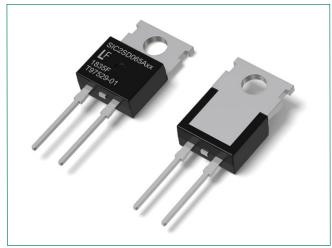
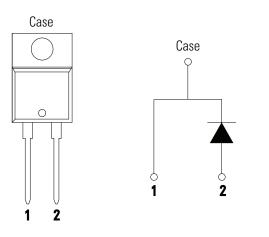
## LSIC2SD065A06A 650 V, 6 A SiC Schottky Barrier Diode



\*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**

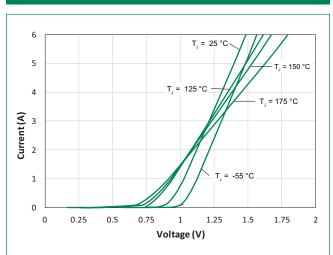


# GEN2 SiC Schottky Diode LSIC2SD065A06A, 650V, 6A, T0-220-2L

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

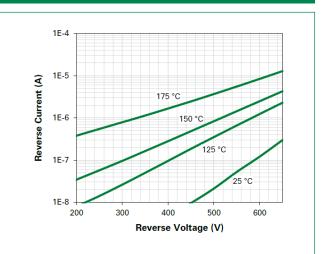
Oh ave stavistics	Complete		Value			
Characteristics Symbol	Conditions	Min.	Тур.	Max.	Unit	
Forward Voltage V <sub>F</sub>	I <sub>F</sub> = 6 A, T <sub>J</sub> = 25 °C	-	1.5	1.8		
	V <sub>F</sub>	I <sub>F</sub> = 6 A, Τ <sub>J</sub> = 175 °C	-	1.85	-	V
Reverse Current I <sub>R</sub>	V <sub>R</sub> = 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	



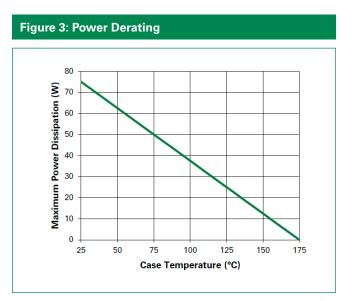
#### **Figure 1: Typical Foward Characteristics**

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

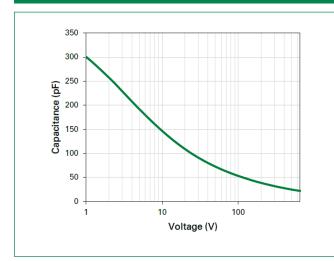


## Littelfuse Power

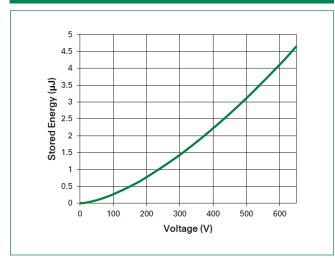
### **GEN2 SiC Schottky Diode** LSIC2SD065A06A, 650V, 6A, T<u>0-220-2L</u>



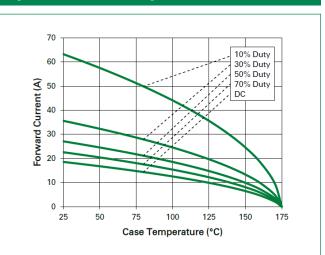
#### Figure 5: Capacitance vs. Reverse Voltage



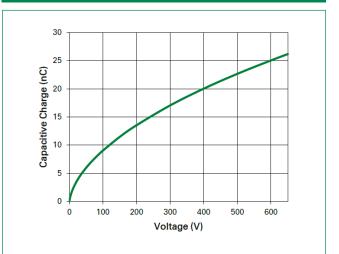
#### Figure 7: Stored Energy vs. Reverse Voltage



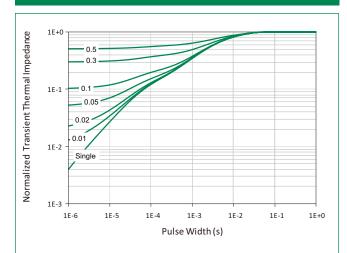
#### Figure 4: Current Derating



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



#### Figure 8: Transient Thermal Impedance



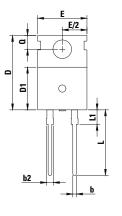
<sup>© 2020</sup> Littelfuse, Inc. Specifications are subject to change without notice. Revised: 10/16/20

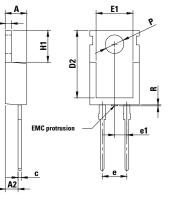
# Littelfuse Power

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

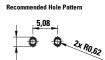
#### Dimensions-Package TO-220-2L

<u>A1</u>





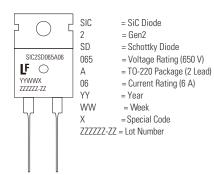
1,93



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

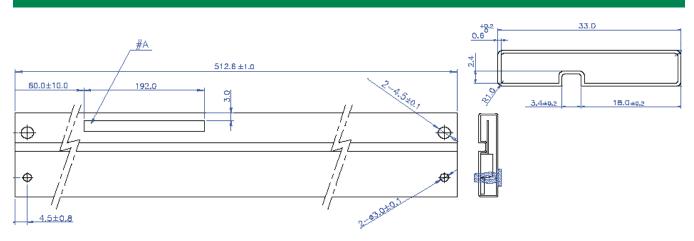


Packing Options						
Part Number	Marking	Packing Mode	M.O.Q			
LSIC2SD065A06A	SIC2SD065A06	Tube(50pcs)	1000			



### **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.)

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