

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

$V_{RRM}$ (V)	$I_o$ (A)	$V_F$ (V)	$I_R$ ( $\mu\text{A}$ )
600	5	1.5	10

## Features and Benefits

- Super-Fast Switching Capability
- Glass Passivated Die Construction
- Rating to 600V Peak Reverse Voltage
- High Current Capability
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.**  
<https://www.diodes.com/quality/product-definitions/>

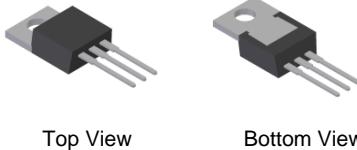
## Applications

- Switched mode power supplies
- High frequency DC to DC converters

## Mechanical Data

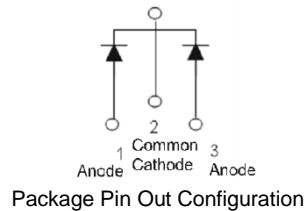
- Package: TO220AB
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish—Matte Tin Plated Leads Solderable per MIL-STD-202, Method 208 <sup>(e3)</sup>
- Polarity: See Diagram
- Weight: 2.0275 grams (Approximate)

TO220AB (Type WX)



Top View

Bottom View



## Ordering Information (Note 4)

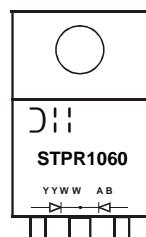
Part Number	Package	Packing	
		Qty.	Carrier
STPR1060	TO220AB (Type WX)	50 pcs	Tube

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

TO220AB (Type WX)



STPR1060 = Product Type Marking Code

DII = Manufacturer's Marking

YYWW = Date Code Marking

YY = Last Two Digits of Year (ex: 22 for 2022)

WW = Week Code (01 to 53)

AB = Foundry and Assembly Code

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_R$	600	V
Average Rectified Output Current (Fig. 1) (Per Leg) (Total)	$I_o$	5 10	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	55	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Notes 5, 6)	$R_{\theta JC}$	3	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Lead (Notes 5, 6)	$R_{\theta JL}$	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 7)	$V_{(BR)R}$	600	—	—	V	$I_R = 10\mu\text{A}$
Forward Voltage (Note 8)	$V_F$	—	—	1.50	V	$I_F = 5\text{A}, T_J = +25^\circ\text{C}$
		—	—	1.40	V	$I_F = 5\text{A}, T_J = +125^\circ\text{C}$
		—	—	1.70	V	$I_F = 10\text{A}, T_J = +25^\circ\text{C}$
		—	—	1.60	V	$I_F = 10\text{A}, T_J = +125^\circ\text{C}$
Reverse Leakage Current (Note 7)	$I_R$	—	—	10	$\mu\text{A}$	$V_R = 600\text{V}, T_J = +25^\circ\text{C}$
Typical Total Capacitance	$C_T$	—	35	—	pF	$V_R = 4\text{V}, f = 1.0\text{MHz}$
		—	—	250	$\mu\text{A}$	$V_R = 600\text{V}, T_J = +100^\circ\text{C}$
Reverse Recovery Time	$t_{RR}$	—	—	50	ns	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{RR} = 0.25\text{A}$

Notes:

- 5. Thermal resistance test performed in accordance with JESD-51.
- 6. The unit mounted on fin-type heatsink 39.8mm x 30mm x 25.1mm.
- 7. Short duration pulse test used to minimize self-heating effect.
- 8. 300 $\mu\text{s}$  pulse width, 2% duty cycle.

