

4A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

Product Summary (@ $T_A = +25^\circ\text{C}$)

V_{RRM} (V)	I_O (A)	V_F (V)	I_R (μA)
1000	4	1.0	5

Features and Benefits

- Glass Passivated Die Construction
- Compact, Thin Profile Package Design
- Low Forward Voltage Drop Improves Power Efficiency
- High Current and Surge Capability
- Reliable Robust Construction
- Ideal for SMT Manufacturing
- Rated at 1000V PRV
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

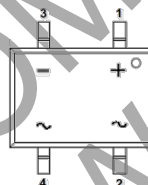
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

Mechanical Data

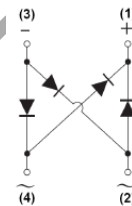
- Case: TT
- Case Material: Molded Plastic.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish).
Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: As Marked on Body
- Weight: 0.297 grams (Approximate)



Top View



Pin Diagram



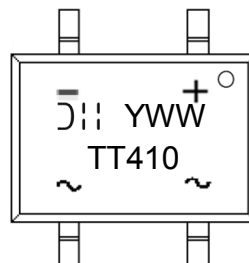
Internal Schematic

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
TT410-13	Commercial	TT	1,500/Tape & Reel

- 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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



TT410= Product Type Marking Code
 D= Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 7 = 2017)
 WW = Week Code (01 to 53)

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	1,000	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	700	V
Average Rectified Output Current (Note 5) @ $T_A = +25^\circ\text{C}$	I_O	4.0	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	120	A
Non-Repetitive Peak Forward Surge Current, 1.0ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	240	A
I^2t Rating for Fusing (1ms < t < 8.3ms)	I^2t	59	A^2S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5) (Per Element)	$R_{\theta JA}$	13	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Lead (Per Element)	$R_{\theta JL}$	8	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Case (Per Element)	$R_{\theta JC}$	3	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	1,000	—	—	V	$I_R = 10\mu\text{A}$
Forward Voltage (Per Element)	V_F	—	0.91 0.80	1.0	V	$I_F = 2\text{A}, T_A = +25^\circ\text{C}$ $I_F = 2\text{A}, T_A = +125^\circ\text{C}$
Leakage Current (Note 6) (Per Element)	I_R	—	0.15 55	5 500	μA	$V_R = 1,000\text{V}, T_A = +25^\circ\text{C}$ $V_R = 1,000\text{V}, T_A = +125^\circ\text{C}$
Total Capacitance (Per Element)	C_T	—	40	—	pF	$V_R = 4\text{V}, f = 1.0\text{MHz}$

Notes: 5. Device mounted on 15mmx12mmx1.6mm AL Pad attached on 100mmx75mmx27mm Fin heatsink. Thermal resistance test performed in accordance with JESD-51.
6. Short duration pulse test used to minimize self-heating effect.

