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TECHNICAL DATA SHEET

HIGH RELIABILITY ULTRA FAST RECOVERY RECTIFIER

Qualified per MIL-PRF-19500/478

- 175°C Junction Temperature • VRRM 50 to 150 Volts
- 20 Amps Current Rating

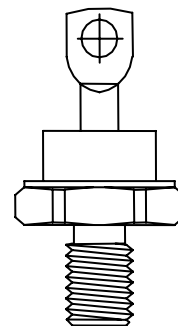
DEVICES

1N5812	1N5812R
1N5814	1N5814R
1N5816	1N5816R

LEVELS
JAN
JANTX
JANTXV
JANS

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Peak Repetitive Reverse Voltage 1N5812 / R 1N5814 / R 1N5816 / R	V_{RWM}	50 100 150	V
Peak Working Reverse Voltage 1N5812 / R 1N5814 / R 1N5816 / R	V_{RRM}	50 100 150	V
Average Forward Current, $T_C = 100^\circ$	I_F	20	A
Peak Surge Forward Current @ $t_p = 8.3\text{ms}$, half sinewave, $T_C = 100^\circ\text{C}$	I_{FSM}	400	A
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-65°C to 175°C	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65°C to 175°C	$^\circ\text{C}$



DO-203AA (DO-4)

ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$, unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Voltage $I_{FM} = 10\text{A}$, $T_C = 25^\circ\text{C}^*$	V_{FM}		0.860	V
Forward Voltage $I_{FM} = 20\text{A}$, $T_C = 25^\circ\text{C}^*$	V_{FM}		0.950	V
Forward Voltage $I_{FM} = 10\text{A}$, $T_C = 100^\circ\text{C}^*$	V_{FM}		0.780	V
Reverse Current $V_{RM} = 50\text{V}$, $T_C = 25^\circ\text{C}$ $V_{RM} = 100\text{V}$, $T_C = 25^\circ\text{C}$ $V_{RM} = 150\text{V}$, $T_C = 25^\circ\text{C}$ 1N5812 / R 1N5814 / R 1N5816 / R	I_{RM}		10	μA
Reverse Current $V_{RM} = 50\text{V}$, $T_C = 100^\circ\text{C}$ $V_{RM} = 100\text{V}$, $T_C = 100^\circ\text{C}$ $V_{RM} = 150\text{V}$, $T_C = 100^\circ\text{C}$ 1N5812 / R 1N5814 / R 1N5816 / R	I_{RM}		1	mA
Reverse Recovery Time $I_F = I_R = 1\text{A}$	T_{rr}		35	ns
Capacitance Junction $V_R = 10\text{V}$, $f = 1\text{MHz}$, $T_J = 25^\circ\text{C}$	C_J		300	pF

