A Product Line of Diodes Incorporated

LITE-ON SEMICONDUCTOR

LSC08065W

SILICON CARBIDE SCHOTTKY DIODE

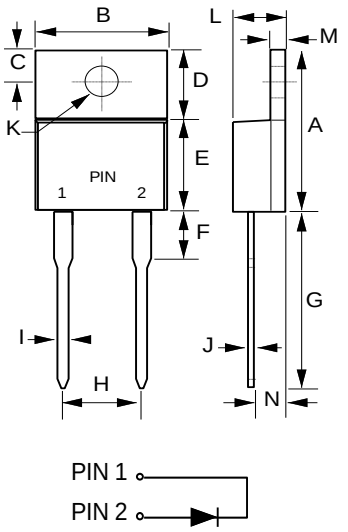
REVERSE VOLTAGE – 650 Volts
FORWARD CURRENT – 8 Amperes

FEATURES
- Positive temperature coefficient for safe operation and easy of paralleling
- 175℃ maximum operating junction temperature
- Essentially no reverse or forward recovery
- Extremely fast switching not dependent on temperature
- Qualification is according to AEC-Q101 Rev_D
- **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: JEDEC TO-220AC
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".
- Lead free finish, RoHS compliant
- Weight: 1.894 grams (Approximate)
- Marking code: LSC08065W

TO-220AC



TO-220AC		
DIM	MIN	MAX
A	14.40	15.20
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	8.26	9.28
F	--	4.2
G	12.70	14.73
H	4.83	5.33
I	0.51	1.14
J	0.30	0.64
K	3.53 Ø	4.09Ø
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
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	@T_C=120°C	$I_{(AV)}$	8	A
Peak forward surge current 8.3ms single half sine-wave Superimposed on rated load.		I_{FSM}	48	A
Single Pulse Avalanche Energy	@L=5mH	E_{AS}	67	mJ
Operating junction and Storage Temperature range		T_J, T_{STG}	-55 to +175	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS		SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	I_F=8A	T_J=25°C T_J=175°C	V_F	-- 1.90	1.70 2.25	V
Leakage current	V_R=650V	T_J=25°C T_J=175°C	I_R	-- 12.7	230 700	uA
Typical junction capacitance (Note 5)			C_J	245		pF

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	UNIT
Total Capacitive Charge	I_F=8A ,V_R=400V,dI/dt= 250A/uS,	Q_C	17	nC

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	$RthJ_C$ $RthJ_L$	3 2	°C/W

Notes:
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 fin-type heatsink 44mm x 30mm x 23.8mm.

