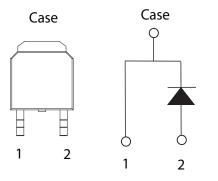
LSIC2SD065C06A 650 V, 6 A SiC Schottky Barrier Diode



Circuit Diagram TO-252-2L (DPAK)



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

HF

RoHS

Po

- 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
- Solar inverters
- Industrial motor drives
- EV charging stations
- supplies
- Uninterruptible power supplies

Environmental

- Littelfuse "RoHS" logo = RoHS **RoHS** conform
- Littelfuse "HF" logo = HF Halogen Free
- Littelfuse "Pb-free" logo = (P6) Pb-free lead plating

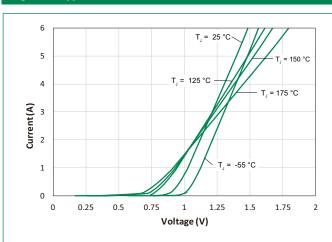
Characteristics	Symbol	Conditions	Value	Unit		
Repetitive Peak Reverse Voltage	V _{RRM}	-	650	V		
DC Blocking Voltage	V _R	T _J = 25 °C	650	V		
Continuous Forward Current		T _c = 25 °C	18.5	A		
	۱ _۴	T _c = 135 °C	8.6			
		T _c = 152 °C	6			
Non-Repetitive Forward Surge Current	I _{FSM}	$T_c = 25 \text{ °C}, T_p = 10 \text{ ms}, \text{ Half sine pulse}$	32	А		
Power Dissipation	P _{Tot}	$T_c = 25 \ ^{\circ}C$	75	W		
		T _c = 110 °C	32	vv		
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		

Maximum Ratings

Electrical Characteristics						
Characteristics	Symbol	Conditions	Value			
			Min.	Тур.	Max.	Unit
Forward Voltage		I _F = 6 A, T _J = 25 °C	-	1.5	1.8	V
	V _F	I _F = 6 A, T _J = 175 °C	-	1.85	-	V
Reverse Current	I _R	V _R = 650 V , T _J = 25 °C	-	<1	50	μA
		$V_{_{ m R}} = 650 \text{ V}$, $T_{_{ m J}} = 175 \ ^{\circ}\text{C}$	-	15	-	
Capacitance	С	$V_{_{\mathrm{R}}} = 1 \text{ V, } \text{f} = 1 \text{ MHz}$	-	300	-	
		V _R = 200 V, f = 1 MHz	-	39	-	pF
		V _R = 400 V, f = 1 MHz	-	28	-	
Total Capacitive Charge	Q _c	$V_{R} = 400 \text{ V}, \ \mathbf{Q}_{C} = \int_{0}^{V_{R}} C(V) dV$	-	20	-	nC

Thermal Characteristics

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



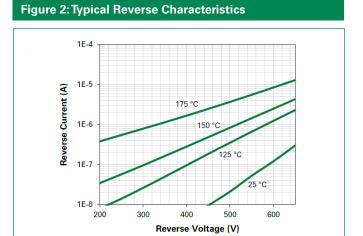
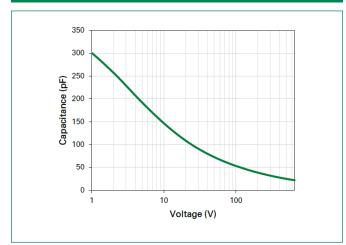
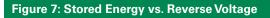


Figure 1: Typical Foward Characteristics

Figure 3: Power Derating

Figure 5: Capacitance vs. Reverse Voltage





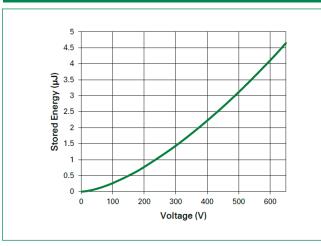


Figure 4: Current Derating

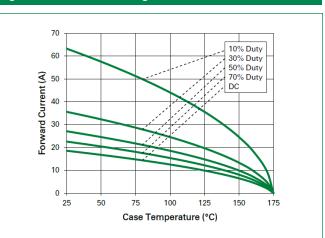


Figure 6: Capacitive Charge vs. Reverse Voltage

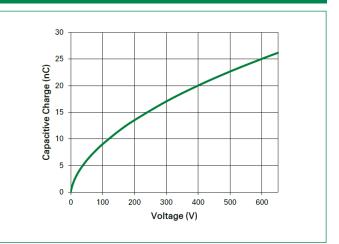
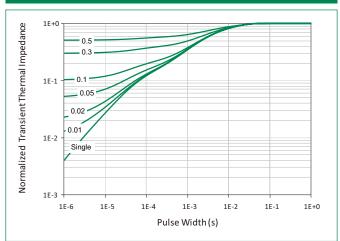
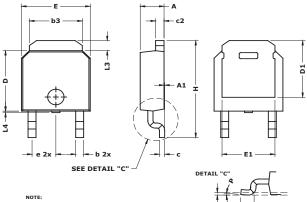


Figure 8: Transient Thermal Impedance



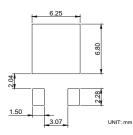
GEN2 SiC Schottky Diode LSIC2SD065C06A, 650 V, 6 A, TO-252-2L (DPAK)

Dimensions TO-252-2L (DPAK)



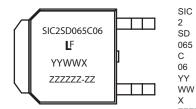
- L4- MAXIMUM PLASTIC PROTRUSION. - L2- REFERENCE FOR FOOT LENGTH MEASUREMENT.

Recommended Solder Pattern Layout



Cumphiel	Inches			Millimeters		
Symbol	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	Diode
=	Ger	12

= Schottky Diode = Voltage Rating (650 V)

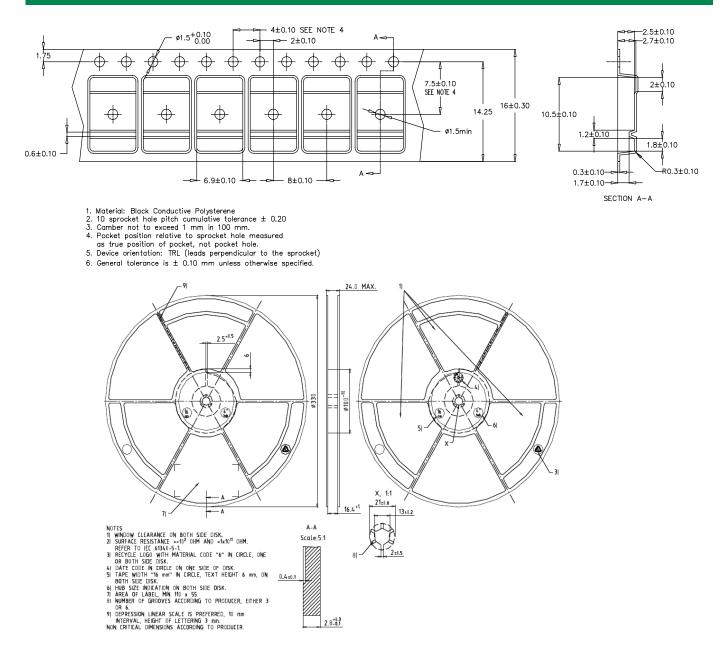
- = TO-252-2L (DPAK)
- = Current Rating (6 A)
- = Year
- = Year = Week
- = Special code

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)



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