

STPR820D – STPR860D

POWER FACTOR CORRECTION RECTIFIERS (PFC DIODE)

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

FEATURES

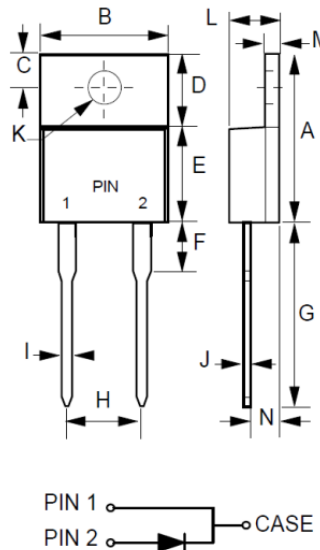
- Power Factor Correction function
- Glass passivated chip
- Superfast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low reverse leakage current
- High surge capacity
- Plastic package has UL flammability classification 94V-0
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **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](mailto:contact@diodes.com) or your local Diodes representative.**

<https://www.diodes.com/quality/product-definitions/>

MECHANICAL DATA

- Package: TO-220AC
- Package Material: Molded plastic, green compound
- Polarity: As marked on the body
- Terminals: Finish – Bright tin (③)
- Weight: 0.08 ounces, 2.24 grams (Approximate)
- 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	8.26	9.28
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 _{RRM}	200	600	V
Maximum RMS Voltage	V _{RMS}	140	420	V
Maximum DC Blocking Voltage	V _{DC}	200	600	V
Maximum Average Forward Rectified Current @T _C = 100°C	I _(AV)	8		A
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load (Jedec Method)	I _{FSM}	90		A
Maximum Forward Voltage at 8.0A DC @ T _J = 25°C @ T _J = 125°C	V _F	1.1 1.0	1.5 1.4	V
Maximum DC Reverse Current at Rated DC Blocking Voltage @ T _J = 25°C @ T _J = 125°C	I _R	10 1000		uA
Typical Junction Capacitance (Note 3)	C _J	60		pF
Maximum Reverse-Recovery Time (Note 4)	t _{RR}	30	50	ns
Typical Thermal Resistance (Notes 5, 6)	R _{θJC}	3.0		°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-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_F = 0.5A, I_R = 1.0A, I_{RR} = 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