FIG.1- FORWARD CURRENT DERATING CURVE

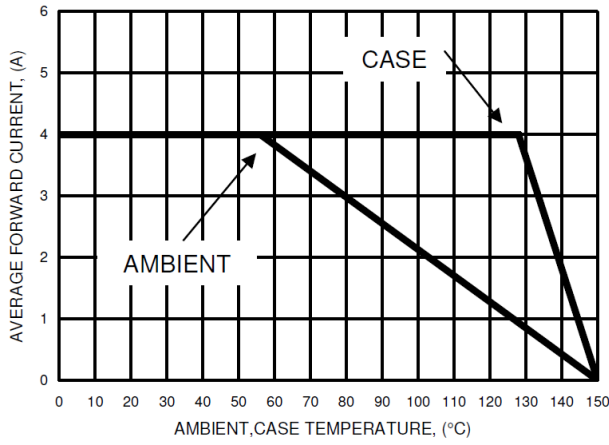


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

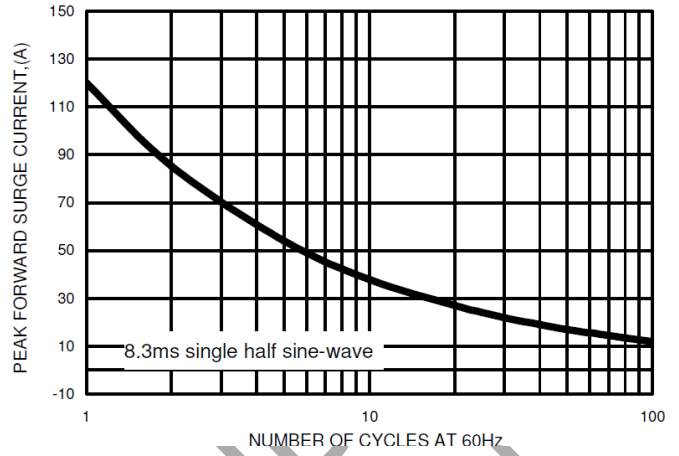


FIG.3- TYPICAL FORWARD CHARACTERISTICS

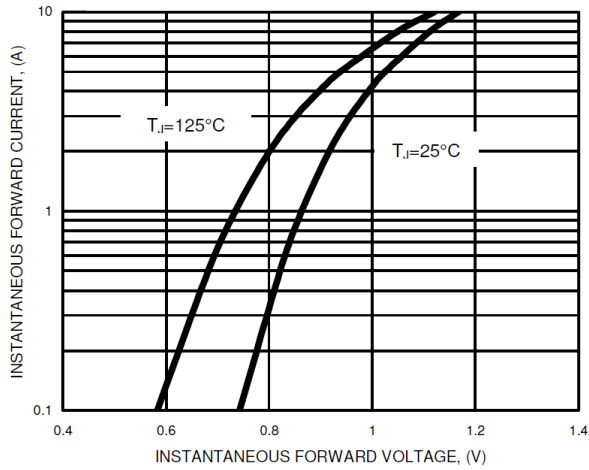


FIG.4- TYPICAL JUNCTION CAPACITANCE

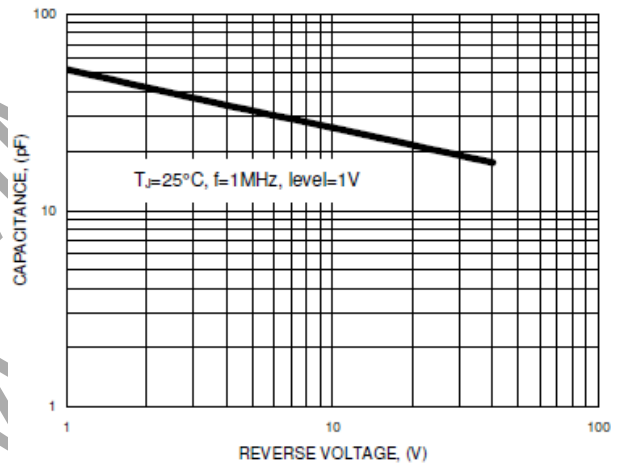
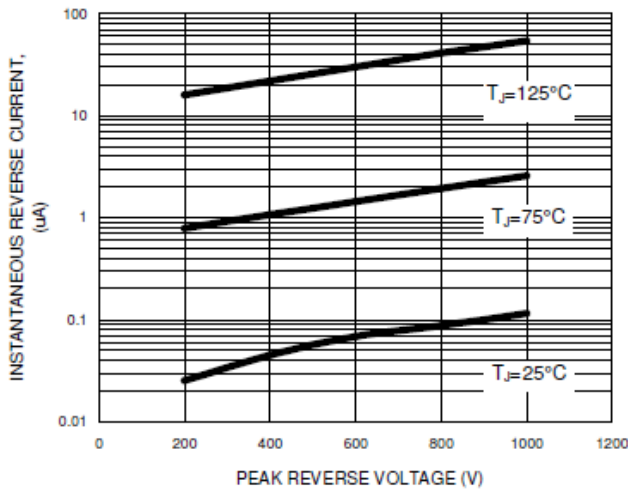


