

FAST RECOVERY POWER RECTIFIER

Qualified per MIL-PRF-19500/478

Devices

| | | | |
|----------------|----------------|----------------|----------------|
| 1N5812 | 1N5814 | 1N5815 | 1N5816 |
| 1N5812R | 1N5814R | 1N5815R | 1N5816R |

Qualified Level

JAN
JANTX
JANTXV

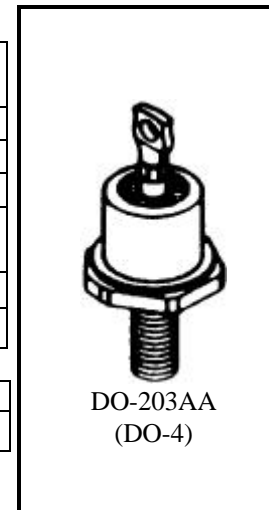
MAXIMUM RATINGS

| Ratings | Symbol | 1N5812 1N5812R | 1N5814 1N5814R | 1N5816 1N5816R | Unit |
|---|----------------|-------------------|-------------------|-------------------|--------------------|
| Reverse Voltage | V_R | 50 | 100 | 150 | Vdc |
| Working Peak Reverse Voltage | V_{RWM} | 50 | 100 | 150 | Vpk |
| Average Forward Current $T_C = +100^{\circ}\text{C}$ ⁽¹⁾ | I_O | 20 | | | Adc |
| Forward Current Surge Peak $T_C = +100^{\circ}\text{C}$ $t_p = 8.3$ ms | I_{FSM} | 400 | | | Adc |
| Reverse Recovery Time | t_{rr} | 35 | | | ηs |
| Operating & Storage Junction Temperature | T_J, T_{stg} | -65 to +175 | | | $^{\circ}\text{C}$ |

THERMAL CHARACTERISTICS

| Characteristics | Symbol | Max. | Unit |
|--------------------------------------|-----------------|------|-----------------------------|
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 1.5 | $^{\circ}\text{C}/\text{W}$ |

1) Derate linearly 250 mA/ $^{\circ}\text{C}$ from +100 $^{\circ}\text{C}$ to +150 $^{\circ}\text{C}$, & 300 mA/ $^{\circ}\text{C}$ above +150 $^{\circ}\text{C}$



*See appendix A for package outline

ELECTRICAL CHARACTERISTICS

| Characteristics | Symbol | Min. | Max. | Unit |
|---|----------------------|------------------|----------------|-----------------------------|
| Thermal Impedance $I_H \geq \text{rated } I_O; t_H \leq 250\text{ms}; 10\text{ mA} \leq I_M \leq 100\text{ mA}; t_{MD} = 250\ \mu\text{s (max)}$ | $Z_{\theta JX}$ | | 1.35 | $^{\circ}\text{C}/\text{W}$ |
| Forward Voltage $t_p \leq 8.3$ ms, duty cycle $\leq 2.0\%$ pulsed $I_F = 10$ A (pk) $I_F = 20$ A (pk) | V_{F1} V_{F2} | | 0.860 0.950 | Vdc Vpk |
| Reverse Current $V_R = \text{Rated } V_R$ (See 1.3 of MIL-PRF-19500/478) | I_R | | 10 | μAdc |
| Breakdown Voltage $I_R = 100\ \mu\text{Adc}$ $I_R = 100\ \mu\text{Adc}$ $I_R = 100\ \mu\text{Adc}$ | $V_{(BR)}$ | 60 110 160 | | Vdc |
| Junction Capacitance $V_R = 10$ Vdc, $V_{SIG} = 50$ mVdc (p-p) max, $f = 1.0$ MHz | C_J | | 300 | pF |
| Forward Recovery Voltage $t_p \geq 20\ \eta\text{s}$, $t_r = 8.0\ \eta\text{s}$; $I_F = 1,000$ mA | V_{FR} | | 2.2 | V(pk) |
| Forward Recovery Time $I_F = 1,000$ mA | t_{rr} | | 15 | ηs |