

**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
- 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)**

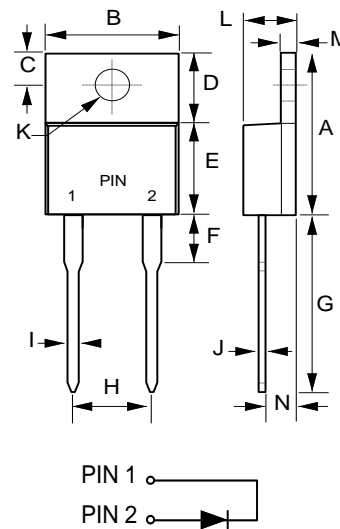
**APPLICATION**

- 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".
- Terminals: Finish – Matte Tin Plated Leads @3
- Weight: 1.894 grams (Approximate)
- Marking Code: LSC10065W

**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	$I_{(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave Superimposed on rated load.	$I_{FSM}$	60	A
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)	$I_F=10A$	$V_F$	$T_J=25^\circ C$	1.70	V
	$T_J=175^\circ C$		2.25		
Leakage current	$V_R=650V$	$I_R$	$T_J=25^\circ C$	250	uA
			$T_J=175^\circ C$	800	
Typical junction capacitance (Note 5)		$C_J$	330		pF

**DYNAMIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	UNIT
Total Capacitive Charge	$I_F=10A, V_R=400V, dl/dt= 250A/uS,$	$Q_C$	23	nC

**THERMAL CHARACTERISTICS**

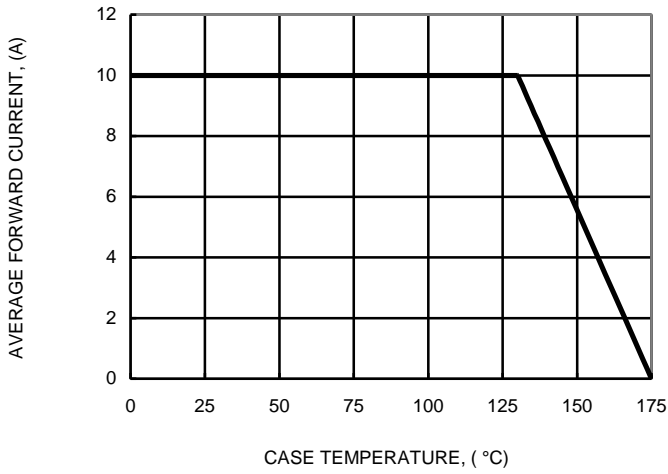
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	$R_{thJc}$	2	°C/W
	$R_{thJl}$	2	

**Notes:**

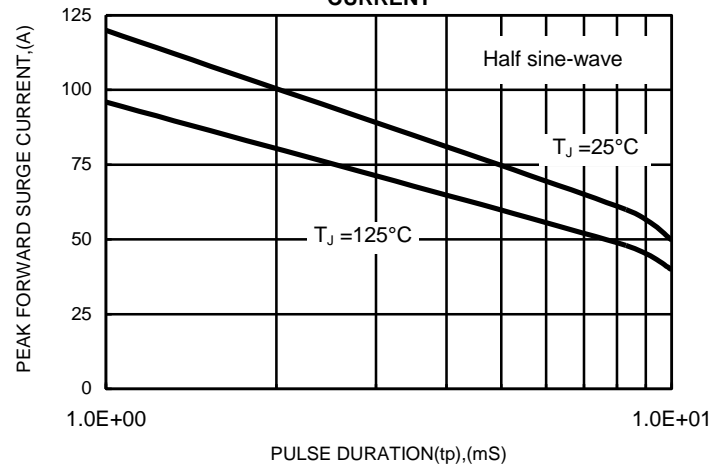
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- 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 copper heatsink 50mm x 50mm x 1.6mm.

