

## SILICON CARBIDE SCHOTTKY DIODE

**REVERSE VOLTAGE – 650 Volts**  
**FORWARD CURRENT – 10 Amperes**

### FEATURES

- Positive temperature coefficient for safe operation and easy of paralleling
- 175°C maximum operating junction temperature
- Extremely fast switching not dependent on temperature
- Essentially no reverse or forward recovery
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

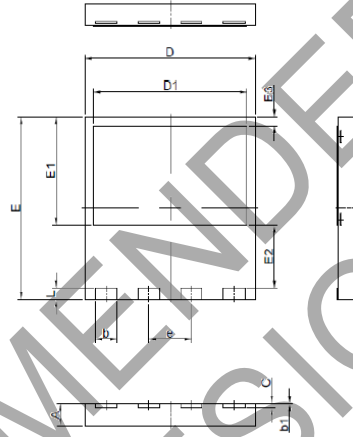
### APPLICATION

- Power converters
- Switching-mode power supplies
- Power factor correction modules

### MECHANICAL DATA

- Package: DFN8080 molded plastic
- Package Material: “Green” molding compound, UL flammability classification 94V-0, “Halogen-free”.
- Moisture Sensitivity Level 1 per J-STD-020
- Lead free finish, RoHS compliant
- Weight: 0.214 grams (Approximate)
- Marking code: LSC10065Q8

### DFN8080



DFN8080			
DIM.	MIN.	MAX.	TYP.
A	0.90	1.10	1.00
b	0.90	1.10	1.00
b1	0	0.05	0.02
C	0.20 REF.		
D	7.90	8.10	8.00
D1	7.10	7.30	7.20
E	7.90	8.10	8.00
E1	4.65	4.85	4.75
E2	2.65	2.85	2.75
E3	0.30	0.50	0.40
e	2.0 BSC		
L	0.40	0.60	0.50
All Dimension in millimeter			

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

#### ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	650	V
Maximum DC blocking voltage	$V_{DC}$	650	V
Maximum Average rectified output current	$I_{(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	$I_{FSM}$	40	A
Operating junction and Storage Temperature range	$T_J, T_{STG}$	-55 ~ +175	°C

#### STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=10A$ $T_J=25^\circ C$ $T_J=175^\circ C$	$V_F$	-- 2.21	1.70 2.25	V
Reverse Leakage current	$V_R=650V$ $T_J=25^\circ C$ $T_J=175^\circ C$	$I_R$	-- 173	250 550	uA
Typical junction capacitance (Note 5)		$C_J$		310	pF

#### DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	UNIT
Total capacitive charge	$V_R=400V, dl/dt=250A/us, I_F=10A$	$Q_C$	24	nC

#### THERMAL CHARACTERISTICS

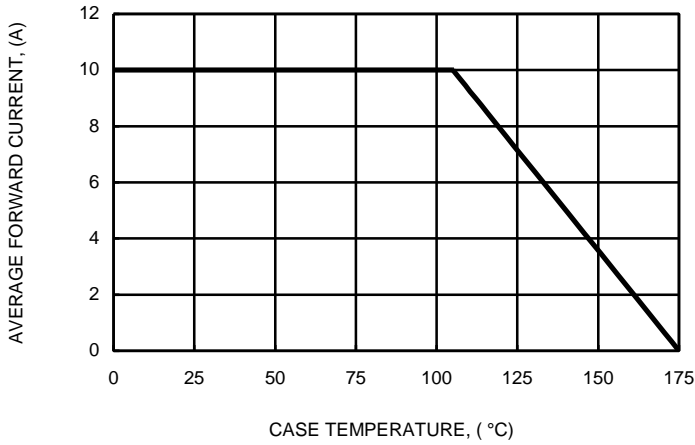
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6,7)	$R_{thJC}$	3	°C/W
	$R_{thJL}$	4	°C/W