RATING AND CHARACTERISTIC CURVES
LSC08065W

FIG.1 FORWARD CURRENT DERATING CURVE

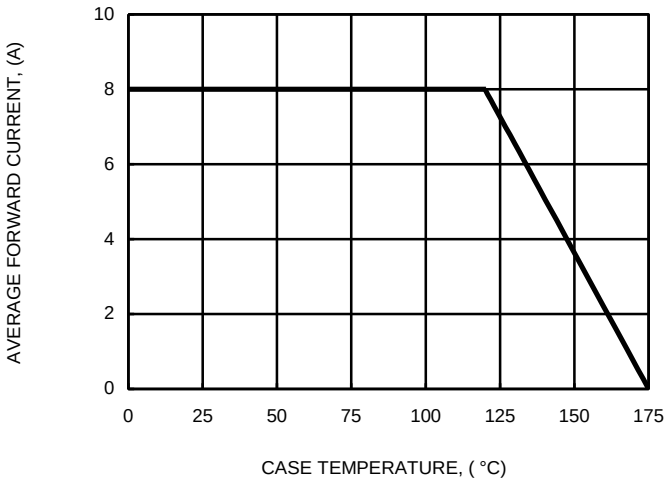


FIG.2 NON-REPETITIVE PEAK SURGE FORWARD CURRENT

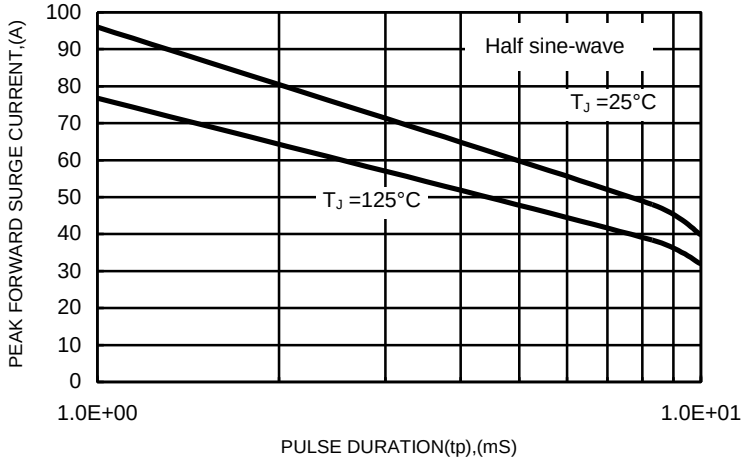


FIG.3 TYPICAL FORWARD CHARACTERISTICS

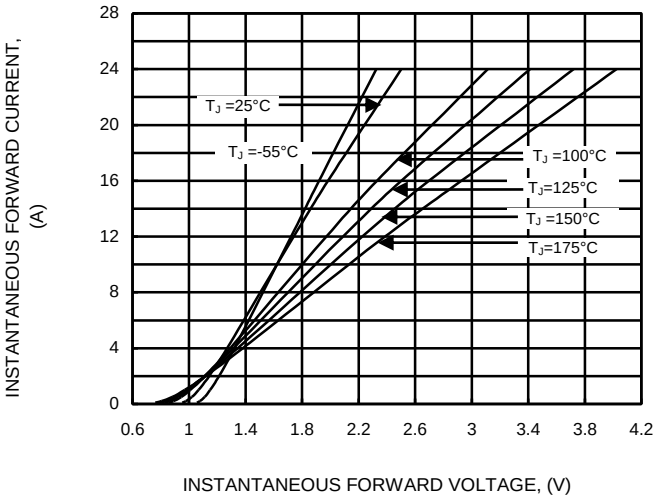


FIG.4 TYPICAL JUNCTION CAPACITANCE

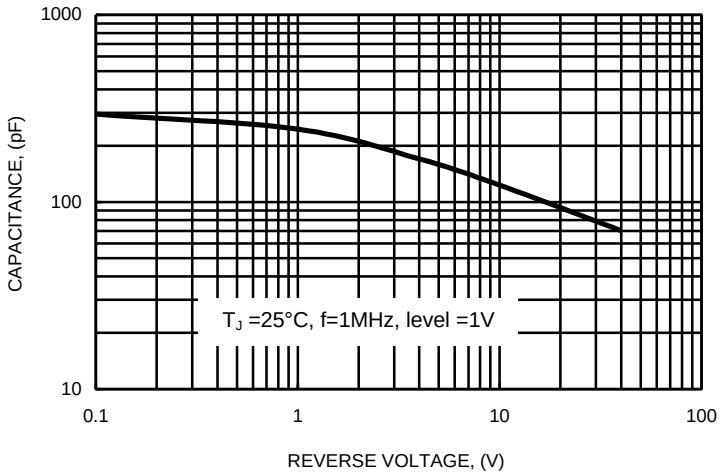


FIG.5 TYPICAL REVERSE CHARACTERISTICS

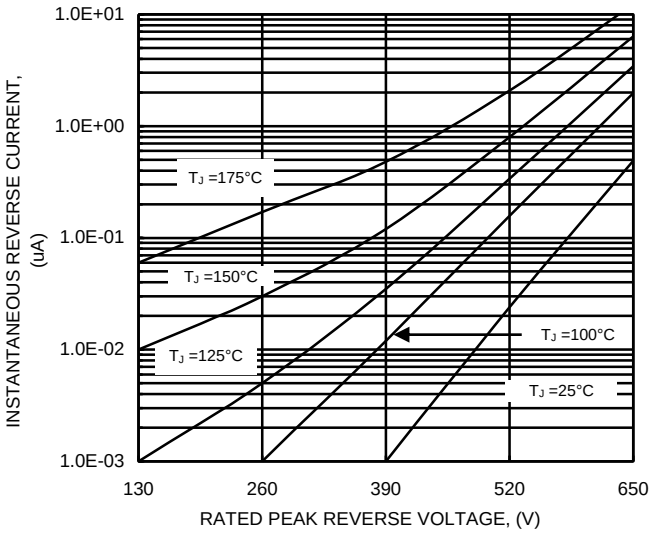
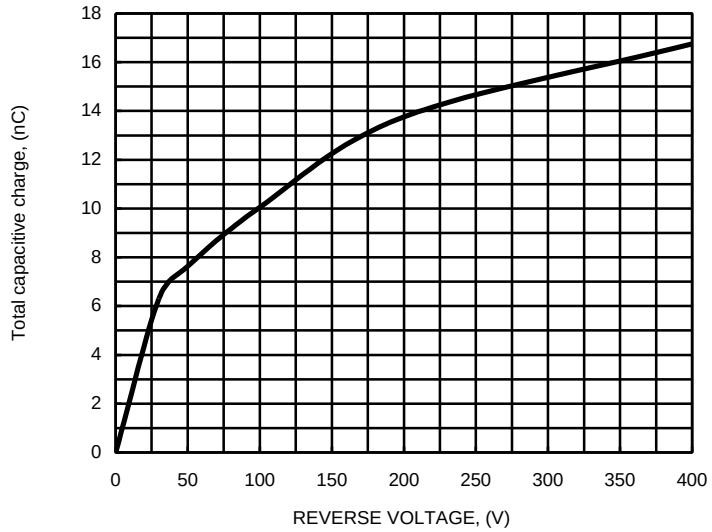


