

# STPR820D – STPR860D

## POWER FACTOR CORRECTION RECTIFIERS (PFC DIODE)

**REVERSE VOLTAGE – 200 Volts & 600 Volts  
FORWARD CURRENT – 8.0 Ampere**

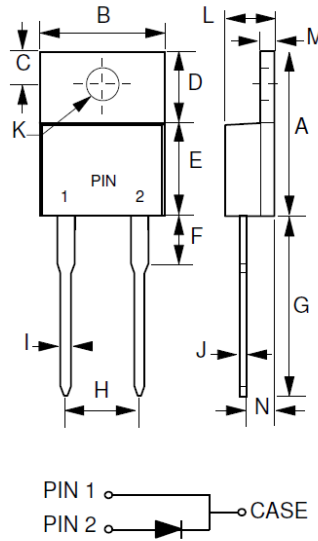
### FEATURES

- Power Factor Correction function
- Glass passivated chip
- Superfast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low reverse leakage current
- High surge capacity
- Plastic package has UL flammability classification 94V-0
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

### MECHANICAL DATA

- Package: TO-220AC molded plastic
- Polarity: As marked on the body
- Weight: 0.08 ounces, 2.24 grams
- Mounting position: Any

### TO-220AC



TO-220AC		
DIM.	MIN.	MAX.
A	14.22	15.88
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	9.65	10.67
F	-	6.35
G	12.70	14.73
H	4.83	5.33
I	0.51	1.14
J	0.30	0.64
K	3.53 $\varnothing$	4.09 $\varnothing$
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92

All Dimensions in millimeter

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOL	STPR820D	STPR860D	UNIT
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	200	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	140	420	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	200	600	V
Maximum Average Forward Rectified Current @ T <sub>C</sub> =100°C	I <sub>(AV)</sub>	8		A
Peak Forward Surge Current 8.3ms single half-sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	90		A
Maximum Forward Voltage at 8.0A DC @ T <sub>J</sub> =25°C @ T <sub>J</sub> =125°C	V <sub>F</sub>	1.1 1.0	1.5 1.4	V
Maximum DC Reverse Current at Rated DC Blocking Voltage @ T <sub>J</sub> =25°C @ T <sub>J</sub> =125°C	I <sub>R</sub>	10 1000		uA
Typical Junction Capacitance (Note 3)	C <sub>J</sub>	60		pF
Maximum Reverse Recovery Time (Note 4)	T <sub>RR</sub>	30	50	ns
Typical Thermal Resistance (Notes 5, 6)	R <sub>θJC</sub>	3.0		°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150		°C

#### 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. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
4. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.
5. Thermal Resistance Junction to case.
6. Device mounted on 100mm x 100mm x 1.6mm Cu Plate Heatsink.