#### Note:

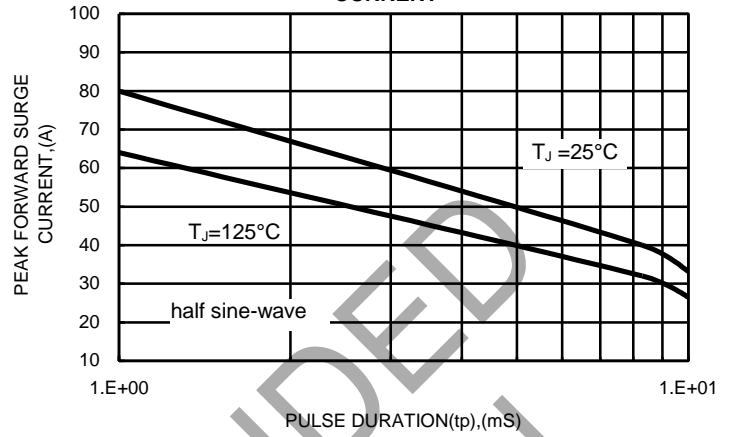
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 300us pulse width, 2% duty cycle.
5. Measured at 1.0MHz and applied voltage of 1.0V DC.
6. Thermal resistance test performed in accordance with JESD-51.
7. The unit mounted on cooper heatsink (50mm x 50mm x 1.5mm) & Aluminum fin type heat sink (75mm x 100mm x 25mm).

**RATING AND CHARACTERISTIC CURVES**  
**LSC10065Q8**

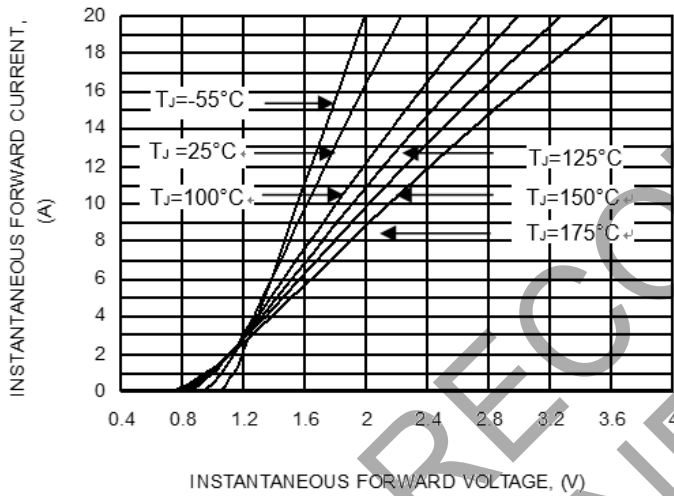
**FIG.1 FORWARD CURRENT DERATING CURVE**



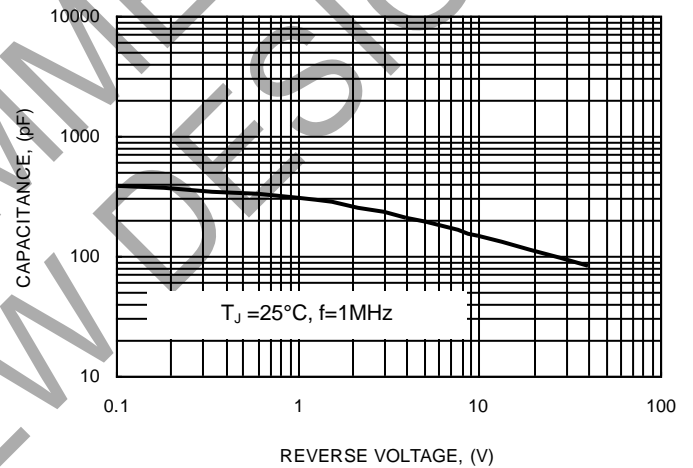
**FIG.2 NON-REPETITIVE PEAK SURGE FORWARD CURRENT**



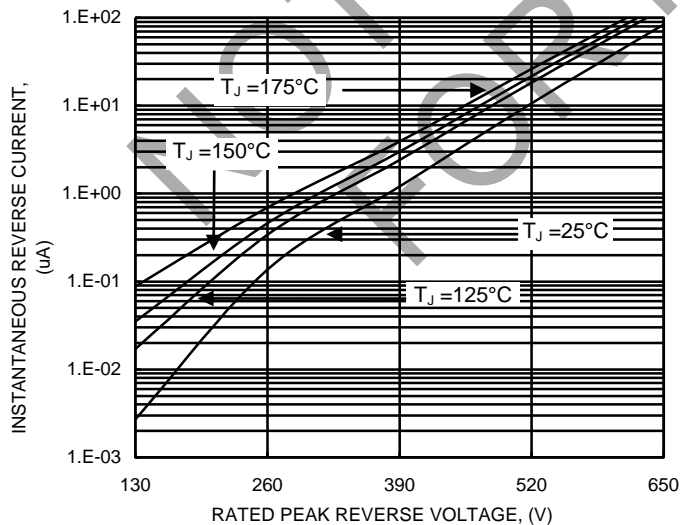
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