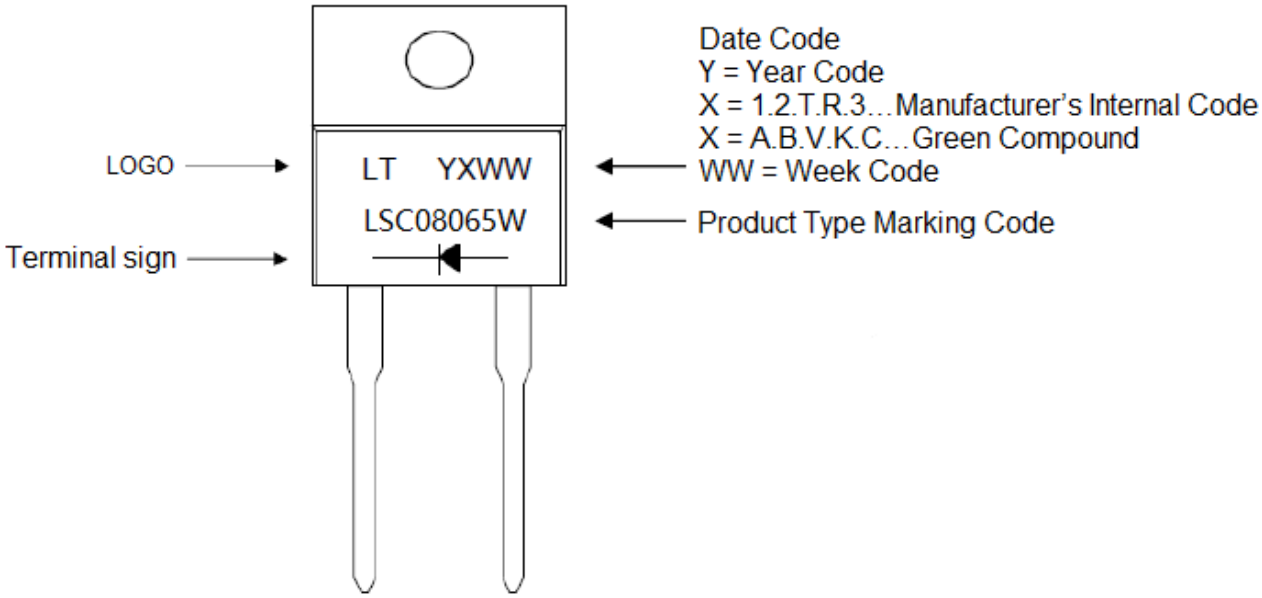
FIG.6 TYPICAL CAPACITIVE CHARGES



Ordering Information:

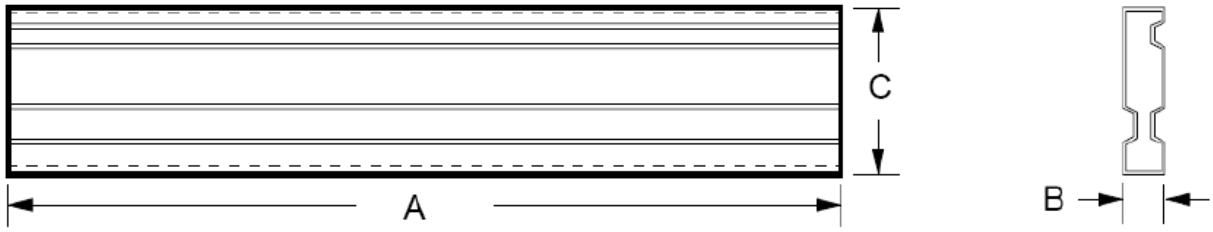
Part Number	Package	Packing	
		Qty.	Carrier
LSC08065W	TO-220AC	50pcs	Tube