**RATING AND CHARACTERISTIC CURVES  
LSC10065W**

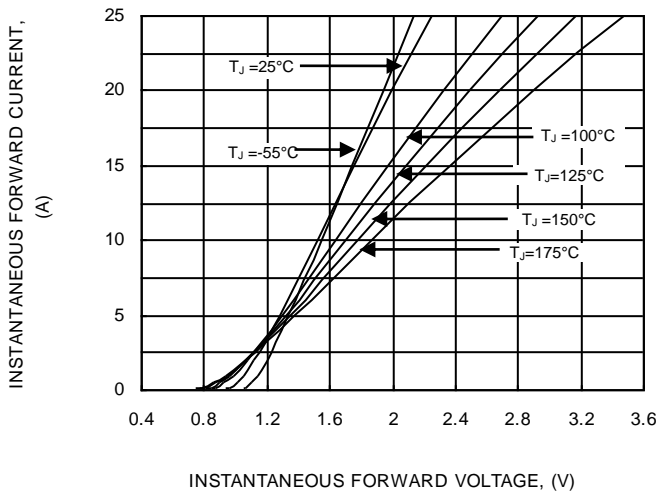
**FIG.1 FORWARD CURRENT DERATING CURVE**



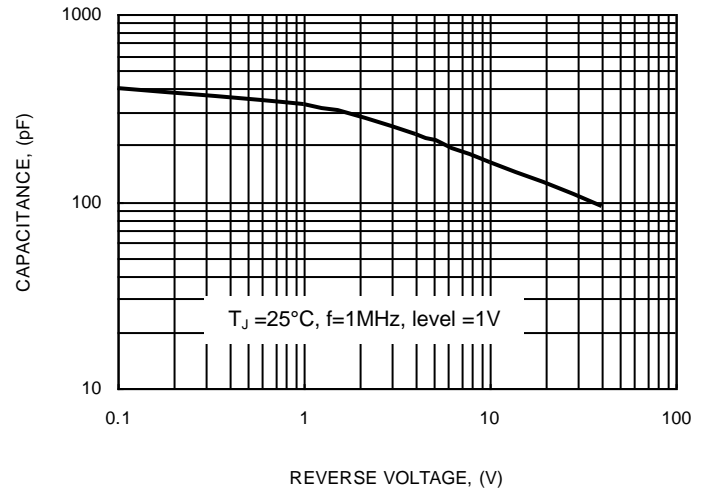
**FIG.2 NON-REPETITIVE PEAK SURGE FORWARD CURRENT**



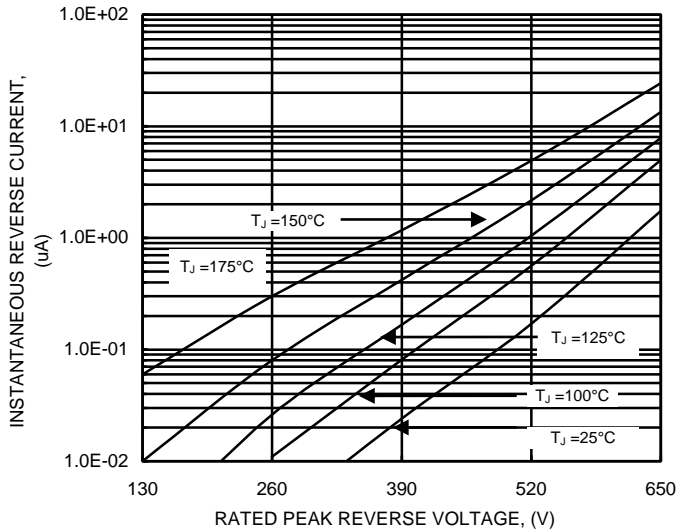
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



