

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to +175	°C
Thermal Resistance, Junction to Case	Non "A" "A" $R_{\theta JC}$	2.0 1.5	°C/W
Reverse Voltage	1N3889 A/R/AR 1N3890 A/R/AR 1N3891 A/R/AR 1N3892 A/R/AR 1N3893 A/R/AR V_R	50 100 200 300 400	V
Working Peak Reverse Voltage	1N3889 A/R/AR 1N3890 A/R/AR 1N3891 A/R/AR 1N3892 A/R/AR 1N3893 A/R/AR V_{RWM}	50 100 200 300 400	V(pk)
Repetitive Peak Reverse Voltage	1N3889 A/R/AR 1N3890 A/R/AR 1N3891 A/R/AR 1N3892 A/R/AR 1N3893 A/R/AR V_{RRM}	50 100 200 300 400	V
Average Forward Current, 180° Conduction Angle, 60Hz half-sine wave @ $T_C = 100^\circ\text{C}$	Non "A" "A" I_O	12 20	A
Maximum Non-Repetitive Sinusoidal Surge Current @ $T_C = 100^\circ\text{C}$ (8.3ms, half-sine)	Non "A" "A" I_{FSM}	175 250	A(pk)

Derate linearly 2% of I_O /°C for $T_C > 100^\circ\text{C}$

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

Parameter	Symbol	Min	max	Unit
Forward Voltage $I_{FM} = 38\text{A}, T_C = 25^\circ\text{C}^{(1)}$	V_{FM}	-	1.5	V
Forward Voltage $I_{FM} = 250\text{A}, T_C = 150^\circ\text{C}^{(2)}$	V_{FM}	-	2.75	V
Reverse Current $V_{RM} = 50\text{V}, T_C = 25^\circ\text{C}$ $V_{RM} = 100\text{V}, T_C = 25^\circ\text{C}$ $V_{RM} = 200\text{V}, T_C = 25^\circ\text{C}$ $V_{RM} = 300\text{V}, T_C = 25^\circ\text{C}$ $V_{RM} = 400\text{V}, T_C = 25^\circ\text{C}$	1N3889 A/R/AR 1N3890 A/R/AR 1N3891 A/R/AR 1N3892 A/R/AR 1N3893 A/R/AR I_{RM}	-	10	μA
Reverse Current $V_{RM} = 50\text{V}, T_C = 150^\circ\text{C}$ $V_{RM} = 100\text{V}, T_C = 150^\circ\text{C}$ $V_{RM} = 200\text{V}, T_C = 150^\circ\text{C}$ $V_{RM} = 300\text{V}, T_C = 150^\circ\text{C}$ $V_{RM} = 400\text{V}, T_C = 150^\circ\text{C}$	1N3889 A/R/AR 1N3890 A/R/AR 1N3891 A/R/AR 1N3892 A/R/AR 1N3893 A/R/AR I_{RM}	-	2	mA
Reverse Recovery Time 1N3890, 1N3891, 1N3893 /R 1N3890A, 1N3891A, 1N3893A /AR	t_{rr}	-	200 150	ns
Junction Capacitance	C_J	115 (typ.)		pF

Note 1: Pulse test: pulse width 300 μsec . Duty cycle 2%

Note 2: Pulse test: Pulse width 800 μsec

Note 3: $I_F = 1\text{A}, V_R = 30\text{A}, di/dt = 25\text{A}, T_C = 55^\circ$

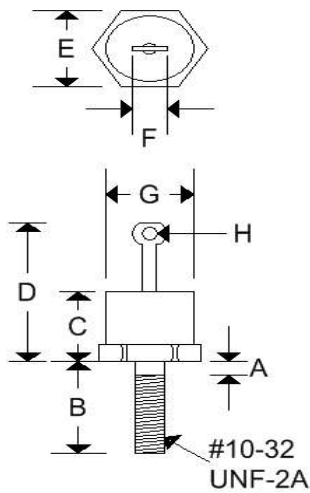
Note 4: $V_R = 10\text{V}, f = 1\text{Mhz}, T_J = 25^\circ\text{C}$

1N3889(A,R,RA)-1N3893(A,R,RA)

FAST RECOVERY RECTIFIER

MECHANICAL CHARACTERISTICS

Case	DO-4(R)
Marking	Alpha-numeric
Normal polarity	Cathode is stud
Reverse polarity	Anode is stud (add "R" suffix)



	DO-4(R)			
	Inches		Millimeters	
	Min	Max	Min	Max
A	-	0.078	-	1.981
B	0.422	0.453	10.719	11.506
C	-	0.405	-	10.287
D	-	0.800	-	20.320
E	0.420	0.440	10.668	11.176
F	-	0.250	-	6.350
G	-	0.424	-	10.770
H	0.066	-	1.676	-

1N3889(A,R,RA)-1N3893(A,R,RA)