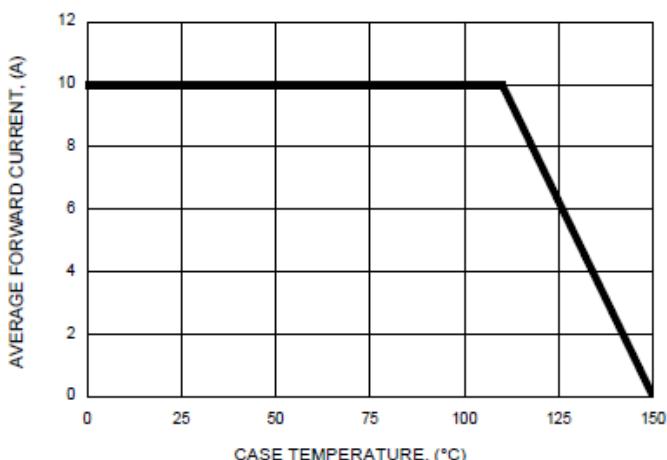


Fig. 1 FORWARD CURRENT DERATING CURVE

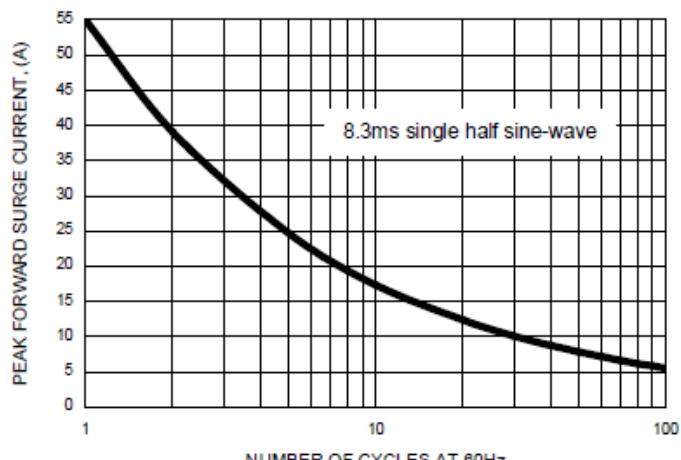


Fig. 2 MAXIMUM NON-REPETITIVE SURGE CURRENT

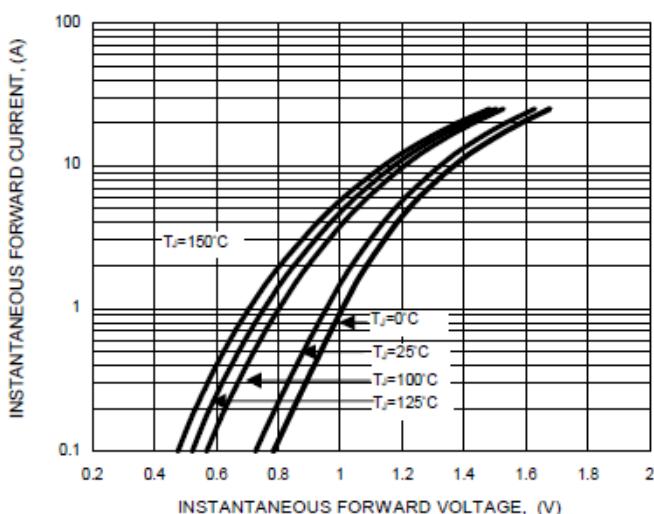


Fig. 3 TYPICAL FORWARD CHARACTERISTICS

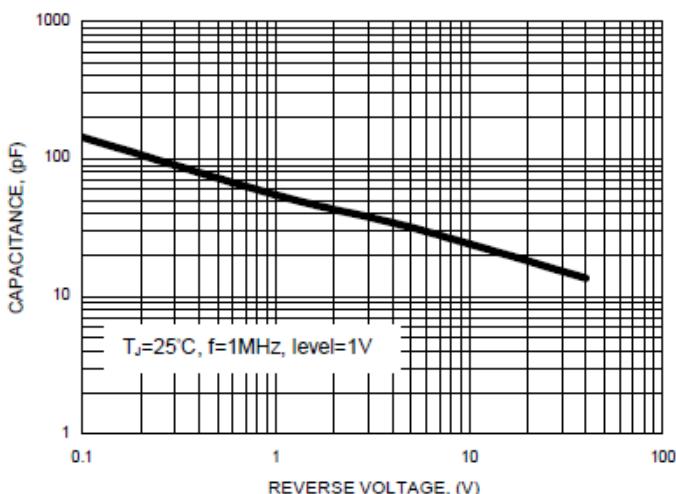


Fig. 4 TYPICAL TOTAL CAPACITANCE

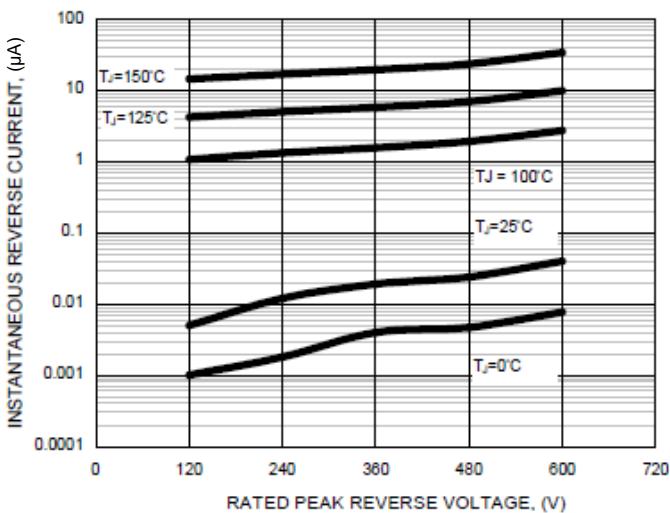
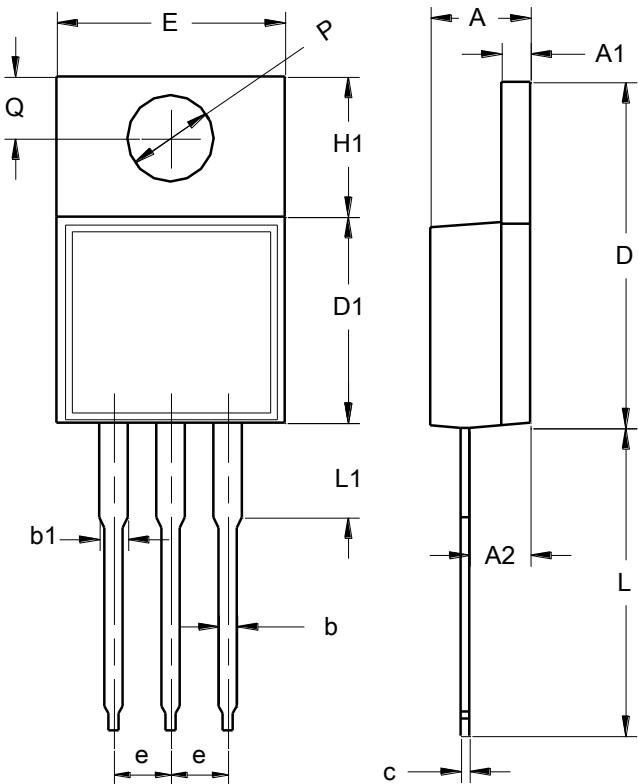


Fig. 5 TYPICAL REVERSE CHARACTERISTICS

## Package Outline Dimensions

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

TO220AB (Type WX)



TO220AB (Type WX)		
Dim	Min	Max
<b>A</b>	3.56	4.83
<b>A1</b>	1.14	1.40
<b>A2</b>	2.03	2.92
<b>b</b>	0.51	1.14
<b>b1</b>	1.14	1.70
<b>c</b>	0.30	0.64
<b>D</b>	14.40	15.20
<b>D1</b>	8.26	9.28
<b>E</b>	9.65	10.67
<b>e</b>	2.29	2.79
<b>H1</b>	5.84	6.86
<b>L</b>	12.70	14.73
<b>L1</b>	--	4.20
<b>PØ</b>	3.53	4.09
<b>Q</b>	2.54	3.43

All Dimensions in mm

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