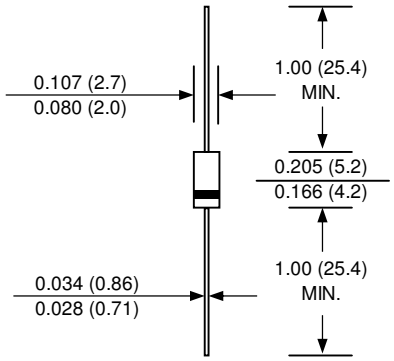
SYNSEMI SEMICONDUCTOR

SFO1 - SFO9

SUPER FAST RECTIFIER DIODES

PRV : 50 - 1000 Volts
Io : 1.5 Amperes

DO - 41



Dimensions in inches and (millimeters)

FEATURES :

* High current capability
* High surge current capability
* High reliability
* Low reverse current
* Low forward voltage drop
* Super fast recovery time
* Pb / RoHS Free

MECHANICAL DATA :

* Case : DO-41 Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.34 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

RATING	SYMBOL	SFO1	SFO2	SFO3	SFO4	SFO5	SFO6	SFO7	SFO8	SFO9	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	800	1000	V
Maximum Average Forward Current 0.375"(9.5mm) Lead Length Ta = 55 °C	$I_{F(AV)}$	1.5									A
Peak Forward Surge Current 8.3 ms. Single half sine wave Superimposed on rated load (JEDEC Method)	I_{FSM}	60									A
Maximum Peak Forward Voltage at I_F = 1.5 A.	V_F	0.95				1.7			4.0		V
Maximum DC Reverse Current Ta = 25 °C	I_R	5									µA
at Rated DC Blocking Voltage Ta = 100 °C	$I_{R(H)}$	50									µA
Maximum Reverse Recovery Time (Note 1)	Trr	35									ns
Typical Junction Capacitance (Note 2)	C_J	50									pf
Junction Temperature Range	T_J	- 65 to + 150									°C
Storage Temperature Range	T_{STG}	- 65 to + 150									°C

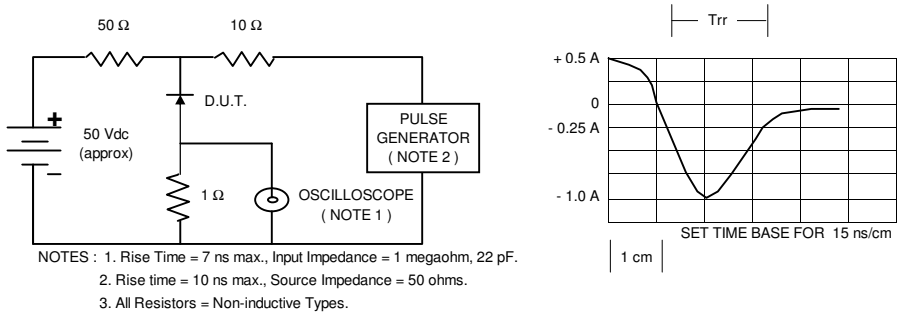
Notes :

(1) Reverse Recovery Test Conditions : I_F = 0.5 A, I_R = 1.0 A, Irr = 0.25 A.

(2) Measured at 1.0 MHz and applied reverse voltage of 4.0 V_{DC}

RATING AND CHARACTERISTIC CURVES (SFO1 - SFO9)

FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

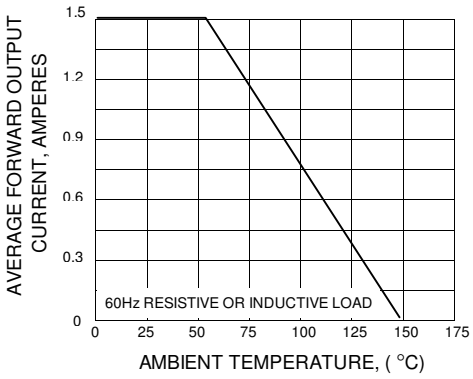


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

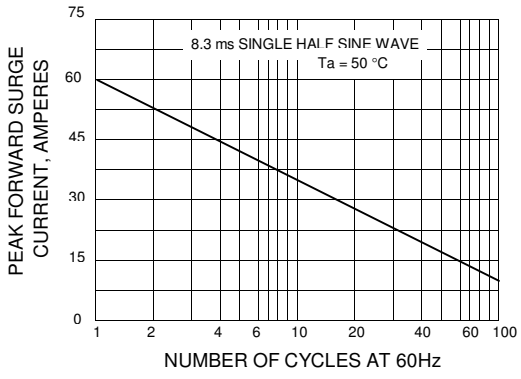


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

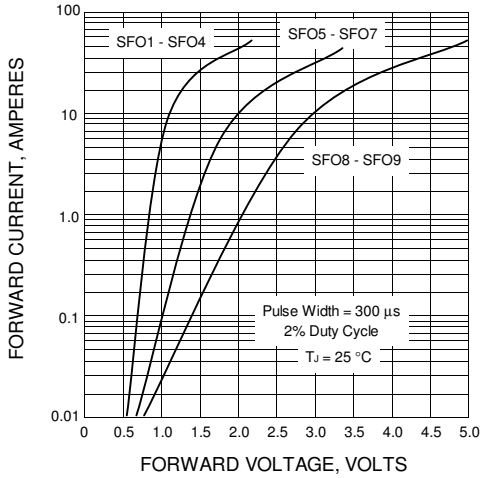


FIG.5 - TYPICAL REVERSE CHARACTERISTICS