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# 1N5820 - 1N5822

## Features

- 3.0 ampere operation at  $T_A = 95^\circ\text{C}$  with no thermal runaway.
- For use in low voltage, high frequency inverters free wheeling, and polarity protection applications.



DO-201AD

COLOR BAND DENOTES CATHODE

## Schottky Rectifiers

### Absolute Maximum Ratings\*

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol      | Parameter                                                                         | Value       |        |        | Units            |
|-------------|-----------------------------------------------------------------------------------|-------------|--------|--------|------------------|
|             |                                                                                   | 1N5820      | 1N5821 | 1N5822 |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                                                | 20          | 30     | 40     | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current<br>3/8 " lead length @ $T_A = 95^\circ\text{C}$ | 3.0         |        |        | A                |
| $I_{FSM}$   | Non-repetitive Peak Forward Surge Current<br>8.3 ms Single Half-Sine-Wave         | 80          |        |        | A                |
| $T_{stg}$   | Storage Temperature Range                                                         | -65 to +125 |        |        | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                                    | -65 to +125 |        |        | $^\circ\text{C}$ |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics

| Symbol          | Parameter                               | Value | Units              |
|-----------------|-----------------------------------------|-------|--------------------|
| $P_D$           | Power Dissipation                       | 3.6   | W                  |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 28    | $^\circ\text{C/W}$ |

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol | Parameter                                                        | Device |        |        | Units |
|--------|------------------------------------------------------------------|--------|--------|--------|-------|
|        |                                                                  | 1N5820 | 1N5821 | 1N5822 |       |
| $V_F$  | Forward Voltage @ 3.0 A                                          | 475    | 500    | 525    | mV    |
|        | @ 9.4 A                                                          | 850    | 900    | 950    | mV    |
| $I_R$  | Reverse Current @ rated $V_R$                                    | 0.5    |        |        | mA    |
|        | $T_A = 25^\circ\text{C}$                                         | 20     |        |        | mA    |
|        | $T_A = 100^\circ\text{C}$                                        |        |        |        |       |
| $C_T$  | Total Capacitance<br>$V_R = 4.0\text{ V}$ , $f = 1.0\text{ MHz}$ | 190    |        |        | pF    |

# Typical Characteristics

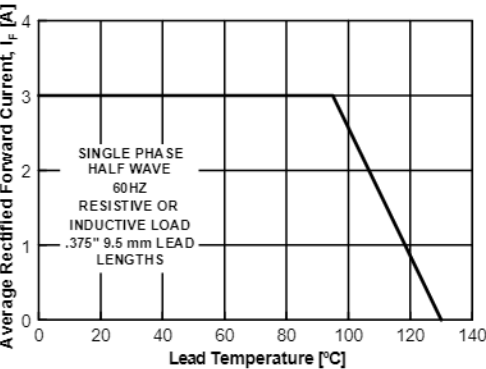


Figure 1. Forward Current Derating Curve

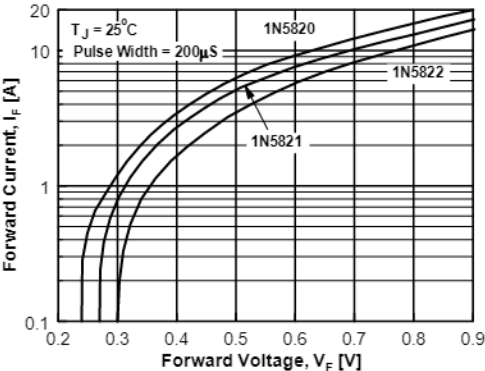


Figure 2. Forward Voltage Characteristics

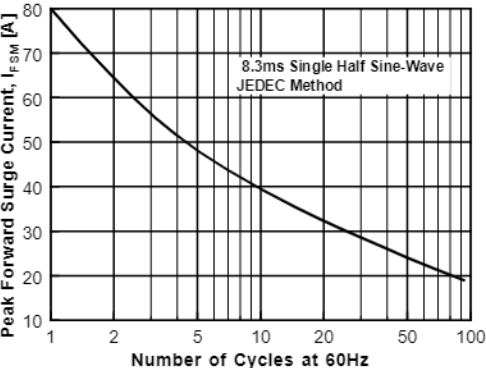


Figure 3. Non-Repetitive Surge Current

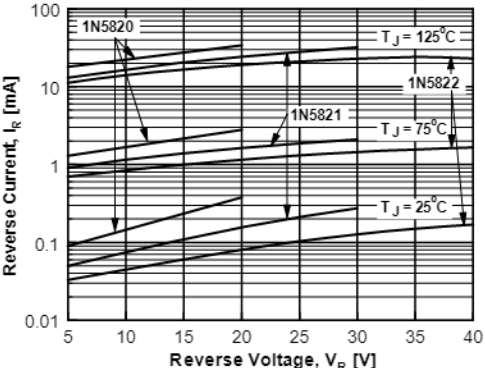


Figure 4. Reverse Current vs Reverse Voltage

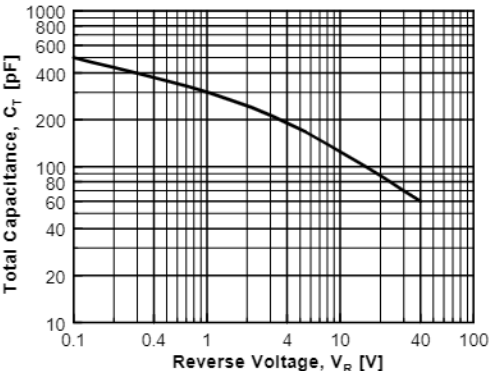


Figure 5. Total Capacitance

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