**RATING AND CHARACTERISTIC CURVES**  
**STPR820D – STPR860D**

FIG.1 - FORWARD CURRENT DERATING CURVE

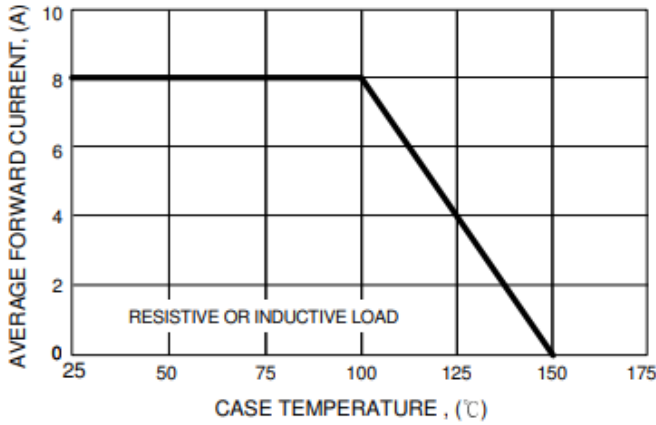


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

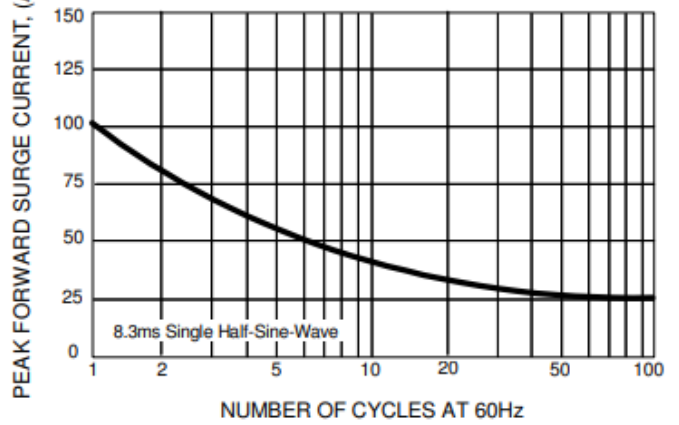


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

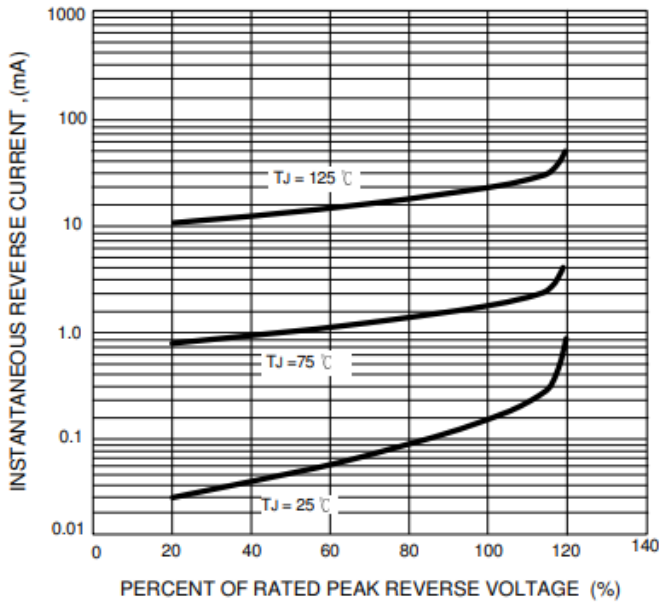


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

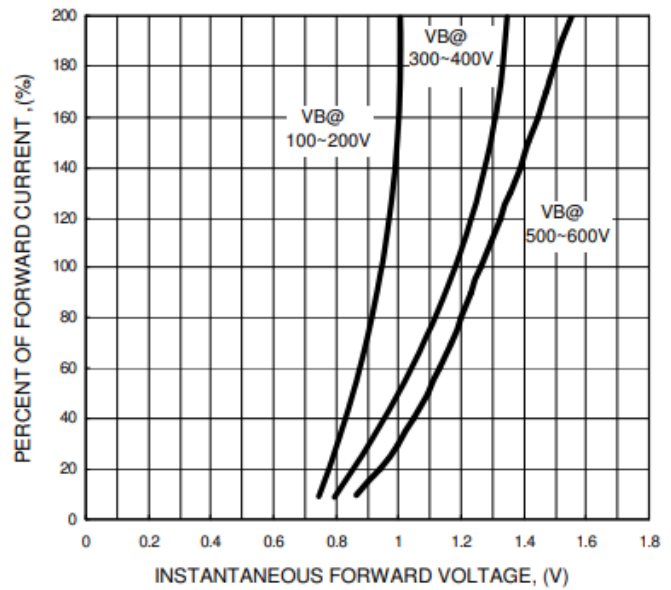
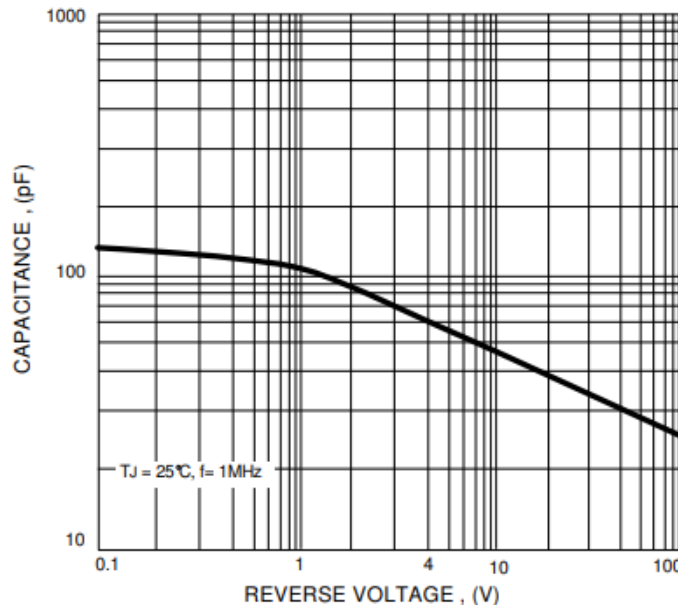