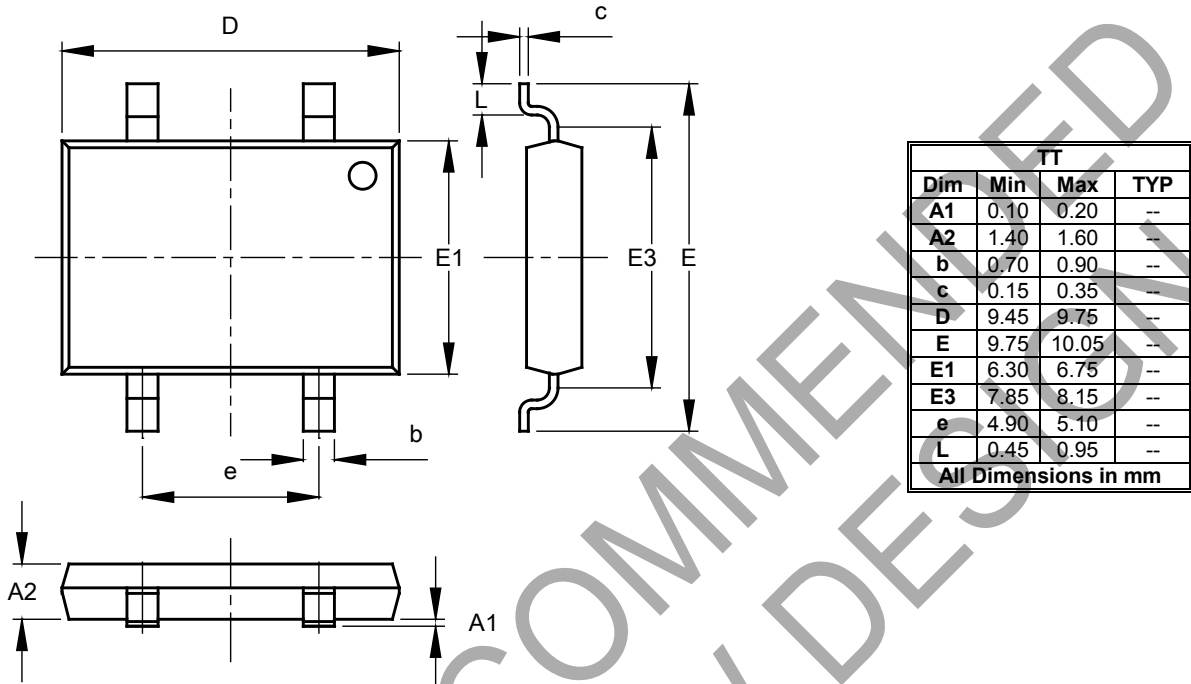
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

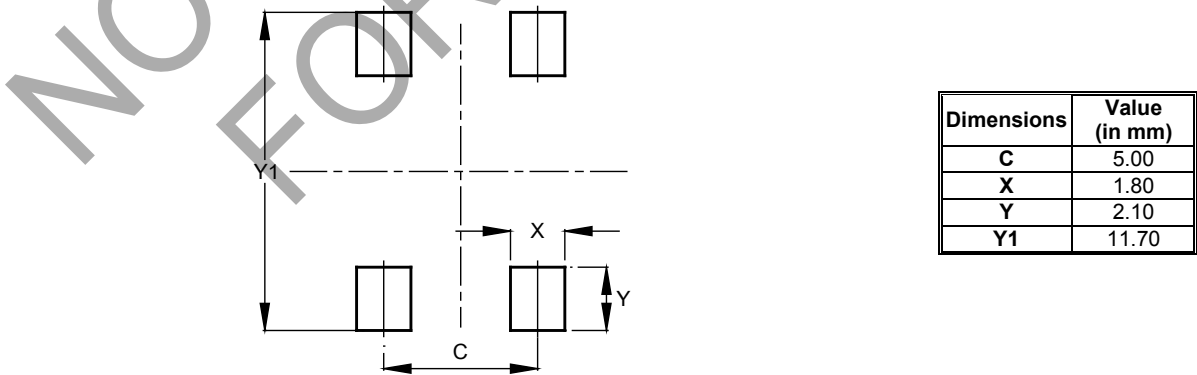
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Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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