FAST RECOVERY RECTIFIER

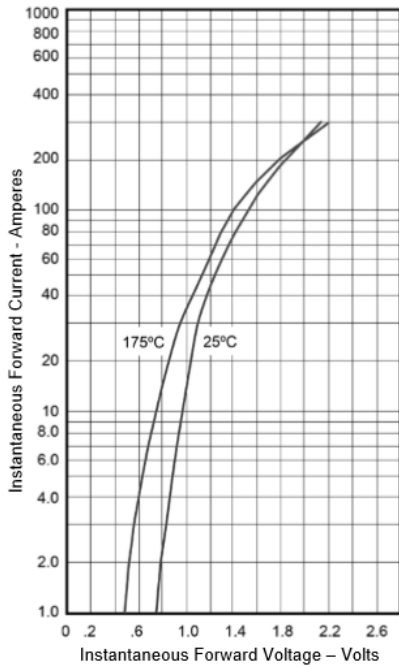


FIGURE 1 – Typical Forward Characteristics

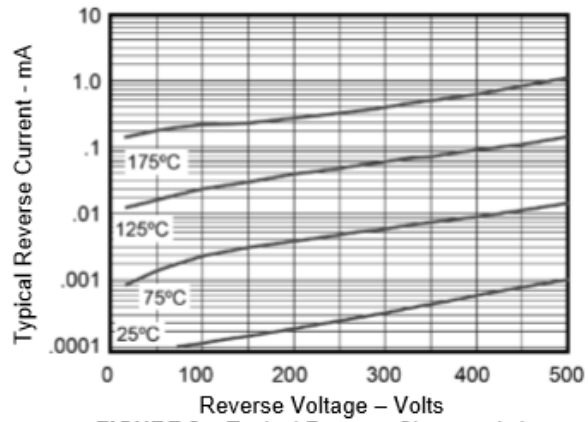


FIGURE 2 – Typical Reverse Characteristics

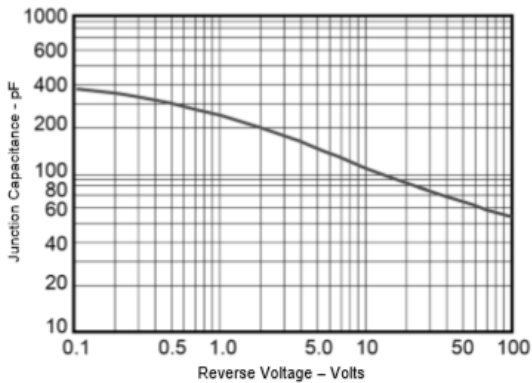


FIGURE 3 – Typical Junction Capacitance

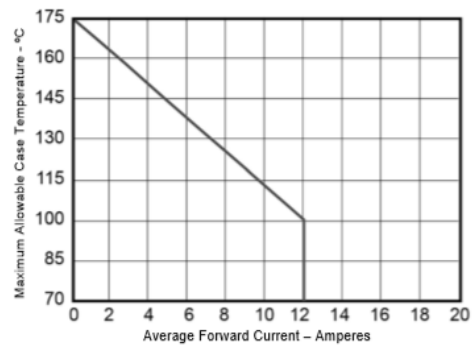


FIGURE 4 – Forward Current Derating

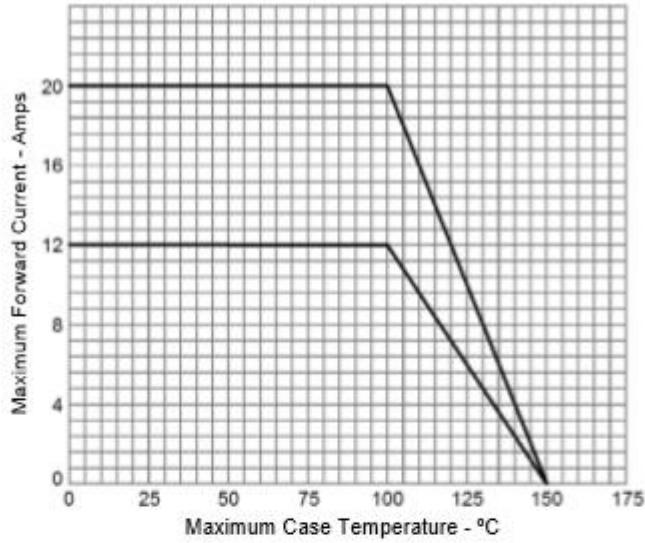


Figure 5 – Maximum Forward Current vs. Maximum Case Temperature

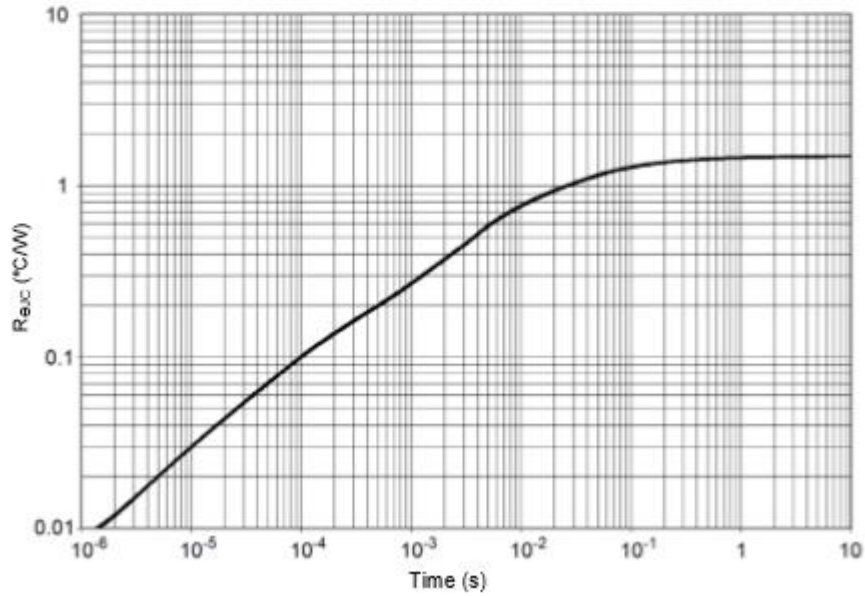


Figure 6 – Thermal Impedance for "A" type devices