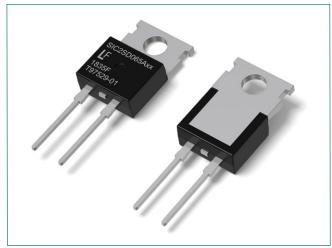
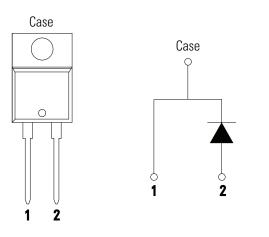
## LSIC2SD065A06A 650 V, 6 A SiC Schottky Barrier Diode



\*Image for reference only, for details refer to Dimensions-Package

#### 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

RoHS 🕅

- 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

- Solar inverters
- Industrial motor drives
- EV charging stations

### Environmental

supplies

- Littelfuse "RoHS" logo = RoHS RoHS conform
- Littelfuse "HF" logo =**HF** Halogen Free
- Littelfuse "Pb-free" logo
  Pb-free lead plating
- Characteristics Symbol Conditions Value Unit Repetitive Peak Reverse Voltage 650 V  $V_{\rm RRM}$ -DC Blocking Voltage T\_= 25 °C 650 V V<sub>R</sub>  $T_c = 25 \ ^{\circ}C$ 18.5 Continuous Forward Current  $I_{F}$ T<sub>c</sub> = 135 °C 8.6 А  $T_{c} = 152 \ ^{\circ}C$ 6 Non-Repetitive Forward Surge Current  $T_c = 25 \text{ °C}, T_p = 10 \text{ ms}, \text{ Half sine pulse}$ 32 А I<sub>FSM</sub> T<sub>c</sub> = 25 °C 75 Power Dissipation W  $\mathsf{P}_{_{\text{Tot}}}$  $T_{c} = 110 \ ^{\circ}C$ 32 -55 to 175 °C Operating Junction Temperature Τ, --55 to 150 °C Storage Temperature T<sub>STG</sub> Soldering Temperature 260 °C T<sub>SOLD</sub>

#### **Maximum Ratings**

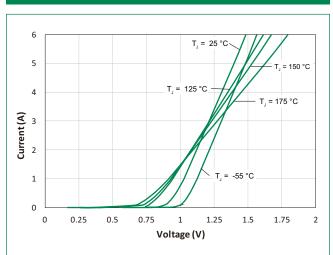


# GEN2 SiC Schottky Diode LSIC2SD065A06A, 650V, 6A, T0-220-2L

<b>Electrical Characteristics (</b>	Т	=25 °C unless of	herwise specified)
Electrical characteristics (	- I		ner wise specifica,

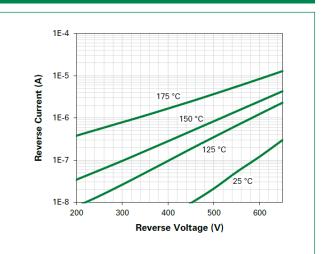
Oh ave stavistics	Complete		Value			
Characteristics Symbol	Conditions	Min.	Тур.	Max.	Unit	
Forward Voltage V <sub>F</sub>	I <sub>F</sub> = 6 A, T <sub>J</sub> = 25 °C	-	1.5	1.8		
	V <sub>F</sub>	I <sub>F</sub> = 6 A, Τ <sub>J</sub> = 175 °C	-	1.85	-	V
Reverse Current I <sub>R</sub>	V <sub>R</sub> = 650 V , T <sub>J</sub> = 25 °C	-	<1	50		
	V <sub>R</sub> = 650 V , T <sub>J</sub> = 175 °C	-	15	-	μA	
Capacitance C	V <sub>R</sub> = 1 V, f = 1 MHz	-	300	-		
	V <sub>R</sub> = 200 V, f = 1 MHz	-	39	-	pF	
	V <sub>R</sub> = 400 V, f = 1 MHz	-	28	-		
Total Capacitive Charge	Q <sub>c</sub>	$V_{R} = 400 \text{ V},  Q_{c} = \int C(V) dV$	-	20	-	nC

Thermal Characteristics				
Characteristics	Symbol	Value	Unit	
Thermal Resistance	R <sub>ejc</sub>	2.0	°C/W	



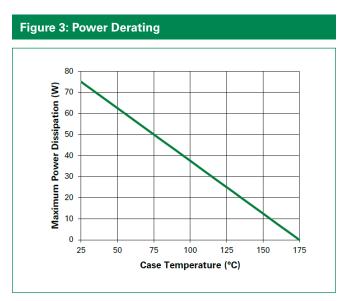
#### **Figure 1: Typical Foward Characteristics**

#### **Figure 2: Typical Reverse Characteristics**

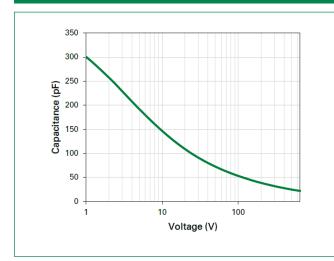


## Littelfuse Power

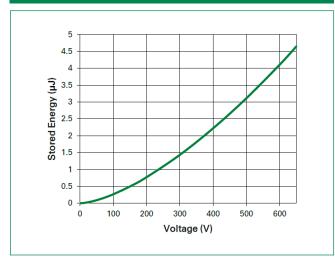
### **GEN2 SiC Schottky Diode** LSIC2SD065A06A, 650V, 6A, T<u>0-220-2L</u>



