

## TRENCH SCHOTTKY RECTIFIER

**REVERSE VOLTAGE – 45 Volts**  
**FORWARD CURRENT – 20 Amperes**

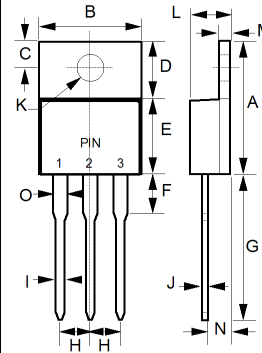
### FEATURES

- Trench Schottky technology
- Low power loss, high efficiency
- Low forward drop voltage
- Qualified according to AEC-Q101 Rev\_C
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

### MECHANICAL DATA

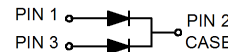
- Package: TO-220AB molded plastic
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Terminals: Matte Tin
- Polarity: As marked on the body
- Weight: 0.072 ounces, 2.0275 grams (Approximate)
- Mounting Position: Any
- Max. mounting torque = 0.5N.m (5.1Kgf-cm)

### TO-220AB



TO-220AB		
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	-	4.20
G	12.70	14.73
H	2.29	2.79
I	0.51	1.00
J	0.30	0.64
K	3.53Φ	4.09Φ
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.14	1.37

All Dimensions 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 <sub>RRM</sub>	45	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	45	V
Average Rectified Output Current per Device @T <sub>c</sub> =115°C	I <sub>F</sub>	20	A
Non-Repetitive Peak Forward Surge Current Single Half Sine-Wave tp=8.3ms	I <sub>FSM</sub>	180	A
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### STATIC ELECTRICAL CHARACTERISTICS

Parameter	Test Condition	Symbol	Typ.	Max.	Unit
Maximum Forward Voltage (Note 4)	I <sub>F</sub> =10A @T <sub>J</sub> =25°C	V <sub>F</sub>	-	0.5	V
	I <sub>F</sub> =10A @T <sub>J</sub> =125°C		0.45	-	
Maximum DC Reverse Current	V <sub>R</sub> =45V @T <sub>J</sub> =25°C	I <sub>R</sub>	-	0.5	mA
			@T <sub>J</sub> =125°C	-	
Junction Capacitance per Element	1MHz, V <sub>R</sub> =4V	C <sub>j</sub>	1240	-	pF

### THERMAL CHARACTERISTICS

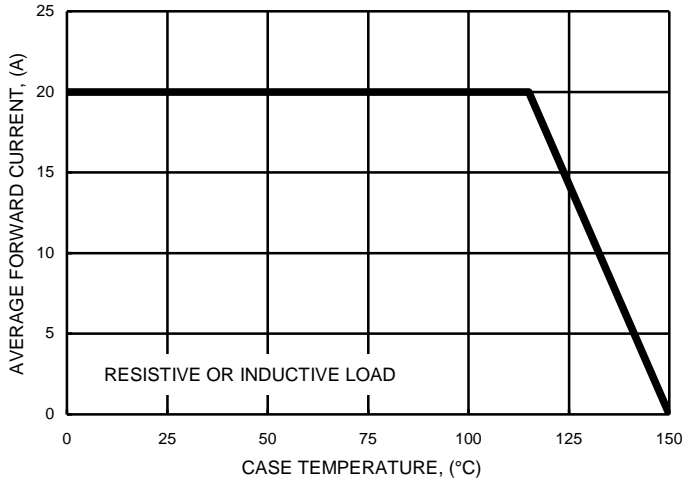
Parameter	Symbol	Value	Unit
Typical Thermal Resistance Junction (Notes 5 & 6)	R <sub>θJC</sub>	3	°C/W
	R <sub>θJL</sub>	5	
	R <sub>θJA</sub>	20	

### Notes:

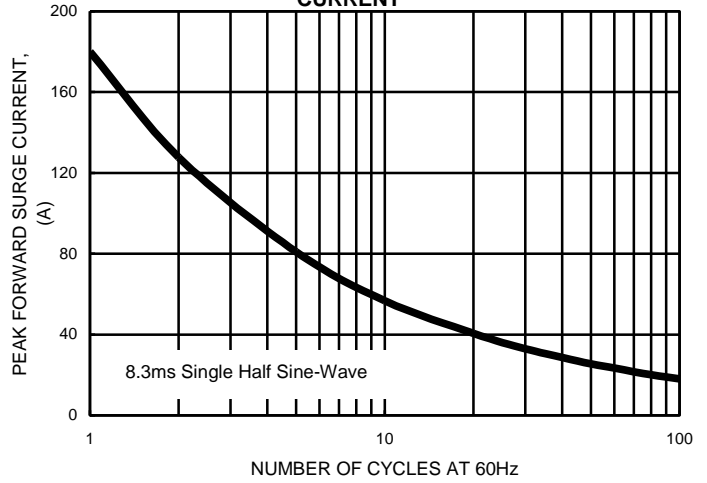
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- 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. Thermal Resistance Junction to Case, Lead and Ambient.
6. Device mounted on 50 x 50 x 1.85mm Copper plate.