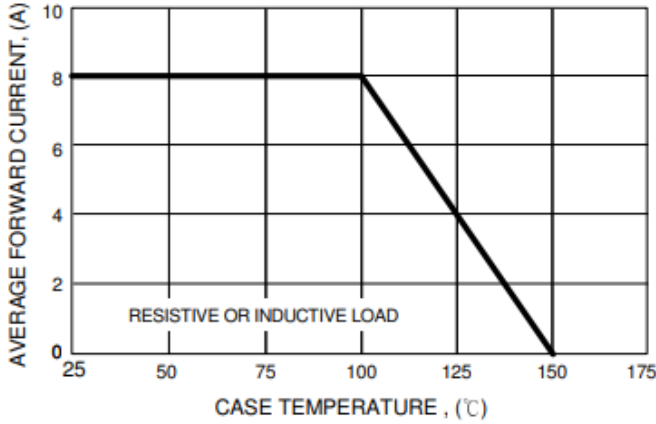


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

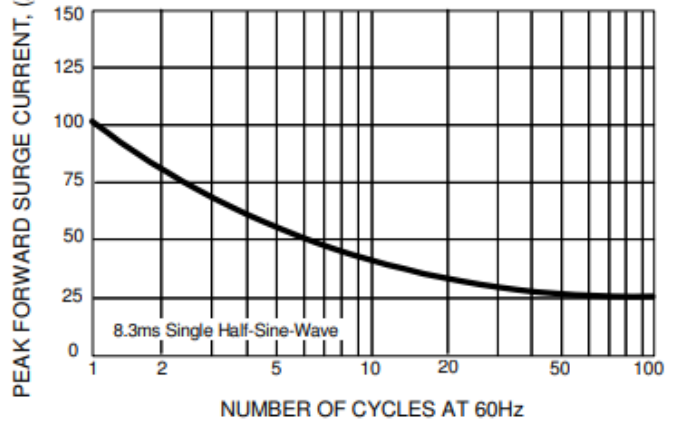


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

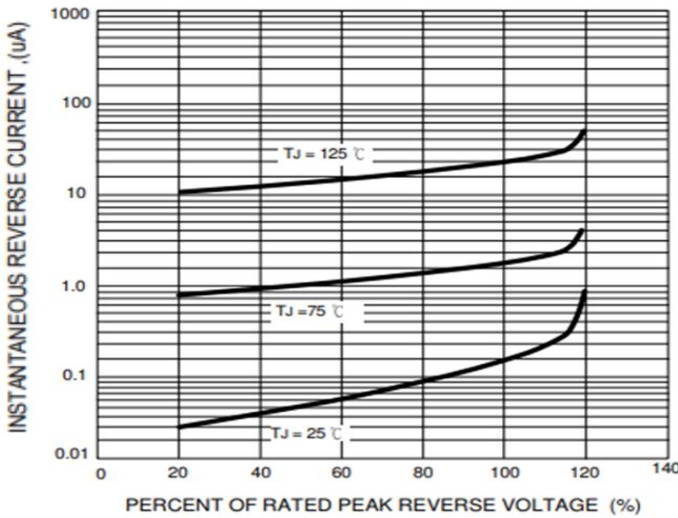


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

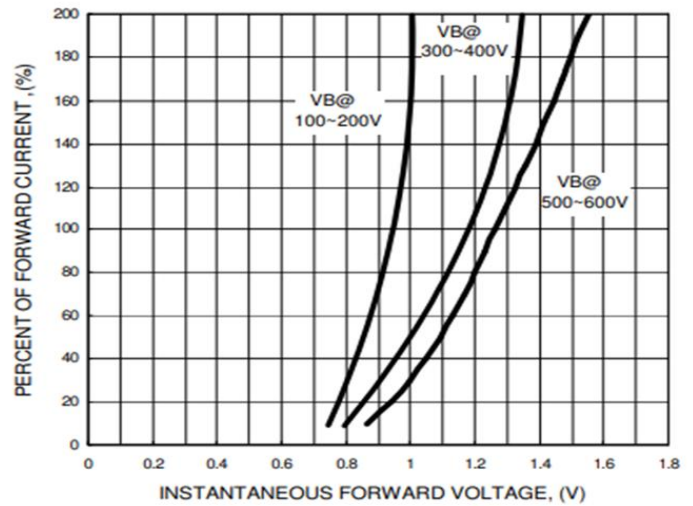
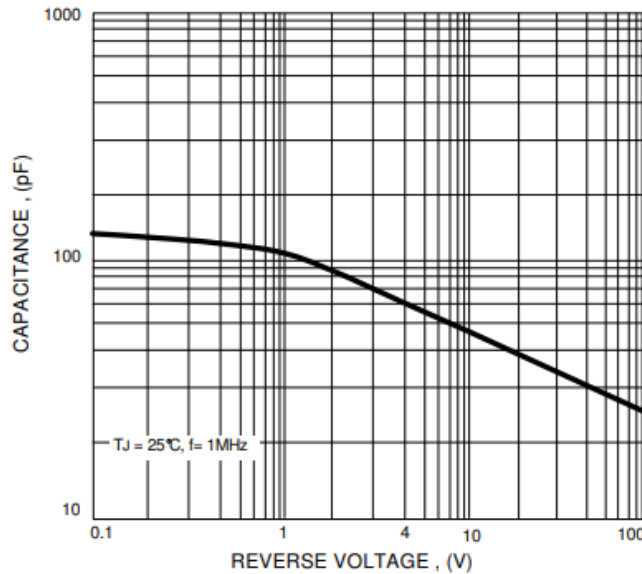