* Pulse test: Pulse width 300 μsec , Duty cycle 2%

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GRAPHS

FIGURE 1
TYPICAL FORWARD CHARACTERISTICS

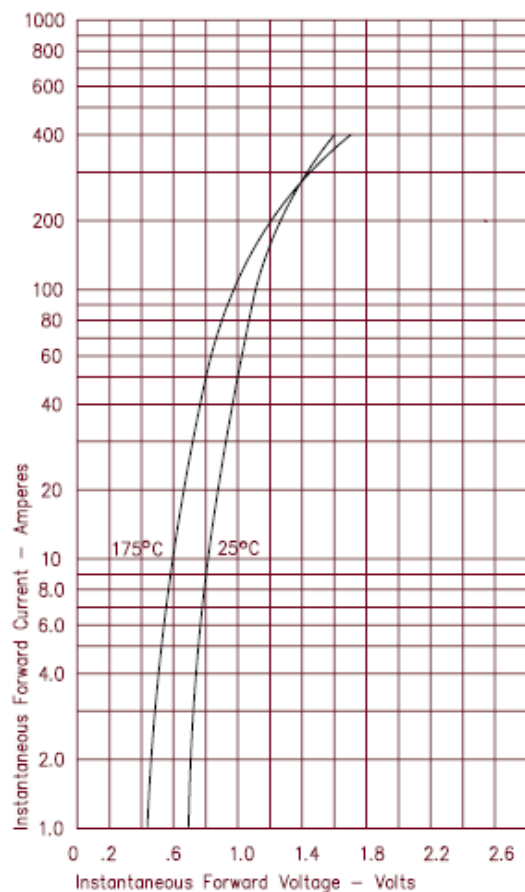


FIGURE 3
TYPICAL JUNCTION CAPACITANCE

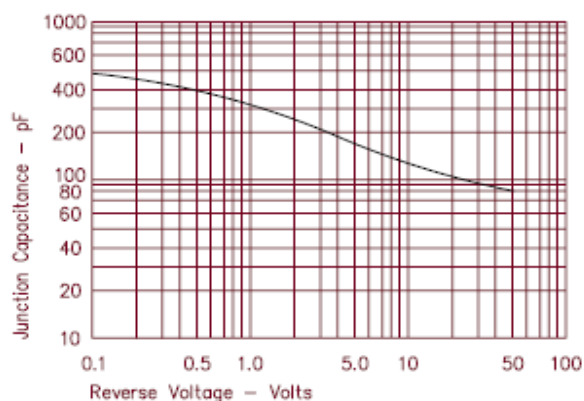


FIGURE 4
FORWARD CURRENT DERATING

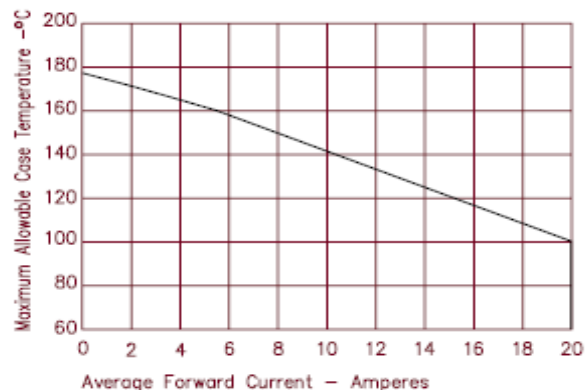
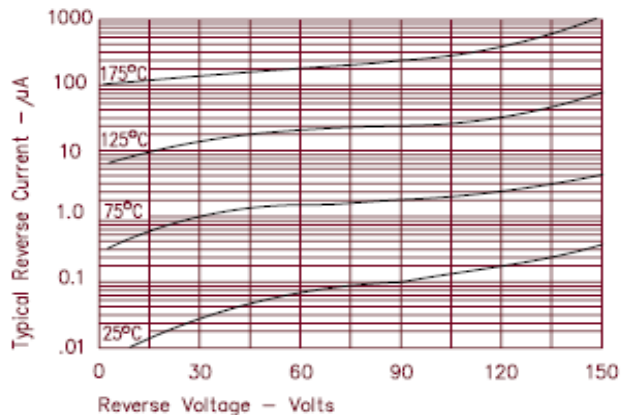
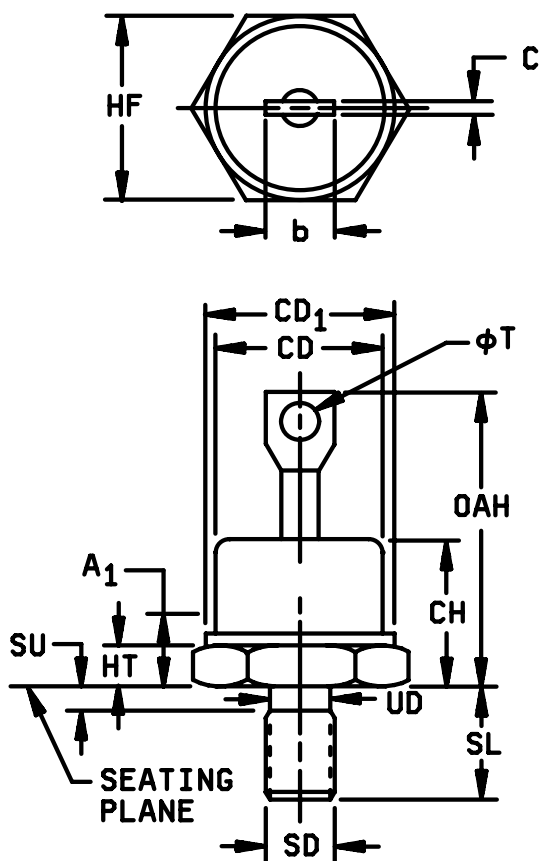


FIGURE 2
TYPICAL REVERSE CHARACTERISTICS



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PACKAGE DIMENSIONS



	Dimensions				Note s
	Inches		Millimeters		
	Min	Max	Min	Max	
A1		.250		6.35	
b		.250		6.35	3
C	.018	.065	0.46	1.65	
CD	.265	.424	6.74	10.77	
CD1	.265	.437	6.74	11.10	
CH	.300	.405	7.62	10.28	
HF	.424	.437	10.77	11.10	
HT	.075	.175	1.91	4.44	
OAH	.600	.800	15.24	20.32	
SD					4, 6
SL	.422	.453	10.72	11.50	
SU		.078		1.98	5
øT	.066	.103	1.68	2.62	
UD	.163	.189	4.14	4.80	

NOTES:

1. Dimensions are in inches.
2. Millimeter equivalents are given for general information only.
3. Angular orientation and contour of this terminal is undefined.
4. Pitch diameter .190-32 UNF-2A (coated) - .1697 (4.310 mm).
5. Length of incomplete or undercut threads of UD.
6. Anode for R suffix devices.
7. In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

Physical dimensions (DO-4)