

# 1N3899-1N3903

## FAST RECOVERY RECTIFIERS

### 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	1N3899	1N3900	1N3901	1N3902	1N3903
Working peak reverse voltage	$V_{RWM}$	50V	100V	200V	300V	400V
Peak repetitive reverse voltage	$V_{RRM}$	50V	100V	200V	300V	400V
Operating temperature range	$T_J$	-65 to +150°C				
Storage temperature range	$T_{stg}$	-65 to +175°C				
Maximum thermal resistance	$R_{\theta JC}$	1.8°C/W junction to case				
Mounting torque		25-30 inch pounds				
Weight		.54 ounces (15.3 grams) typical				

Add "R" to part numbers for reverse polarity.

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

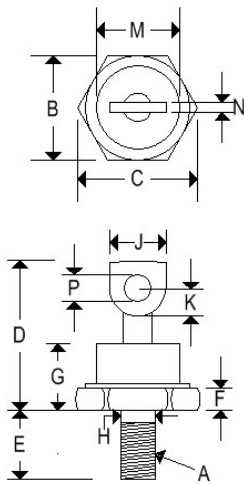
Parameter	Symbol	Value	Test Conditions
Average forward current	$I_{F(AV)}$	20 Amps	$T_C = 100^\circ\text{C}$ , square wave, $R_{\theta JC} = 1.8^\circ\text{C/W}$
Maximum surge current	$I_{FSM}$	225 Amps	8.3ms, half-sine, $T_C = 100^\circ\text{C}$
Maximum peak forward voltage	$V_{FM}$	1.40 Volts	$I_{FM} = 63\text{A}$ ; $T_J = 25^\circ\text{C}^*$
Maximum peak reverse current	$I_{RM}$	50 $\mu\text{A}$	$V_{RRM}$ , $T_J = 25^\circ\text{C}$
Maximum peak reverse current	$I_{RM}$	6.0 mA	$V_{RRM}$ , $T_J = 150^\circ\text{C}$
Maximum reverse recovery time	$t_{RR}$	200ns	$I_F = 1\text{A dc}$ , $V_R = 30\text{V}$ , $di/dt = 25\text{A}/\mu\text{s}$
Typical junction capacitance	$C_J$	150pF	$V_R = 10\text{V}$ , $f = 1\text{MHz}$ , $T_J = 25^\circ\text{C}$

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### MECHANICAL CHARACTERISTICS

Case	DO-5(R)
Marking	Alpha-numeric
Normal polarity	Cathode is stud
Reverse polarity	Anode is stud (add "R" suffix)



	DO-5(R)			
	Inches		Millimeters	
	Min	Max	Min	Max
A	¼-28 UNF2A threads			
B	0.669	0.688	16.990	17.480
C	-	0.794	-	20.160
D	-	1.000	-	25.400
E	0.422	0.453	10.720	11.510
F	0.115	0.200	2.920	5.080
G	-	0.450	-	11.430
H	0.220	0.249	5.580	6.320
J	0.250	0.375	6.350	9.530
K	0.156	-	3.960	-
M	-	0.667	-	16.940
N	0.030	0.080	0.760	2.030
P	0.140	0.175	3.560	4.450

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Figure 1  
Typical Forward Characteristics

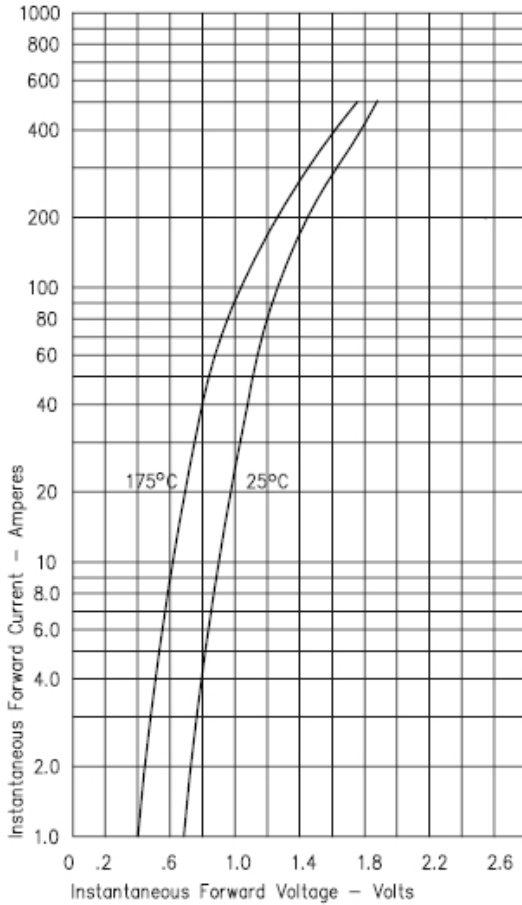


Figure 3  
Typical Junction Capacitance

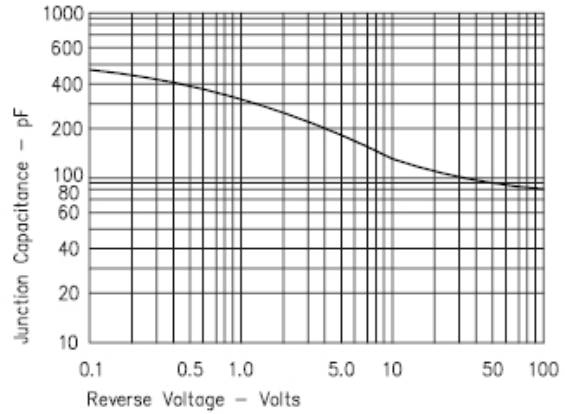


Figure 4  
Forward Current Derating

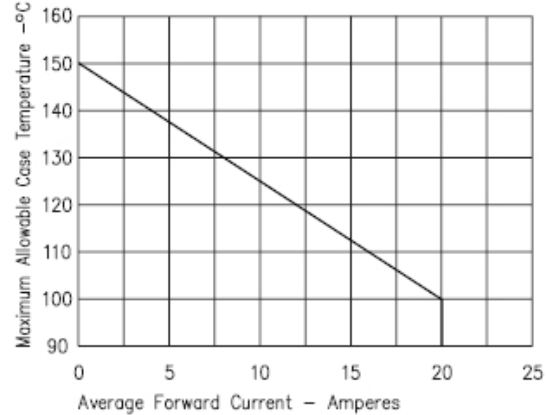


Figure 2  
Typical Reverse Characteristics

