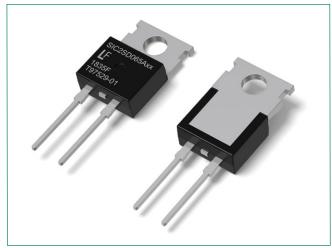
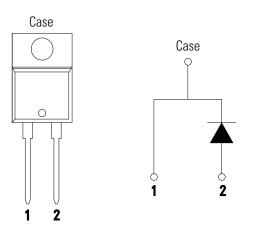
LSIC2SD065A06A 650 V, 6 A SiC Schottky Barrier Diode



*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_R $T_c = 25 \ ^{\circ}C$ 18.5 Continuous Forward Current I_{F} T_c = 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_{FSM} T_c = 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_{STG} Soldering Temperature 260 °C T_{SOLD}

Maximum Ratings



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

Electrical Characteristics (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 _F	I _F = 6 A, T _J = 25 °C	-	1.5	1.8		
	V _F	I _F = 6 A, Τ _J = 175 °C	-	1.85	-	V
Reverse Current I _R	V _R = 650 V , T _J = 25 °C	-	<1	50		
	V _R = 650 V , T _J = 175 °C	-	15	-	μA	
Capacitance C	V _R = 1 V, f = 1 MHz	-	300	-		
	V _R = 200 V, f = 1 MHz	-	39	-	pF	
	V _R = 400 V, f = 1 MHz	-	28	-		
Total Capacitive Charge	Q _c	$V_{R} = 400 \text{ V}, Q_{c} = \int C(V) dV$	-	20	-	nC

Thermal Characteristics				
Characteristics	Symbol	Value	Unit	
Thermal Resistance	R _{ejc}	2.0	°C/W	

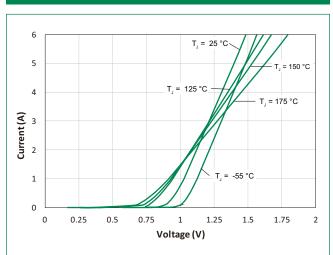
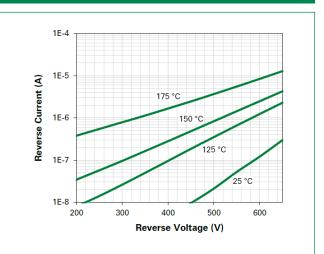


Figure 1: Typical Foward Characteristics

Figure 2: Typical Reverse Characteristics



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

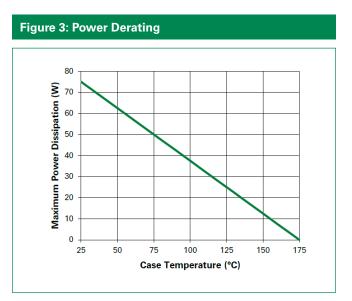


Figure 5: Capacitance vs. Reverse Voltage

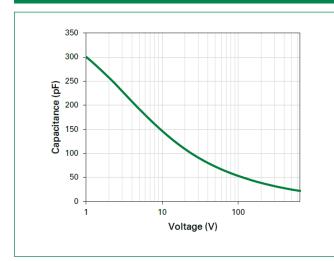


Figure 7: Stored Energy vs. Reverse Voltage

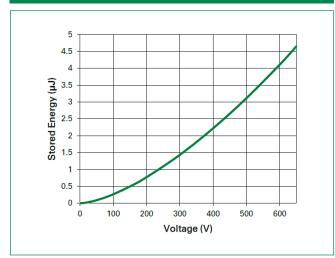


Figure 4: Current Derating

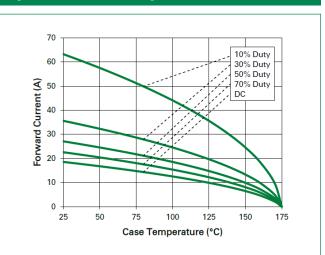


Figure 6: Capacitive Charge vs. Reverse Voltage

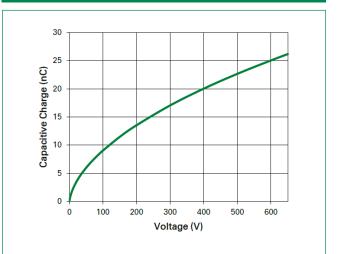
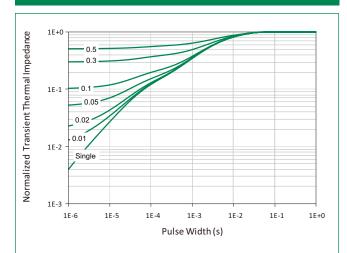


Figure 8: Transient Thermal Impedance



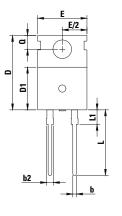
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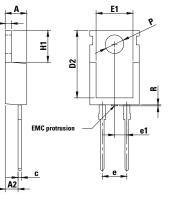
Littelfuse Power

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

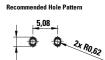
Dimensions-Package TO-220-2L

<u>A1</u>





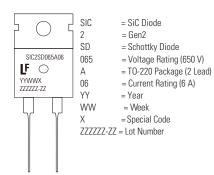
1,93



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

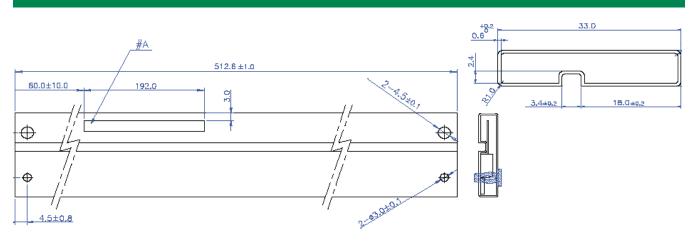


Packing Options						
Part Number	Marking	Packing Mode	M.O.Q			
LSIC2SD065A06A	SIC2SD065A06	Tube(50pcs)	1000			



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 :10⁶~10¹¹Ω/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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