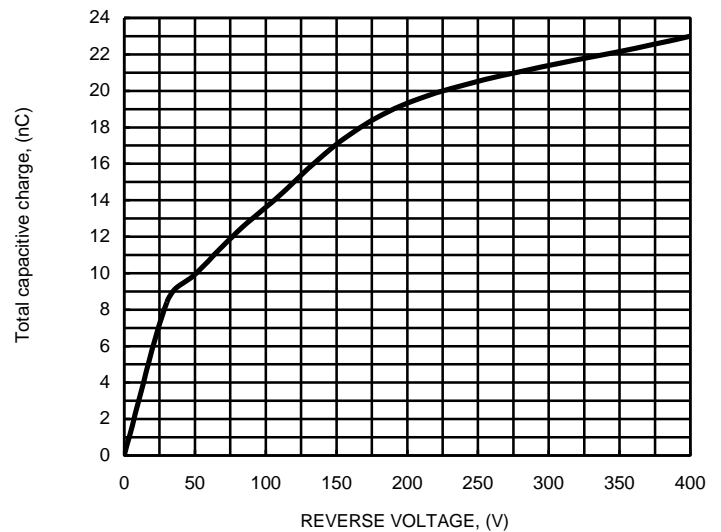
**FIG.4 TYPICAL JUNCTION CAPACITANCE**



**FIG.5 TYPICAL REVERSE CHARACTERISTICS**



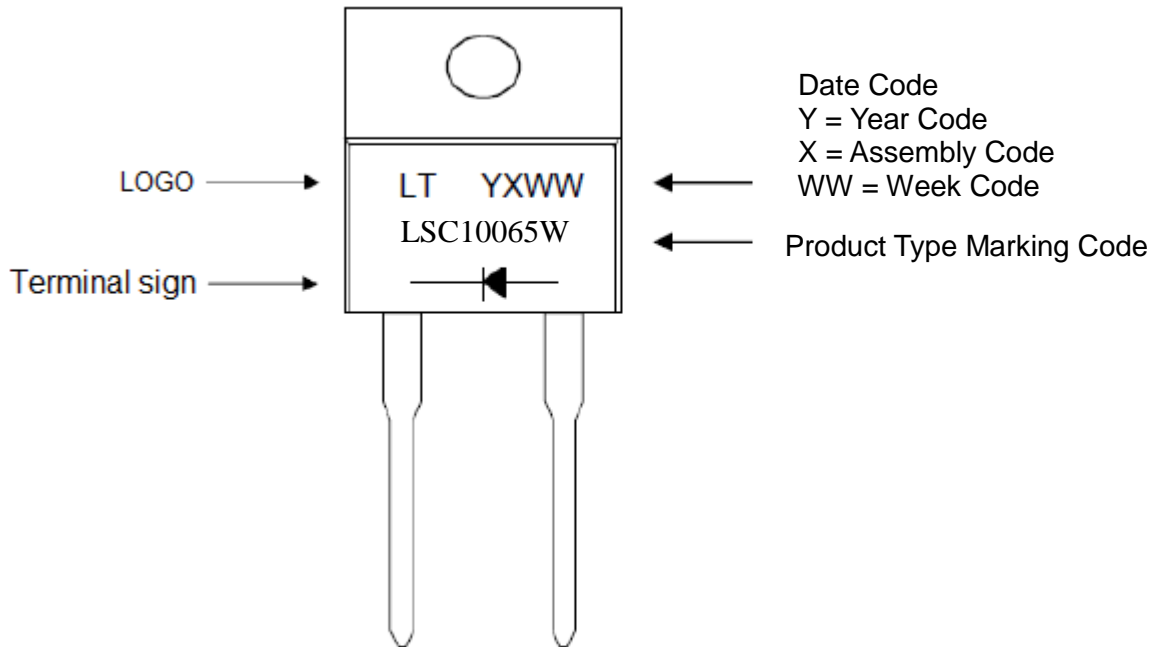
**FIG.6 TYPICAL CAPACITIVE CHARGES**



### Ordering Information:

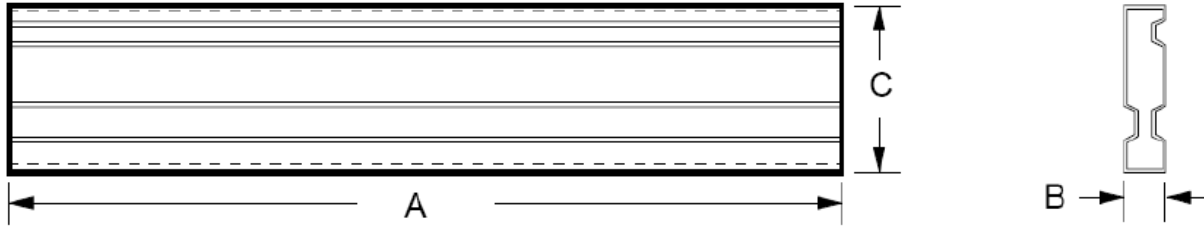
Part Number	Package	Packing	
		Qty.	Carrier
LSC10065W	TO-220AC	50pcs	Tube

