

# DIGITRON SEMICONDUCTORS

1N3899-1N3903

FAST RECOVERY RECTIFIER

## 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.

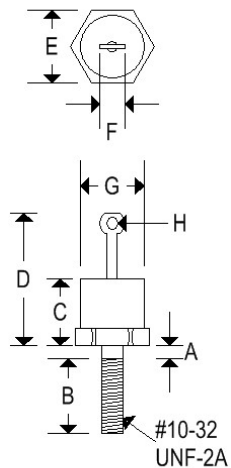
## ELECTRICAL CHARACTERISTICS

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	$V_R = 10\text{V}$ , $f = 1\text{MHz}$ , $T_J = 25^\circ\text{C}$

\* Pulse test: pulse width 300 $\mu\text{sec}$ . Duty cycle 2%

## 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	-

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

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Figure 1  
Typical Forward Characteristics

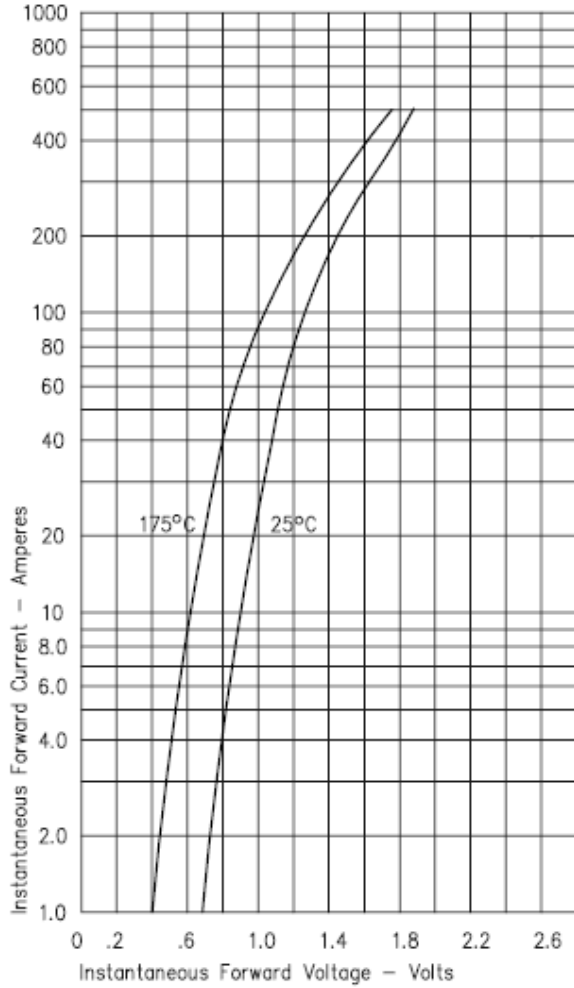


Figure 3  
Typical Junction Capacitance

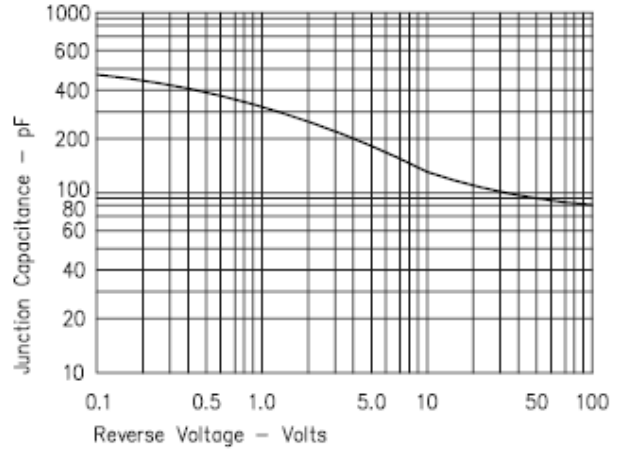


Figure 4  
Forward Current Derating

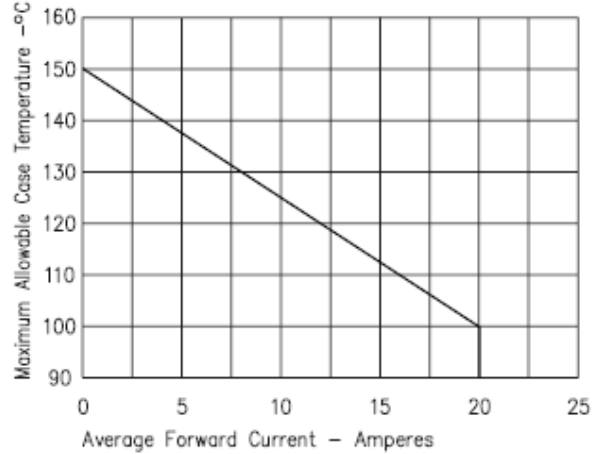


Figure 2  
Typical Reverse Characteristics