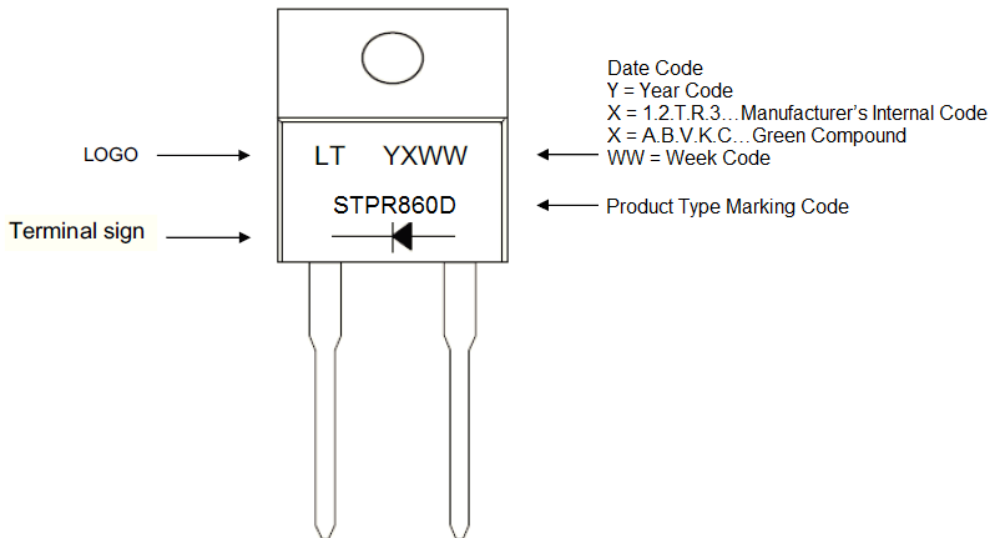
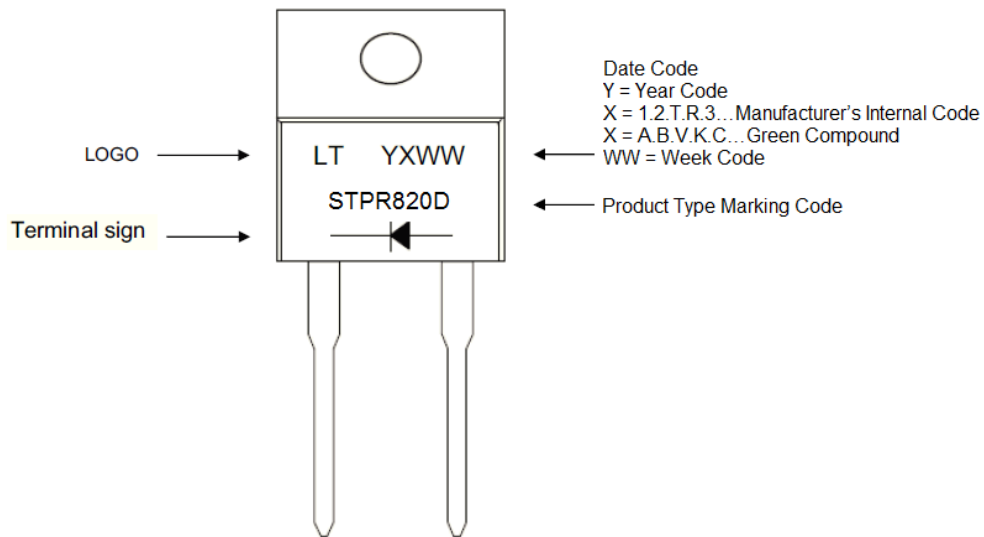
FIG.5 - TYPICAL JUNCTION CAPACITANCE



### Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
STPR820D	TO-220AC	50 pcs	Tube
STPR860D	TO-220AC	50 pcs	Tube

### Marking Information :



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