#### GEN2 SiC Schottky Diode LSIC2SD065A10A, 650V, 10A, TO-220-2L

### LSIC2SD065A10A 650 V, 10 A SiC Schottky Barrier Diode

### HF Rohs 🕫





#### Circuit Diagram TO-220-2L



#### 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. These diodes series are ideal for applications where improvements in efficiency, reliability, and thermal management are desired.

#### Features

- AEC-Q101 qualified
- 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 load plating
  - = Pb-free lead plating

Maximum Ratings					
Characteristics	Symbol	Conditions	Value	Unit	
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	-	650	V	
DC Blocking Voltage	V <sub>R</sub>	T <sub>J</sub> = 25 °C	650	V	
Continuous Forward Current		T <sub>c</sub> = 25 °C	27	A	
	I <sub>F</sub>	T <sub>c</sub> = 135 °C	12.5		
		T <sub>c</sub> = 147 °C	10		
Non-Repetitive Forward Surge Current	I <sub>FSM</sub>	$T_c = 25 \text{ °C}, T_p = 10 \text{ ms}, \text{ Half sine pulse}$	48	А	
Power Dissipation	D	$T_c = 25 \text{ °C}$	100	W	
	P <sub>Tot</sub>	$T_c = 110 \text{ °C}$	43	VV	
Operating Junction Temperature	T	-	-55 to 175	°C	
Storage Temperature	T <sub>stg</sub>	-	-55 to 150	°C	
Soldering Temperature	T <sub>SOLD</sub>	-	260	°C	



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Characteristics Symbol	Cumhal	O an althion a		Value		
	Symbol	Conditions	Min.	Тур.	Max.	Unit
Forward Voltage V <sub>F</sub>	I <sub>F</sub> = 10 A, T <sub>J</sub> = 25 °C	-	1.5	1.8	V	
	V <sub>F</sub>	I <sub>F</sub> = 10 A, T <sub>J</sub> = 175 °C	-	1.85	-	V
Reverse Current I <sub>R</sub>		$V_{_{ m R}}=650$ V, $T_{_{ m J}}=25$ °C	-	<1	50	
	R	V <sub>R</sub> = 650 V , T <sub>J</sub> = 175 °C	-	25	-	μA
Total Capacitance C	$V_{R} = 1 V$ , f = 1 MHz	-	470	-		
	С	V <sub>R</sub> = 200 V, f = 1 MHz	-	60	-	pF
		V <sub>R</sub> = 400 V, f = 1 MHz	-	43	-	
Total Capacitive Charge	Q <sub>c</sub>	$V_{R} = 400 \text{ V},        $	-	30	-	nC

Thermal Characteristics			
Characteristics	Symbol	Value	Unit
Thermal Resistance	R <sub>eJC</sub>	1.5	°C/W



#### **Figure 1: Typical Foward Characteristics**

#### Figure 2: Typical Reverse Characteristics



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#### Figure 4: Current Derating



#### Figure 5: Capacitance vs. Reverse Voltage



#### Figure 7: Stored Energy vs. Reverse Voltage





#### Figure 6: Capacitive Charge vs. Reverse Voltage



#### Figure 8: Transient Thermal Impedance



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### **GEN2 SiC Schottky Diode** LSIC2SD065A10A, 650V, 10Å, TO-220-2L

Symbol

Α

A1

A2

b

#### Dimensions-Package TO-220-2L

A1





**Recommended Hole Pattern** 

5,08

٥

1,93



Min

4.30

1.14

2.20

0.69

#### Part Numbering and Marking System



=	SiC Diode
=	Gen2
=	Schottky Dio



- = TO-220 Package (2 Lead)
- = Current Rating (10 A)
- = Year
- = Week

ΥY

- = Special Code
- ZZZZZZ-ZZ = Lot Number

Packing Options				
Part Number	Marking	Packing Mode	M.O.Q	
LSIC2SD065A10A	SIC2SD065A10	Tube(50pcs)	1000	

Millimeters

Nom

4.45

1.27

-

Max

4.70

1.40

2.74

0.90

1.62

0.60

15.90

9.40

12.95

10.36

8.30

-

5.13

6.80

14.00

3.25

3.96

3.05

0.25



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#### Packing Specification (Tube for TO-220-2L)



#### [ NOTE ]

- 1. TUBE MATERIAL : PVC / PET (WITH ANTISTATIC COATING)
  - COLOR : TRANSPARENCY, RED, YELLO
  - MARKING #A : BLACK COLOR, LETTER STYLE : Arial
  - Tube Surface Resistance  $:10^{6} \sim 10^{11} \Omega$  /square
  - ESD (Electro Static Discharge) : less than 100 [volts], 6 Months
  - CAMBAR : 1.5 MAX
- 2. PIN COLOR : GREEN (ONE PIN MUST BE INSERTED IN LEFT-SIDE OF "□ANTISTATIC~" AND ANOTHER PIN IS FREE.)

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