Microsemi LAWRENCE

TECHNICAL DATA

FAST RECOVERY POWER RECTIFIER

Qualified per MIL-PRF-19500/478

Devices				***Qualified Level***
1N5812	**1N5814**	**1N5815**	**1N5816**	**JAN**
1N5812R	**1N5814R**	**1N5815R**	**1N5816R**	**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 $T_C = +100^0C$ (1)	I_O	20			Adc
Forward Current Surge Peak $T_C = +100^0C$ $t_p = 8.3$ ms	I_{FSM}	400			Adc
Reverse Recovery Time	t_{rr}	35			ηs
Operating & Storage Junction Temperature	T_J, T_{stg}	-65 to +175			^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.5	$^0C/W$

1) Derate linearly 250 mA/^{0}C from +100^{0}C to +150^{0}C, & 300 mA/^{0}C above +150^{0}C

DO-203AA
(DO-4)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Thermal Impedance $I_H \geq$ rated I_O; $t_H \leq 250$ms; 10 mA $\leq I_M \leq$ 100 mA; $t_{MD} = 250$ μs (max)	$Z_{\theta JX}$		1.35	$^0C/W$
Forward Voltage $t_p \leq 8.3$ ms, duty cycle ≤ 2.0% pulsed				
$I_F = 10$ A (pk)	V_{F1}		0.860	Vdc
$I_F = 20$ A (pk)	V_{F2}		0.950	Vpk
Reverse Current V_R = Rated V_R (See 1.3 of MIL-PRF-19500/478)	I_R		10	μAdc
Breakdown Voltage				
$I_R = 100$ μAdc 1N5812, R	$V_{(BR)}$	60		Vdc
$I_R = 100$ μAdc 1N5814, R		110		
$I_R = 100$ μAdc 1N5816, R		160		
Junction Capacitance $V_R = 10$ Vdc, $V_{SIG} = 50$ mVdc (p-p) max, f = 1.0 MHz	C_J		300	pF
Forward Recovery Voltage $t_p \geq 20$ ηs, $t_r = 8.0$ ηs; $I_F = 1{,}000$ mA	V_{FR}		2.2	V(pk)
Forward Recovery Time $I_F = 1{,}000$ mA	t_{rr}		15	ηs