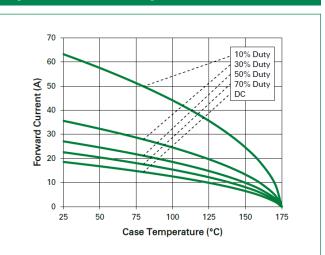
#### Figure 5: Capacitance vs. Reverse Voltage



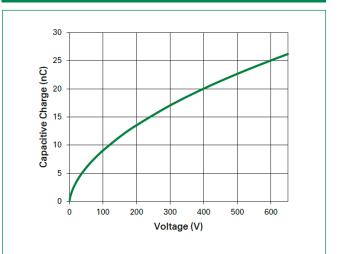
#### Figure 7: Stored Energy vs. Reverse Voltage



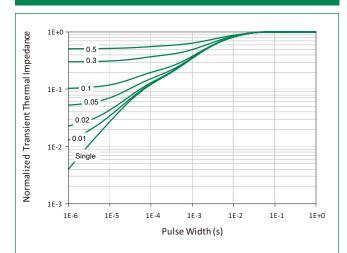
#### Figure 4: Current Derating



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



#### Figure 8: Transient Thermal Impedance



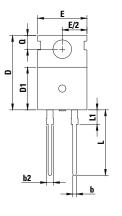
<sup>© 2020</sup> Littelfuse, Inc. Specifications are subject to change without notice. Revised: 10/16/20

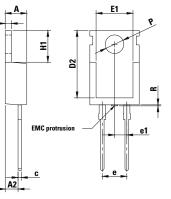
## Littelfuse Power

# GEN2 SiC Schottky Diode LSIC2SD065A06A, 650V, 6A, TO-220-2L

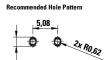
#### Dimensions-Package TO-220-2L

<u>A1</u>





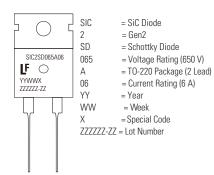
1,93



UNIT: mm

Complete	Millimeters				
Symbol	Min	Nom	Max		
А	4.30	4.45	4.70		
A1	1.14	1.27	1.40		
A2	2.20	-	2.74		
b	0.69	-	0.90		
b2	1.17	-	1.62		
С	0.36	-	0.60		
D	14.90	-	15.90		
D1	8.62	-	9.40		
D2	12.50	-	12.95		
E	9.70	10.18	10.36		
E1	7.57	7.61	8.30		
e1	-	2.54	-		
е	5.03	5.08	5.13		
H1	6.30	6.55	6.80		
L	12.88	13.50	14.00		
L1	2.39	-	3.25		
øP	3.50	3.84	3.96		
٥	2.65	-	3.05		
R	-	-	0.25		

#### Part Numbering and Marking System

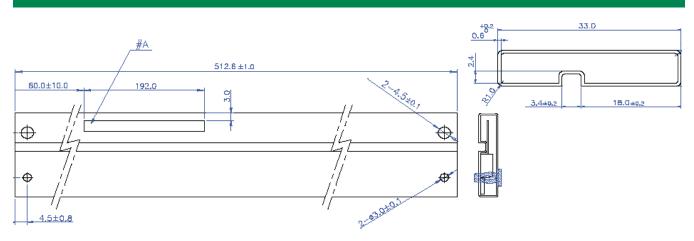


Packing Options						
Part Number	Marking	Packing Mode	M.O.Q			
LSIC2SD065A06A	SIC2SD065A06	Tube(50pcs)	1000			



### **GEN2 SiC Schottky Diode** LSIC2SD065A06A, 650V, 6A, TO-220-2L

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



#### NOTE ]

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

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.

## **X-ON Electronics**

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Schottky Diodes & Rectifiers category:

Click to view products by Littelfuse manufacturer:

Other Similar products are found below :

MA4E2039 D1FH3-5063 MBR10100CT-BP MBR1545CT MMBD301M3T5G RB160M-50TR RB551V-30 BAS16E6433HTMA1 BAT 54-02LRH E6327 NSR05F40QNXT5G NTE555 JANS1N6640 SB07-03C-TB-H SB1003M3-TL-W SK310-T SK32A-LTP SK34B-TP SS3003CH-TL-E GA01SHT18 CRS10I30A(TE85L,QM MA4E2501L-1290 MBRB30H30CT-1G SB007-03C-TB-E SK32A-TP SK33B-TP SK38B-TP NRVBM120LT1G NTE505 NTSB30U100CT-1G SS15E-TP VS-6CWQ10FNHM3 ACDBA1100LR-HF ACDBA1200-HF ACDBA140-HF ACDBA2100-HF ACDBA3100-HF CDBQC0530L-HF CDBQC0240LR-HF ACDBA260LR-HF ACDBA1100-HF SK310B-TP MA4E2502L-1246 MA4E2502H-1246 NRVBM120ET1G NSR01L30MXT5G NTE573 NTE6081 SB560 PMAD1108-LF SD103ATW-TP