

HIGH RELIABILITY FAST RECOVERY RECTIFIER

Qualified per MIL-PRF-19500/304

- 175°C Junction Temperature
- VRRM 100 to 400 Volts
- 20 Amps Current Rating

DEVICES

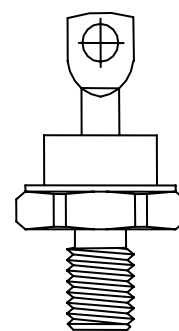
1N3890	1N3890A	1N3890R	1N3890AR
1N3891	1N3891A	1N3891R	1N3891AR
1N3893	1N3893A	1N3893R	1N3893AR

LEVELS

JAN
JANTX
JANTXV

ABSOLUTE MAXIMUM RATINGS (T_C = +25°C unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Peak Repetitive Reverse Voltage 1N3890 / A / R / AR 1N3891 / A / R / AR 1N3893 / A / R / AR	V _{RWM}	100 200 400	V
Peak Working Reverse Voltage 1N3890 / A / R / AR 1N3891 / A / R / AR 1N3893 / A / R / AR	V _{RRM}	100 200 400	V
Average Forward Current, T _C = 100°	I _F	20	A
Peak Surge Forward Current @ t _p = 8.3ms, half sinewave, T _C = 100°C	I _{FSM}	175 250	A
Thermal Resistance, Junction to Case	R _{θJC}	1.5	°C/W
Operating Junction Temperature Range	T _J	-65°C to 175°C	°C
Storage Temperature Range	T _{stg}	-65°C to 175°C	°C



DO-203AA (DO-4)

ELECTRICAL CHARACTERISTICS (T_A = +25°C, unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Voltage I _{FM} = 38A, T _C = 25°C*	V _{FM}		1.5	V
Forward Voltage I _{FM} = 250A, T _C = 150°C**	V _{FM}		2.75	V
Reverse Current V _{RM} = 100V, T _C = 25°C V _{RM} = 200V, T _C = 25°C V _{RM} = 400V, T _C = 25°C	I _{RM}		10	μA
Reverse Current V _{RM} = 100V, T _C = 150°C V _{RM} = 200V, T _C = 150°C V _{RM} = 400V, T _C = 150°C	I _{RM}		2	mA
Reverse Recovery Time V _{RM} = 30V, I _F = 1A, T _C = 55°C*	T _{rr}		200 150	ns