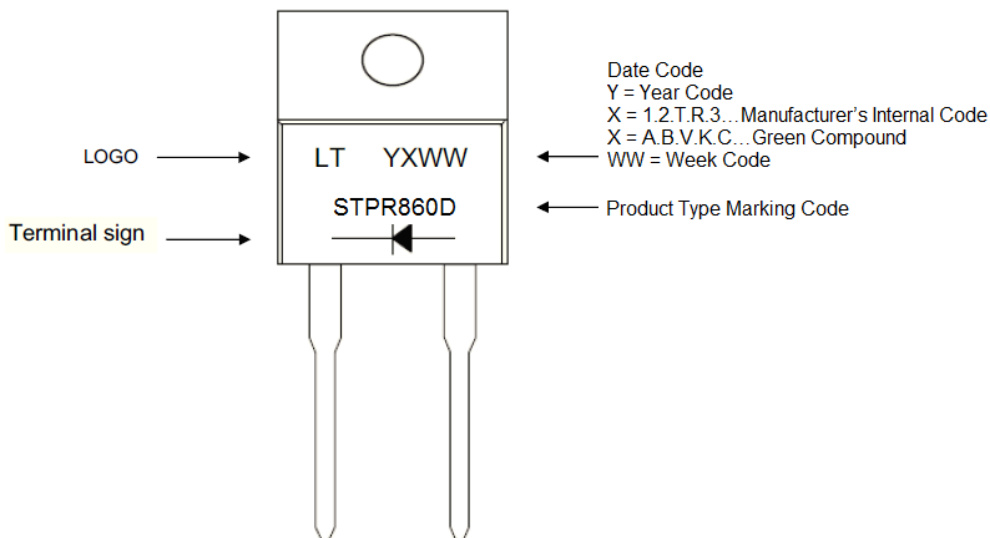
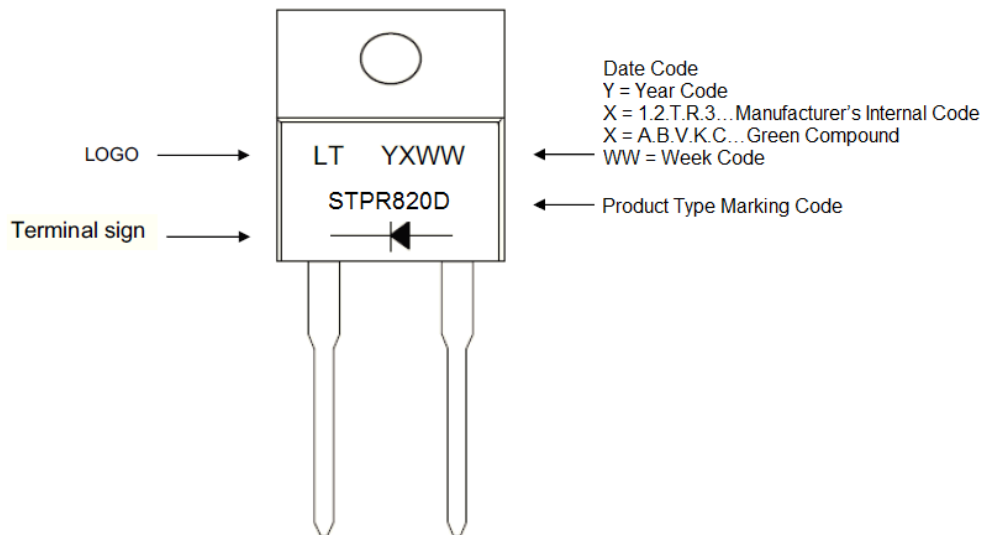
FIG.5 - TYPICAL JUNCTION CAPACITANCE



Ordering Information :

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

Marking Information :



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