Littelfuse Power

GEN2 SiC Schottky Diode LSIC2SD065D06A, 650 V, 6 A, TO-263-2L (D2PAK)

LSIC2SD065D06A 650 V, 6 A SiC Schottky Barrier Diode

HF Rohs 🗭

• Excellent surge capability

temperature-independent

Extremely fast,

switching behavior

• Dramatically reduced

compared to Si bipolar

• Industrial motor drives

• EV charging stations

switching losses

diodes

• Solar inverters



Circuit Diagram TO-263-2L



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

Applications

- Boost diodes in PFC or DC/DC stages
- Switch-mode power supplies
- Uninterruptible power supplies

Environmental

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

Maximum Ratings

Characteristics	Symbol	Conditions	Value	Unit	
Repetitive Peak Reverse Voltage	V _{RRM}	-	650	V	
DC Blocking Voltage	V _R	T _J = 25 °C	650	V	
Continuous Forward Current		T _c = 25 °C	18.5	А	
	I _F	T _c = 135 °C	8.6		
		$T_c = 152 \text{ °C}$	6		
Non-Repetitive Forward Surge Current	I _{FSM}	$T_c = 25 \text{ °C}, T_p = 10 \text{ ms}, \text{ Half sine pulse}$	32	A	
Power Dissipation		$T_c = 25 \text{ °C}$	75		
	P _{Tot}	$T_c = 110 \text{ °C}$	32	A	
Operating Junction Temperature	TJ	-	-55 to +175	°C	
Storage Temperature	T _{stg}	-	-55 to +150	°C	
Soldering Temperature (reflow MSL 1)	T _{SOLD}	-	260	°C	

Characteristics	Symbol	Conditions		Value		
			Min.	Тур.	Max.	Unit
Forward Voltage		I _F = 6 A, Τ _J = 25 °C	-	1.5	1.8	V
	V _F	I _F = 6 A, Τ _J = 175 °C	-	1.85	-	
Reverse Current		V _R = 650 V , T _J = 25 °C	-	<1	50	μA
	R	V _R = 650 V , T _J = 175 °C	-	15	-	
Capacitance		$V_{_{\mathrm{R}}} = 1 \text{ V}, \text{ f} = 1 \text{ MHz}$	-	300	-	
	С	$V_{_{\rm R}} = 200 \text{ V}, \text{ f} = 1 \text{ MHz}$	-	39	-	pF
		$V_{_{ m R}} = 400 \text{ V}, \text{ f} = 1 \text{ MHz}$	-	28	-	
Total Capacitive Charge	Q _c	$V_{R} = 400 \text{ V}, $	-	20	-	nC

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



Figure 1: Typical Foward Characteristics

Figure 2: Typical Reverse Characteristics





Figure 5: Capacitance vs. Reverse Voltage







Figure 4: Current Derating



Figure 6: Capacitive Charge vs. Reverse Voltage



Figure 8: Transient Thermal Impedance



Dimensions-Package TO-263-2L



Part N	umbering	and Ma	irkina S	vstem



- = SiC Diode = Gen2
- = Schottky Diode
- = Voltage Rating (650 V)
- = TO-263 Package (2 Lead)
- = Current Rating (6 A) = Year
- = Week
- = Special Code ZZZZZ-ZZ = Lot Number

Symbol	Millimeters			
Symbol	Min	Nom	Max	
А	4.30	4.50	4.70	
A1	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	
Е	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			

Packing Option

Part Number	Marking	Packing Mode	M.O.Q
LSIC2SD065D06A	SIC2SD065D06	Tape and Reel	800



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TO-263 Carrier Reel Specifications



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