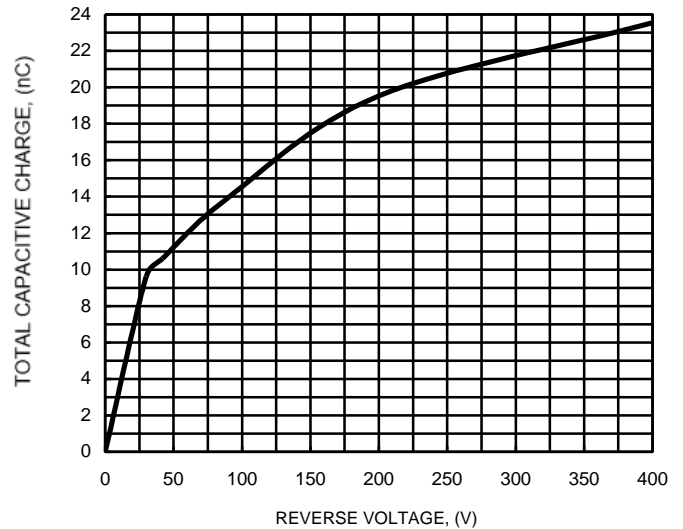
**FIG.4 TYPICAL JUNCTION CAPACITANCE**



**FIG.5 TYPICAL REVERSE CHARACTERISTICS**



**FIG.6 TYPICAL CAPACITIVE CHARGES**



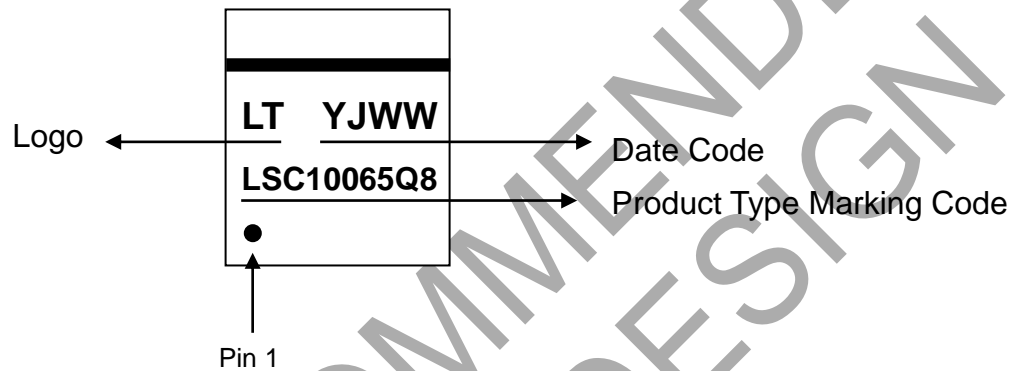
**MECHANICAL AND MARKING INFORMATION**  
**LSC10065Q8**

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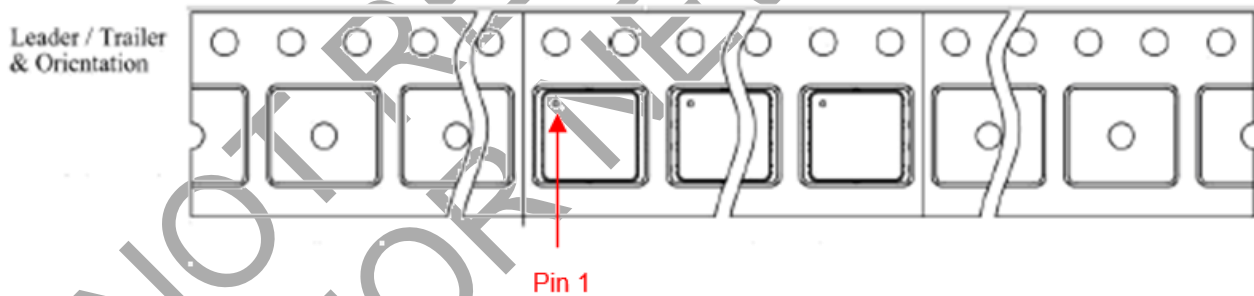
**Ordering Information:**

