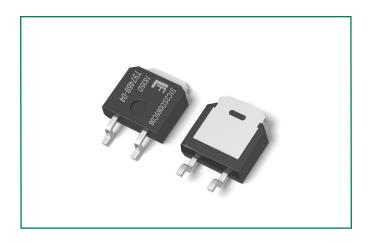
GEN2 SiC Schottky Diode LSIC2SD065C06A, 650 V, 6 A, TO-252-2L (DPAK)

LSIC2SD065C06A 650 V, 6 A SiC Schottky Barrier Diode









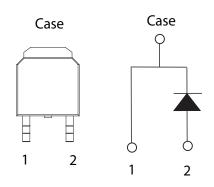
Description

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

Circuit Diagram TO-252-2L (DPAK)



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 lead plating

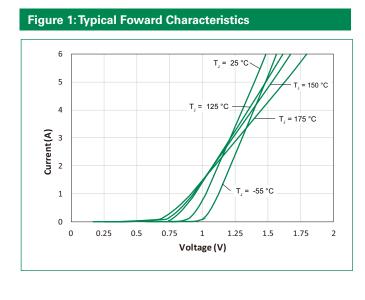
Maximum Ratings

Characteristics	Symbol	Conditions	Value	Unit	
Repetitive Peak Reverse Voltage	V _{RRM}	-	650	V	
DC Blocking Voltage	V _R	T _J = 25 °C	650	V	
		T _C = 25 °C	18.5		
Continuous Forward Current	l _F	T _C = 135 °C	8.6	А	
		T _C = 152 °C	6		
Non-Repetitive Forward Surge Current	I _{FSM}	$T_C = 25$ °C, $T_P = 10$ ms, Half sine pulse	32	А	
Power Dissipation	В	T _C = 25 °C	75	W	
rower dissipation	P _{Tot}	T _C = 110 °C	32	VV	
Operating Junction Temperature	T _J	-	-55 to +175	°C	
Storage Temperature	T _{STG}	-	-55 to +150	°C	
Soldering Temperature (reflow MSL 1)	T _{SOLD}	-	260	°C	

GEN2 SiC Schottky Diode LSIC2SD065C06A, 650 V, 6 A, TO-252-2L (DPAK)

Electrical Characteristics							
Characteristics		Conditions	Value				
	Symbol		Min.	Тур.	Max.	Unit	
Forward Voltage V _F	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	I _F = 6 A, T _J = 25 °C	-	1.5	1.8	1.8 V	
	V _F	I _F = 6 A, T _J = 175 °C	-	1.85	-	V	
Reverse Current		$V_{R} = 650 V, T_{J} = 25 ^{\circ}C$	-	<1	50	μA	
	I _R	$V_{R} = 650 \text{V} , T_{J} = 175 ^{\circ}\text{C}$	-	15	-	μΑ	
Capacitance C		$V_R = 1 \text{ V, f} = 1 \text{ MHz}$	-	300	-		
	С	V _R = 200 V, f = 1 MHz	-	39	-	pF	
		V _R = 400 V, f = 1 MHz	-	28	-		
Total Capacitive Charge	Q _c	$V_R = 400 \text{ V}, \ \ Q_C = \int\limits_0^{V_R} c(v) dv$	-	20	-	nC	

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



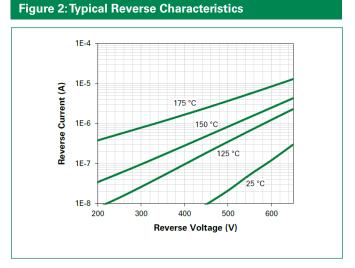




Figure 3: Power Derating

80

(N) voice of the control of the cont

Case Temperature (°C)

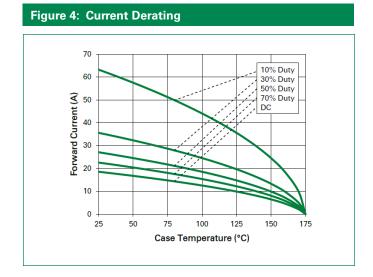
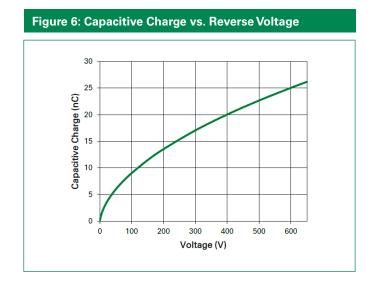
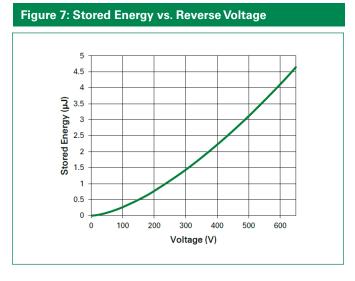
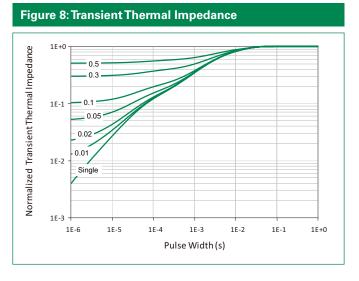