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

** Pulse test: Pulse width 800 μsec

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GRAPHS

FIGURE 1
TYPICAL FORWARD CHARACTERISTICS

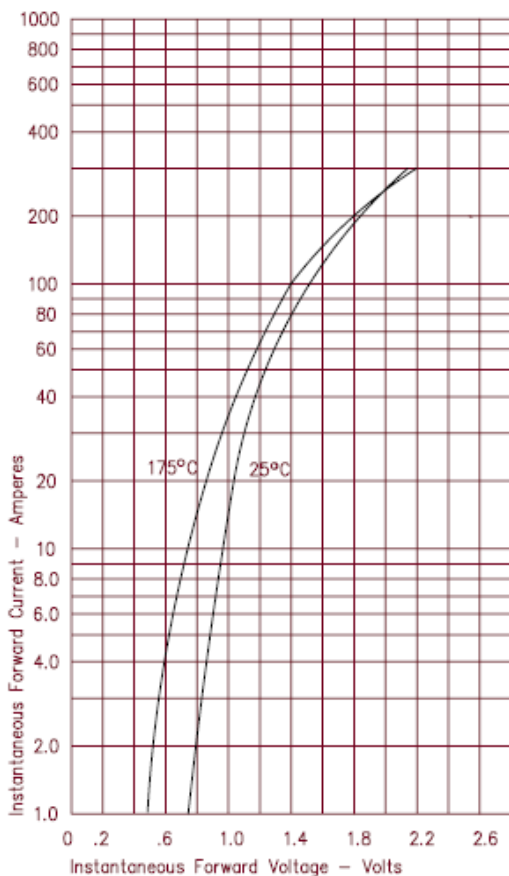


FIGURE 3
TYPICAL JUNCTION CAPACITANCE

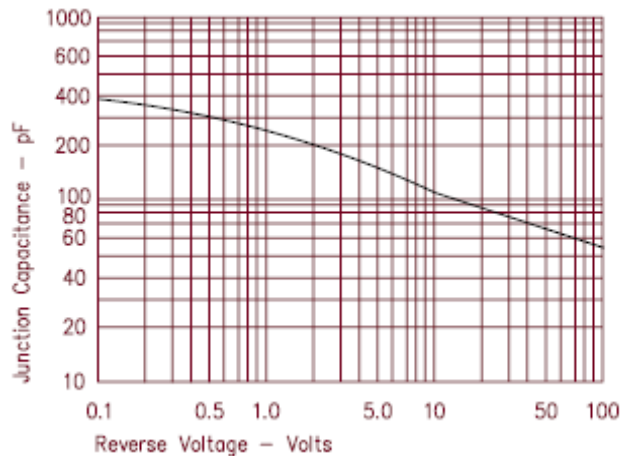


FIGURE 4
FORWARD CURRENT DERATING

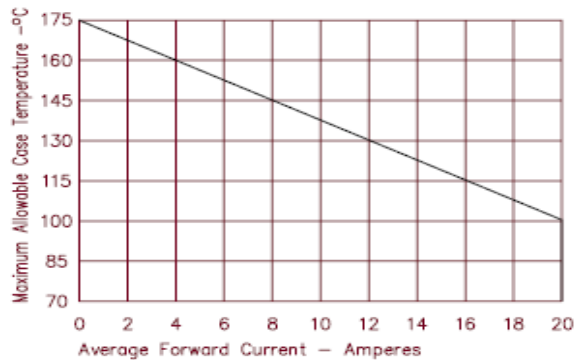
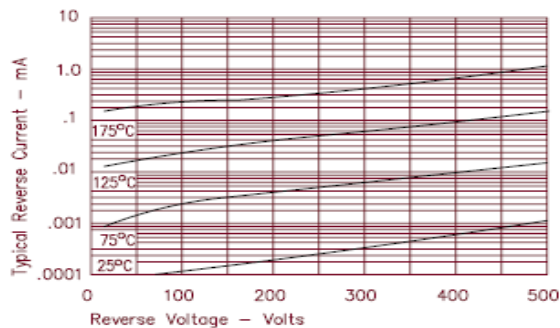
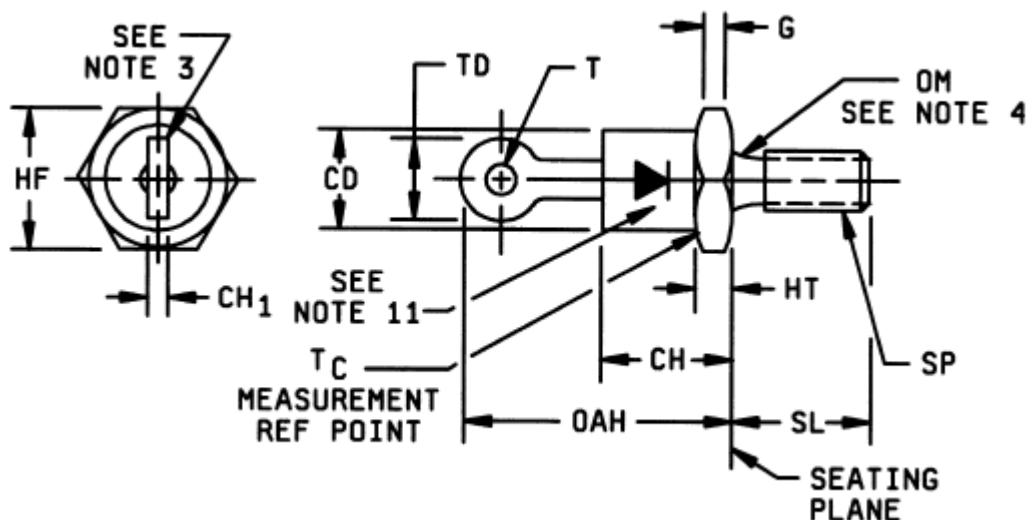


FIGURE 2
TYPICAL REVERSE CHARACTERISTICS



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PACKAGE DIMENSIONS



Physical dimensions of non-isolated types: (DO-4)

1N3890, 1N3890A, 1N3891, 1N3891A, 1N3893, 1N3893A, 1N3890R, 1N3890AR, 1N3891R, 1N3891AR, 1N3893R and 1N3893AR

NOTES:

- Dimensions are in inches.
- Metric equivalents are given for general information only.
- Angular orientation of this terminal is undefined. Square or radius on end of terminals is optional.
- Diameter variations within these limits are permitted.
- The ANSI thread reference is 0.190-32 UNF-2A
- Max pitch diameter of plated threads shall be basic pitch diameter 0.169 inch (4.29 mm) reference FED-STD-H28 (Screw Thread Standards for Federal Services).
- Units must not be damaged by torque of 15 inch-pounds applied to 0.190-32 UNF-2B nut assembled on thread.
- Complete threads to extend to within 0.078inch (1.98 mm) of the seating plane.
- Terminal-end shape is unrestricted
- Reversed (anode to stud) units shall be marked with an "R" following the last digit in the type number.
- Forward polarity (cathode to stud) marking is shown.

Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD		0.250		6.35	3
CH		0.405		10.29	
CH1	0.020	0.065	0.51	1.65	
G	0.060		1.52		
HF	0.424	0.437	10.77	11.10	
HT	0.075	0.175	1.90	4.44	
OAH		0.800		20.32	
OM	0.163	0.189	4.14	4.80	
SL	0.422	0.453	10.72	11.50	
SP					5, 6, 7, 8
T	0.060		1.52		
TD		0.424		10.77	