**RATING AND CHARACTERISTIC CURVES**  
**G2045CTW**

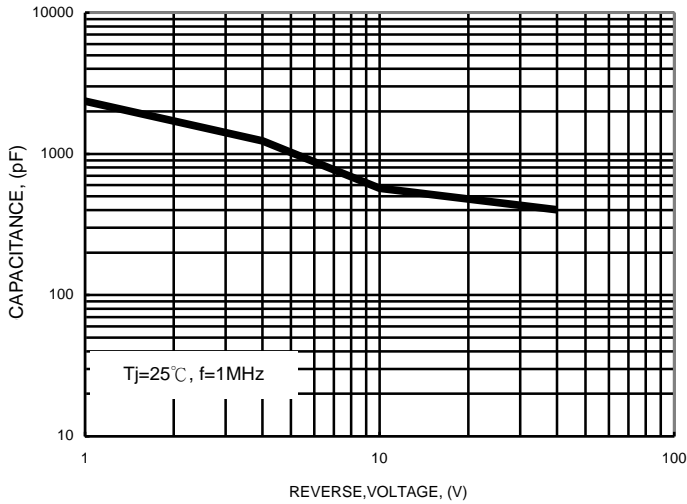
**FIG.1- FORWARD CURRENT DERATING CURVE**



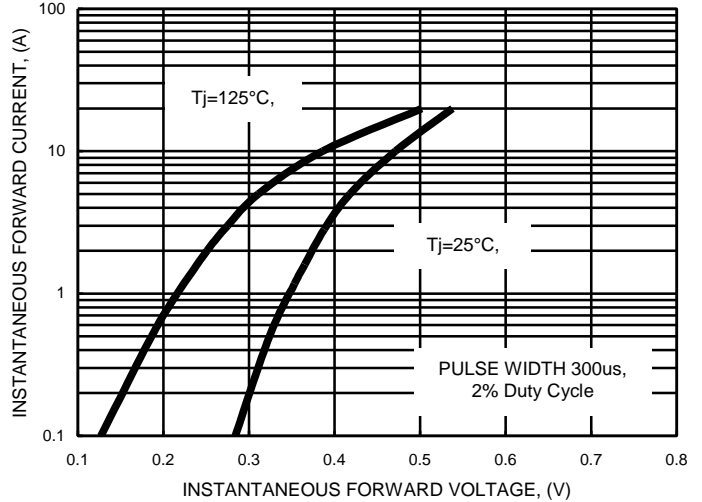
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



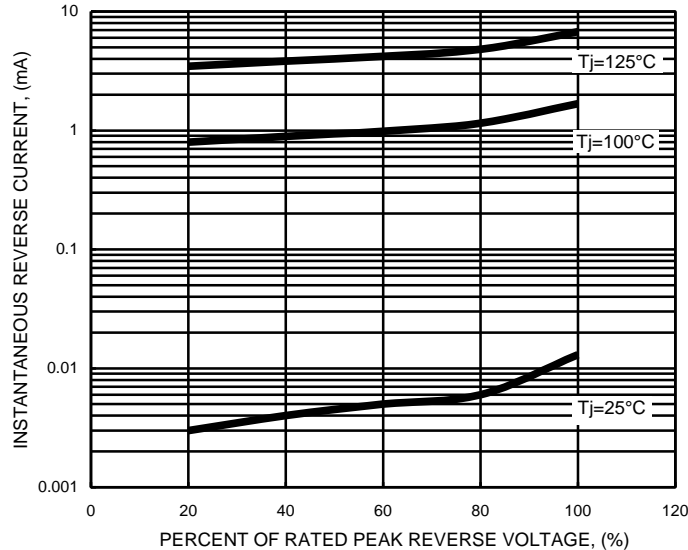
**FIG.3- TYPICAL JUNCTION CAPACITANCE**



**FIG.4- TYPICAL FORWARD CHARACTERISTICS**



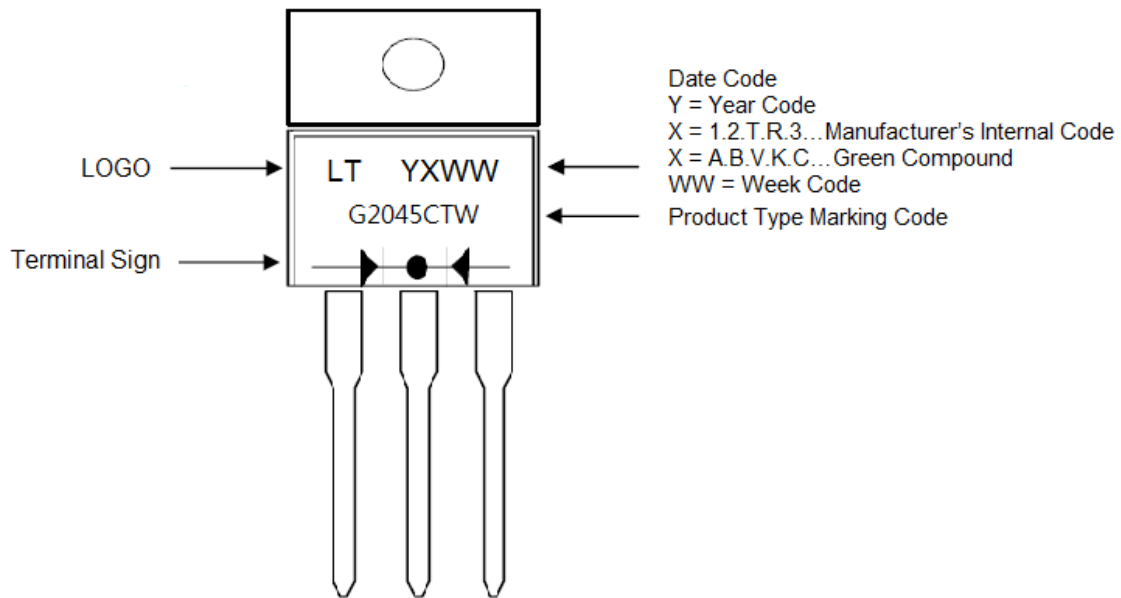
**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



### Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
G2045CTW	TO-220AB	50 pcs	Tube

### Marking Information:



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