Figure 5: Capacitance vs. Reverse Voltage

350
300
(30)
250
100
50
0
1 10 100
Voltage (V)



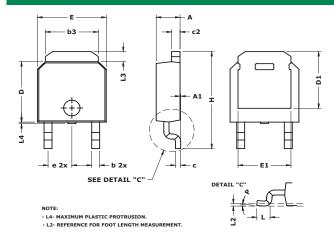




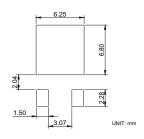


GEN2 SiC Schottky Diode LSIC2SD065C06A, 650 V, 6 A, TO-252-2L (DPAK)

Dimensions TO-252-2L (DPAK)

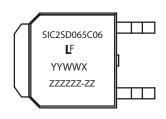


Recommended Solder Pattern Layout



Symbol	Inches			Millimeters		
Зупівої	Min	Nom	Max	Min	Nom	Max
А	0.085	0.090	0.095	2.16	2.29	2.41
A1	0	0.003	0.005	0	0.08	0.13
b	0.025	0.030	0.035	0.64	0.76	0.89
b3	0.195	0.200	0.215	4.95	5.08	5.46
С	0.018	0.020	0.024	0.46	0.51	0.61
C2	0.018	0.032	0.035	0.46	0.81	0.89
D	0.235	0.240	0.245	5.97	6.10	6.22
D1	0.205	-	-	5.21	-	-
E	0.250	0.260	0.265	6.35	6.60	6.73
E1	0.170	-	-	4.32	-	-
е	0.090 BSC			2.29 BSC		
Н	0.370	0.387	0.410	9.40	9.83	10.41
L	0.040	0.045	0.050	1.02	1.14	1.27
L2	0.010 BSC			0.25 BSC		
L3	0.035	-	0.050	0.89	-	1.27
L4	0	-	0.006	0	-	0.15
Р	0°	-	8°	0°	-	8°

Part Numbering and Marking System



 SIC
 = SiC Diode

 2
 = Gen2

 SD
 = Schottky Diode

 065
 = Voltage Rating (650 V)

 C
 = TO-252-2L (DPAK)

 06
 = Current Rating (6 A)

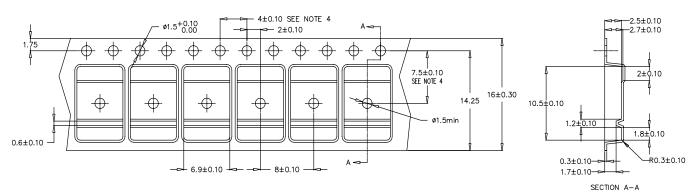
 YY
 = Year

WW = Week
X = Special code
ZZZZZZ-ZZ = Lot Number

Packing Options

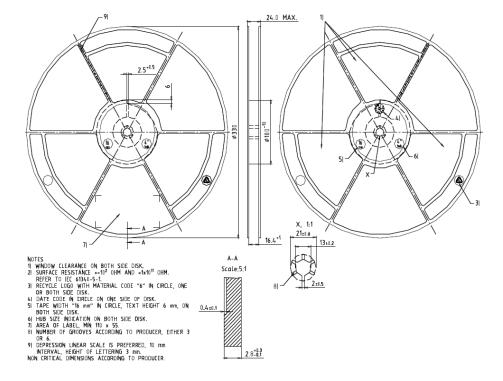
Part Number	Marking	Packing Mode	M.O.Q
LSIC2SD065C06A	SIC2SD065C06	Tape and Reel	2500

Carrier Tape & Reel Specification TO-252-2L (DPAK)



- Material: Black Conductive Polysterene

- 1. Material: Biack Conductive Polysterene
 2. 10 sprocket hole pitch cumulative tolerance ± 0.20
 3. Camber not to exceed 1 mm in 100 mm.
 4. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.
 5. Device orientation: TRL (leads perpendicular to the sprocket)
- 6. General tolerance is \pm 0.10 mm unless otherwise specified.



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.