Marking Information:

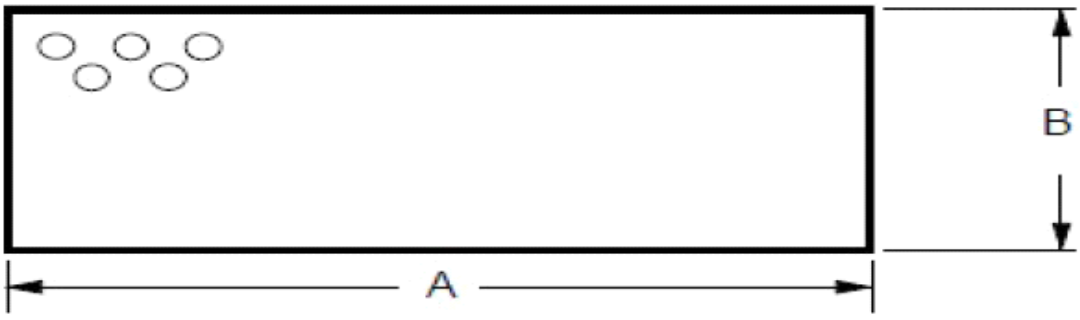


Packaging Information:

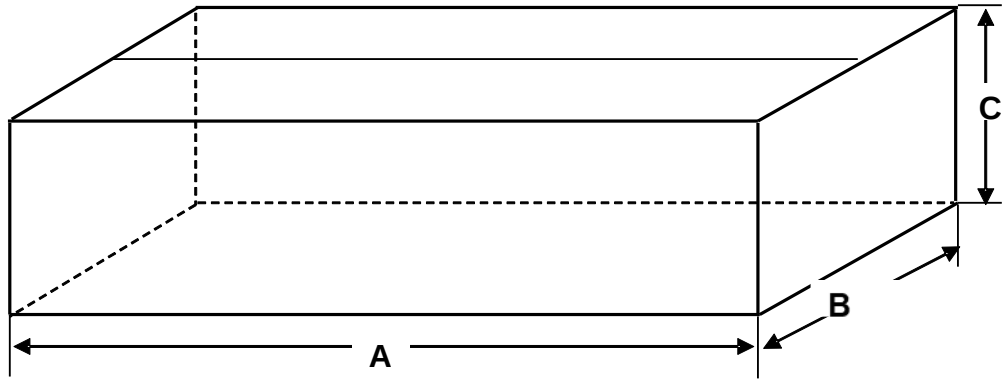
1. TUBE



2. AIR BAG

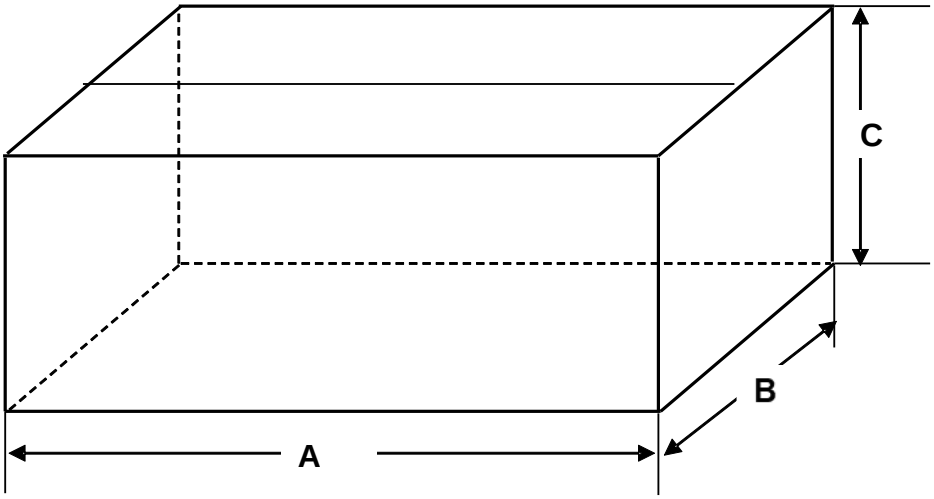


3. INNERBOX



Packaging Information:

4. CARTON



Unit:mm

P/N	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	Q'ty/per	REMARK
TUBE	536	5.6	31.8	50	/
AIR BAG	800	550	/	/	/
INNERBOX	555	165	105	2000	40TUBE
CARTON	575	179	225	4K	2 INNER BOX

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