Part Number	Package	Packing	
		Qty.	Carrier
LSC10065Q8	DFN8080	2500	Tape & Reel

**Marking Information:**



**Packaging Information:**

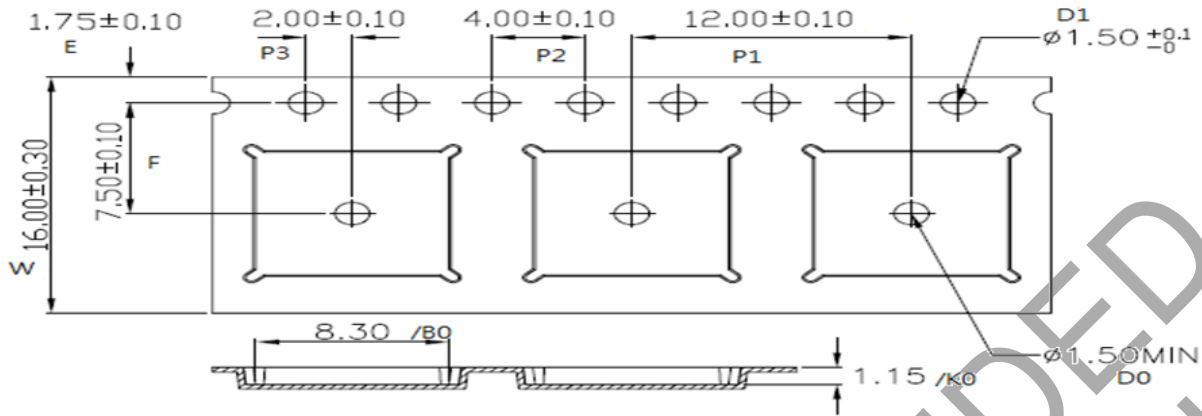


DEVICE	Q'TY/REEL (PCS)	REEL DIA. (mm)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)	BOX SIZE (mm)	CARTON SIZE (mm)
LSC10065Q8	2.5K	330	2.5K	25K	345x355x30	355x346x376

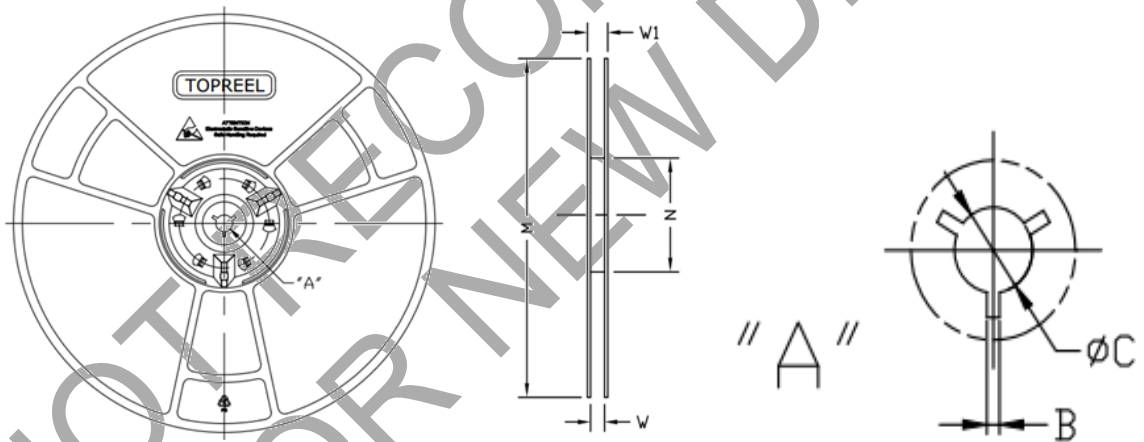
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**Embossed Carrier Dimensions Information:**



TAPE SIZE	D0	E	P1	P2	P3	UNIT
16mm	1.50/MIN	1.75+/-0.10	12.0+/-0.10	4.0+/-0.1	2.0+/-0.10	mm
	B0	W	F	K0		
	8.3	16+/-0.30	7.5+/-0.1	1.15		



UNIT:mm

TYPE SIZE	REEL SIZE	M	N	W	W1	B	C
16mm	∅330	∅330 +/-0.50	∅102 +/-0.50	16 +/-0.50	17.4 +/-0.5	2.0 +/-0.5	∅13.11 +/-0.50

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