

FAST RECOVERY POWER RECTIFIER

Qualified per MIL-PRF-19500/478

Devices

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

Qualified Level

JAN
JANTX
JANTXV

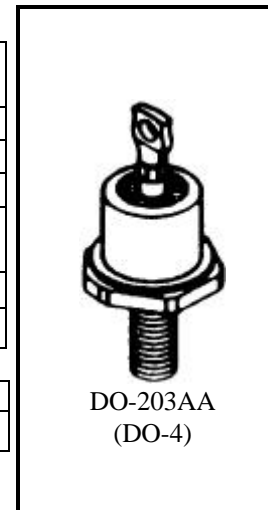
MAXIMUM RATINGS

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 $I_R = 100\ \mu\text{Adc}$ 1N5812, R $I_R = 100\ \mu\text{Adc}$ 1N5814, R $I_R = 100\ \mu\text{Adc}$ 1N5816, R	$V_{(BR)}$	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

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