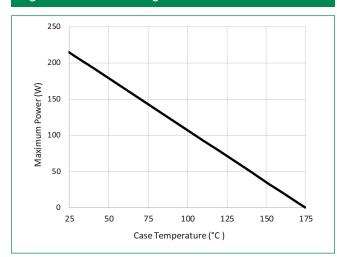


Figure 4: Current Derating

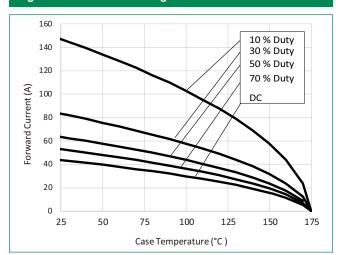


Figure 5: Capacitance vs. Reverse Voltage

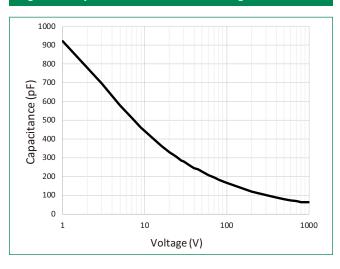


Figure 6: Capacitive Charge vs. Reverse Voltage

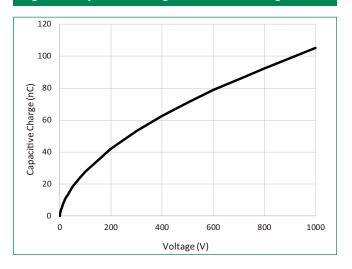


Figure 7: Stored Energy vs. Reverse Voltage

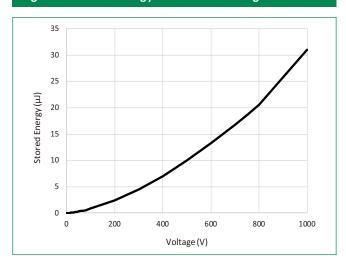
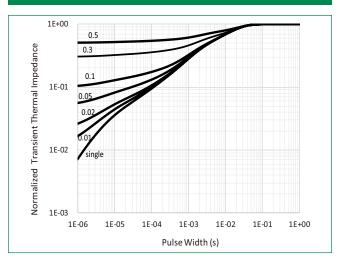
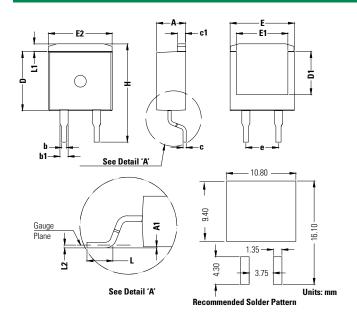


Figure 8: Transient Thermal Impedance



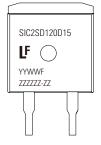
GEN2 SiC Schottky Diode LSIC2SD120D15, 1200 V, 15 A, TO-263-2L

Dimensions-Package TO-263-2L



Complete	Millimeters				
Symbol	Min	Nom	Max		
Α	4.30	4.50	4.70		
A 1	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	= SiC Diode
2	= Gen2
SD	= Schottky Diode
120	= Voltage Rating (1200 V)
D	= TO-263 Package (2 Lead)
15	= Current Rating (15 A)
YY	= Year
WW	= Week
F	= Special Code

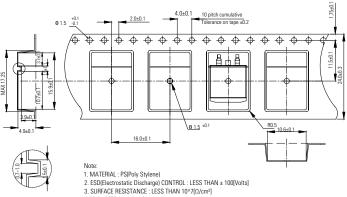
ZZZZZZ-ZZ = Lot Number

Packing Option

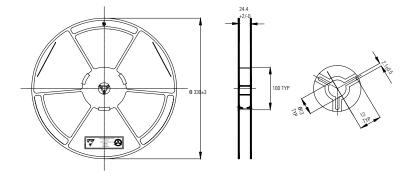
Part Number	Marking	Packing Mode	м.о.а
LSIC2SD120D15	SIC2SD120D15	Tape and Reel	800

GEN2 SiC Schottky Diode LSIC2SD120D15, 1200 V, 15 A, TO-263-2L

TO-263 Carrier Reel Specifications



4. Unit : Millimeter (mm)



Disclaimer Notice - Littelfuse products are not designed for, and shall not be used for, any purpose (including, without limitation, automotive, military, aerospace, medical, life-saving, life-sustaining or nuclear facility applications, Components intended for surgical implant into the body, or any other application in which the failure or lack of desired operation of the product may result in personal injury, death, or property damage) other than those expressly set forth in applicable Littelfuse product documentation. Warranties granted by Littelfuse shall be deemed void for products used for any purpose not expressly set forth in applicable Littelfuse documentation. Littelfuse shall not be liable for any claims or damages arising out of products used in applications not expressly intended by Littelfuse as set forth in applicable Littelfuse documentation. The sale and use of Littelfuse products is subject to Littelfuse Terms and Conditions of Sale, unless otherwise agreed by Littelfuse. Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.