

T-03-17

# IN3889-IN3893 SERIES

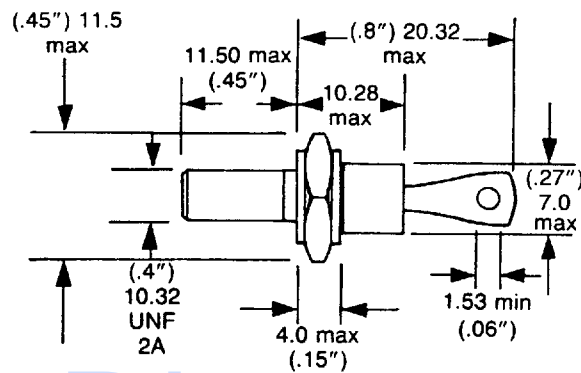
## Fast Recovery Rectifier 12 Amp Silicon Diode

### FEATURES

- Hermetically sealed D04
- Recovery time 200 nS
- Low overshoot current
- Normal and reverse polarity

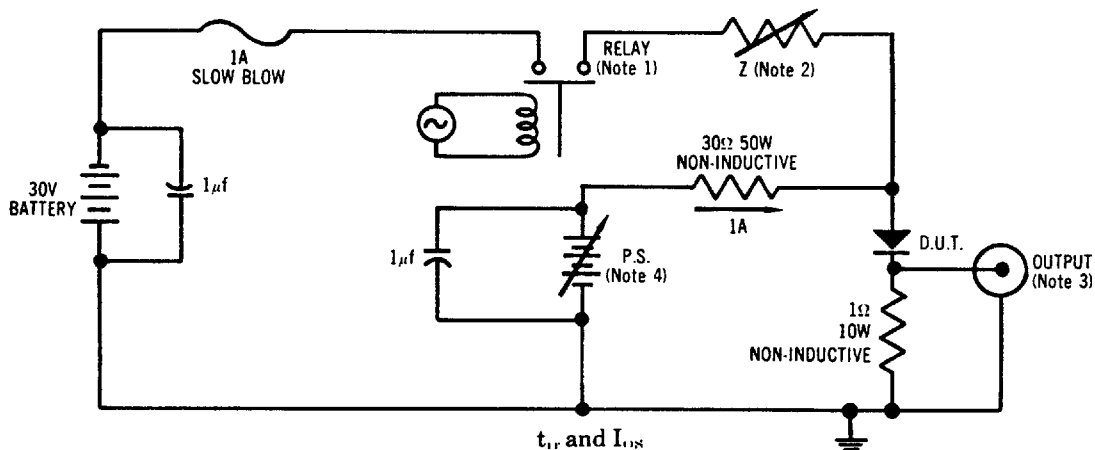
### MECHANICAL DATA

- Case: Industry standard D04 7/16th Hex stud with 10-32 UNF threads, welded, hermetically sealed metal and glass
- Finish: All external surfaces are corrosion resistant and terminal solderable
- Weight: 7.5 grams
- Mounting Position: Any
- Polarity: Standard polarity: cathode to stud.  
Reverse polarity: anode to stud (suffix R)



Case Outline SO10A (DO. 4) diam in mm (inch)

### TEST CIRCUIT FOR RECOVERY TIME





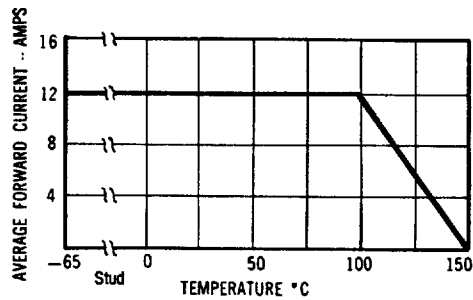
**Electrical Characteristics @ 25°C, unless otherwise specified**

JEDEC Type Number	Rated DC Blocking Voltage	Peak Reverse Voltage	Average Forward Current	Maximum Forward Voltage	Maximum Reverse Current			
					25°C	100°C		
	-65°C to 100°C	-65°C to 100°C	-65°C to 100°C	$I_f = 12A$	$I_o = 12A @ V_{RM}$ -65°C to 100°C	$V_R = \text{Rated Value}$	@ $V_{RM}$ $I_o = 12A$ $f = 60Hz$	
	$V_R$	$V_{RM}$	$I_o$	$V_R$	$V_f$ (Peak)	$I_R$	$I_R$	$I_R$ (Ave)
	Volts	Volts	Amps	Volts	Volts	$\mu A$	mA	mA
1N3889	50	50	12	1.4	1.5	25	3.0	5.0
1N3890	100	100	12	1.4	1.5	25	3.0	5.0
1N3891	200	200	12	1.4	1.5	25	3.0	5.0
1N3892	300	300	12	1.4	1.5	25	3.0	5.0
1N3893	400	400	12	1.4	1.5	25	3.0	5.0

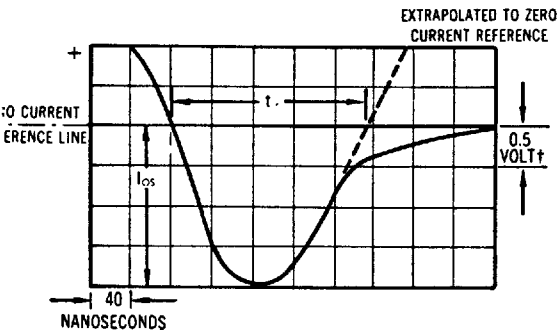
**Switching Characteristics @ 25°C, unless otherwise specified**

JEDEC Type Number	Maximum Recovery Time	Maximum Current Overshoot
	See Fig. 1, 2 & 3	
	$t_r$	$I_{os}$
	nSec	Amps
1N3889	200	2.0
1N3890	200	2.0
1N3891	200	2.0
1N3892	200	2.0
1N3893	200	2.0

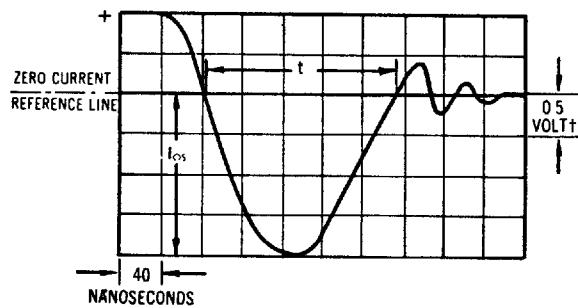
DERATING CURVE



TYPICAL OSCILLOSCOPE PATTERNS OF RECOVERY



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- NOTE 1 The relay is a make-before-break, wetted-mercury-contact type driven by a 60 Hz sine wave. Conduction time is 640  $\mu$ Sec and it is open approximately 7.7 mSec.
- NOTE 2 Z is a 3  $\Omega$ , 25 W rheostat adjusted for a resistance of 1.4  $\Omega$  from the relay to the anode. The inductance between the same points is 38  $\mu$ H.
- NOTE 3 Monitoring oscilloscope characteristics:  $t_r \leq 14nSec$ ,  $R_{in} = 9 M\Omega$ ,  $C_{in} \leq 12 pF$ ,  $L_{in} \leq 0.5 \mu H$ .
- NOTE 4 Power supply has an output impedance of 0.5  $\Omega$  from DC to 2kHz.