### Marking Information:

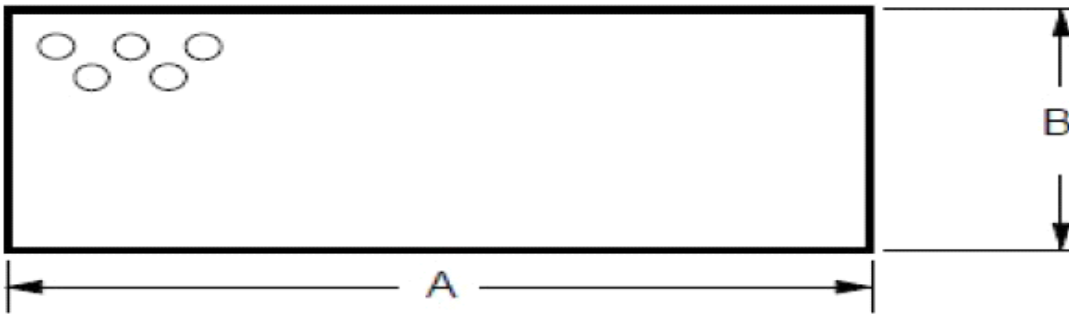


**Packaging Information:**

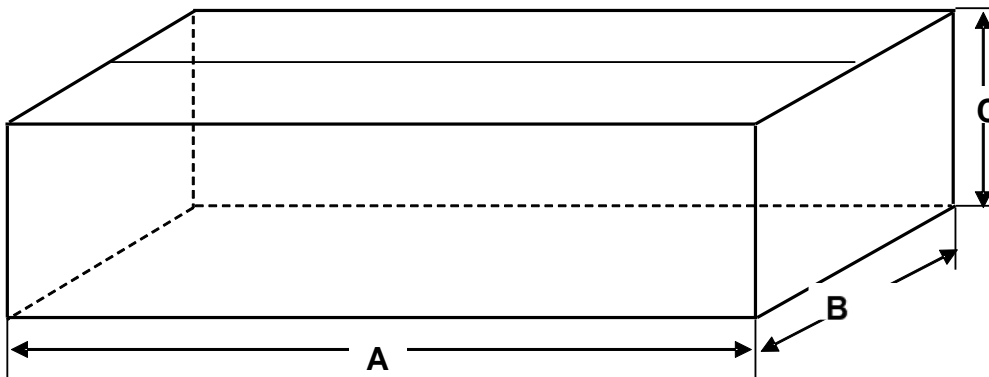
**1. TUBE**



**2. AIR BAG**



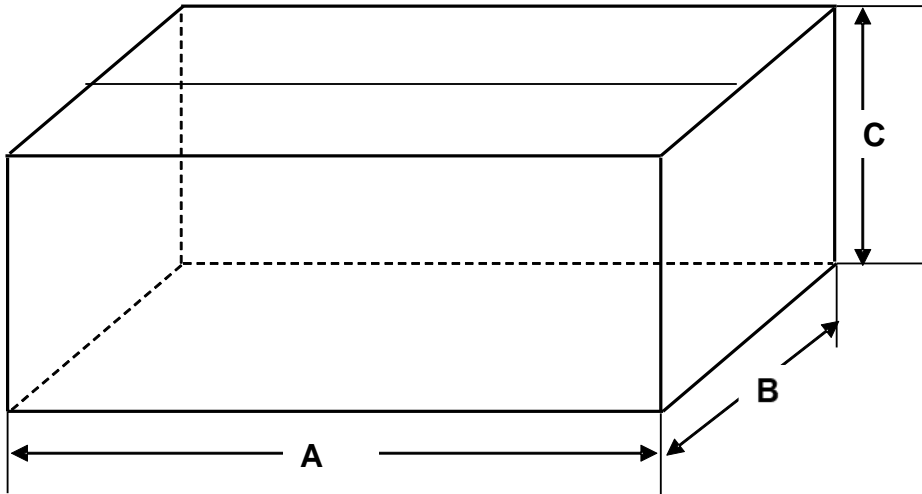
**3. INNERBOX**



**PACKAGING INFORMATION**  
**LSC10065W**

**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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