

# SF21 THRU SF28

## SUPERFAST RECOVERY RECTIFIER



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HORNBY ELECTRONIC

**REVERSE VOLTAGE:** 50 to 600 VOLTS

**FORWARD CURRENT:** 2.0 AMPERE

### FEATURES

- High surge capability
- Low forward voltage, high current capability
- Hermetically sealed
- Superfast recovery times
- Low leakage.
- Suffix "H" indicates Halogen-free parts, ex. SF21H

### MECHANICAL DATA

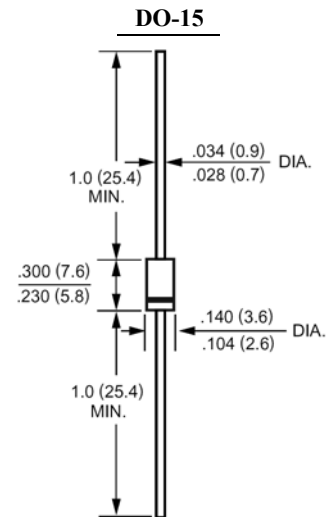
Case : Molded plastic, DO-15

Epoxy : UL 94V-O rate flame retardant

Lead : Axial leads, solderable per MIL-STD-202,  
method 208 guaranteed

Polarity : Color band denotes cathode end

Mounting position : Any



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Parameter	Symbols	SF21	SF22	SF23	SF24	SF25	SF26	SF28	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	Volts
Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	2.0							Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	50.0							Amp
Maximum Forward Voltage at 2.0A DC and 25°C	$V_F$	0.95				1.3		1.7	Volts
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	$I_R$	5.0				100			uAmp
Typical Junction Capacitance (Note 1)	$C_J$	22							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	40.0							°C/W
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	35							nS
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +150							°C

#### NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal Resistance Junction to Ambient and from junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted.

3- Reverse Recovery Test Conditions:  $I_F=.5A$ ,  $I_R=1A$ ,  $I_{RR}=.25A$ .

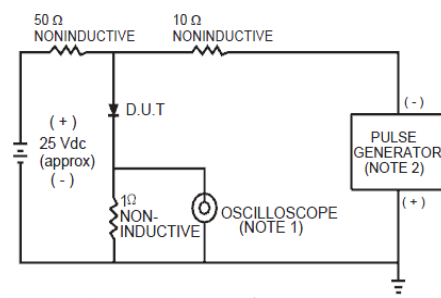
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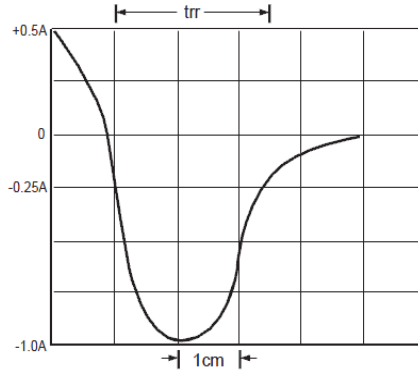


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### RATINGS AND CHARACTERISTIC CURVES



NOTES: 1 Rise Time = 7ns max. Input Impedance = 1 megohm. 22pF.  
2. Rise Time = 10ns max. Source Impedance = 50 ohms.



SET TIME BASE FOR 50/100 ns/cm

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

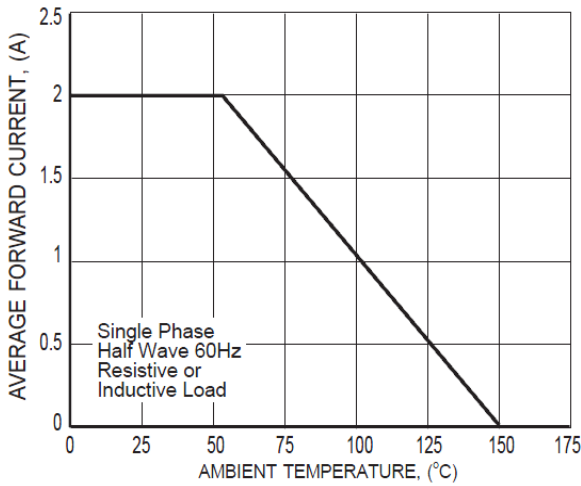


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

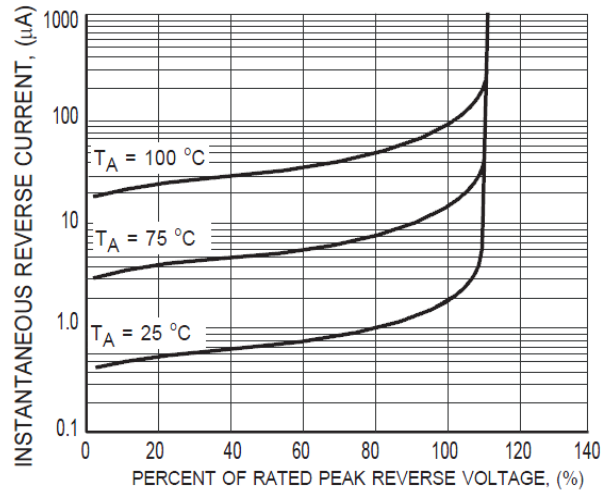


FIG.3 TYPICAL REVERSE CHARACTERISTICS

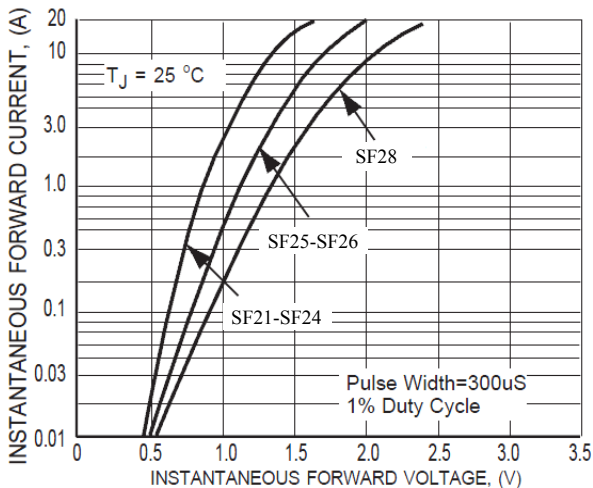


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

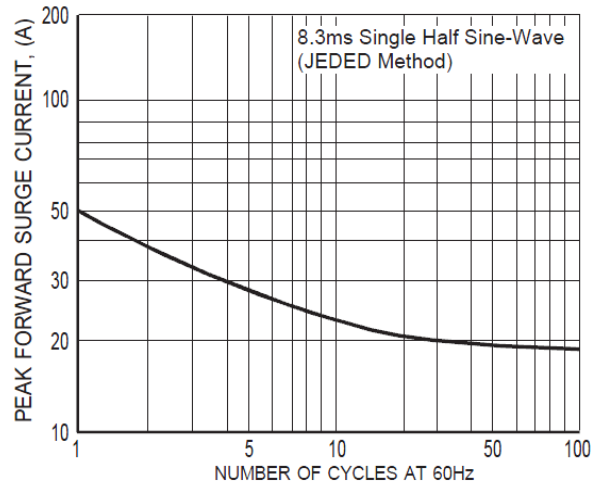


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT