ESM101 THRU ESM106

SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

GROWCHILD ELECTRONICS™

REVERSE VOLTAGE: **50 to 400 VOLTS**

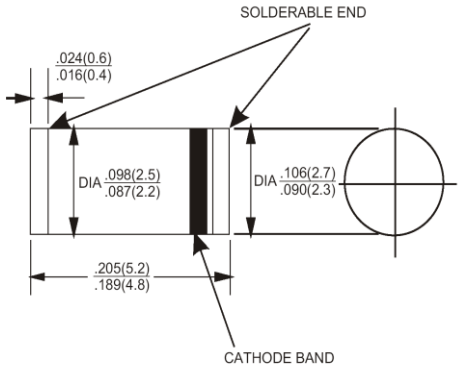
FORWARD CURRENT: **1.0 AMPERE**

http://www.njzrg.com

FEATURES

· Plastic package has Underwriters Laboratory Flammability Classification 94V-O
· For surface mounted applications
· High temperature metallurgically bonded construction
· Superfast recovery times
· Cavity-free glass passivated junction
· Capable of meeting environmental standards of MIL-S-19500
· High temperature soldering : 260°C /10 seconds at terminals

MELF



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic, MELF
Epoxy: UL 94V-O rate flame retardant
Terminals: Solder plated, solderable per MIL-STD-750, method 208 guaranteed
Polarity: Color band denotes cathode end
Mounting position: Any
Weight: 0.005 ounce, 0.12 gram

Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60H_Z, resistive or inductive load.
For capacitive load, derate current by 20%.

	Symbols	*ESM101*	*ESM102*	*ESM103*	*ESM104*	*ESM105*	*ESM106*	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	**Volts**
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	**Volts**
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	**Volts**
Maximum Average Forward Rectified Current at T_A=55℃	$I_{(AV)}$	1.0						**Amp**
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30						**Amp**
Maximum Forward Voltage at 1.0A and T_A=25℃	V_F	0.95				1.25		**Volts**
Maximum Reverse Current at T_A=25℃ at Rated DC Blocking Voltage T_A=125℃	I_R	5.0 100						**μAmp**
Typical Junction Capacitance (Note 1)	C_J	15				10		**pF**
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	85						**nS**
Typical Thermal Resistance (Note 3)	$R_{\theta JT}$	35						
Maximum Reverse Recovery Time (Note 4)	T_{RR}	35						**℃/W**
Operating and Storage Temperature Range	T_J, Tstg	-55 to +175						**℃**

NOTES:

1- Measured at 1 MH_Z and applied reverse voltage of 4.0 VDC.
2- Thermal resistance from junction to ambient, 0.24 x 0.24" (6.0 x 6.0mm) copper pads to each terminal
3- Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 x 6.0mm) copper pads to each terminal
4- Reverse Recovery Test Conditions：I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

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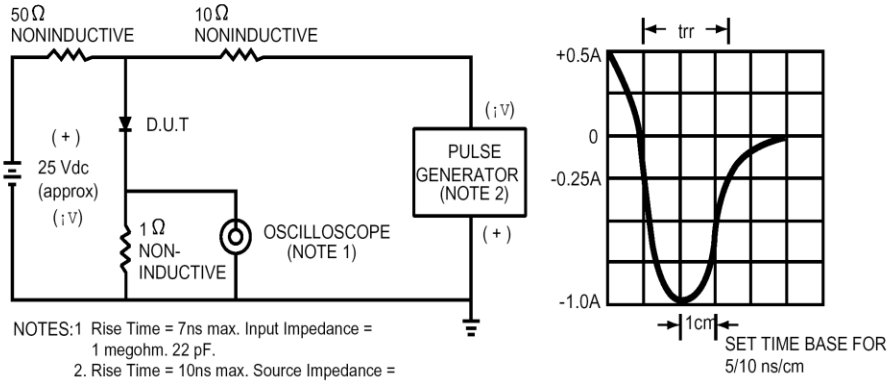
RATINGS AND CHARACTERISTIC CURVES

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



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

FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

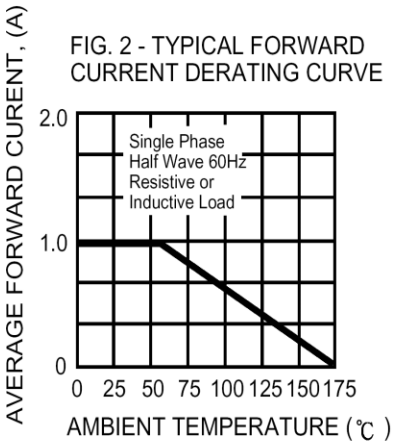


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

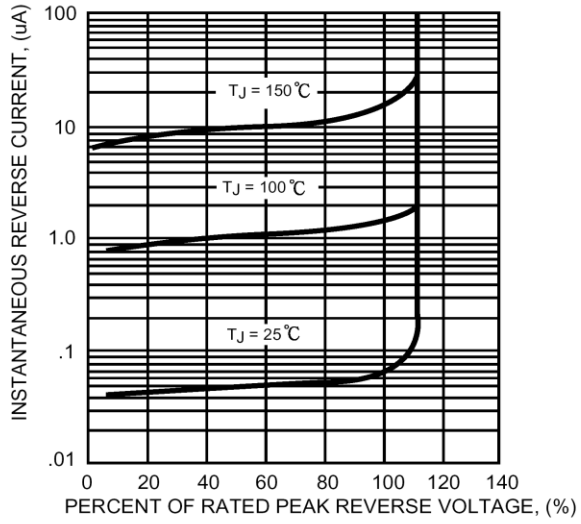


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

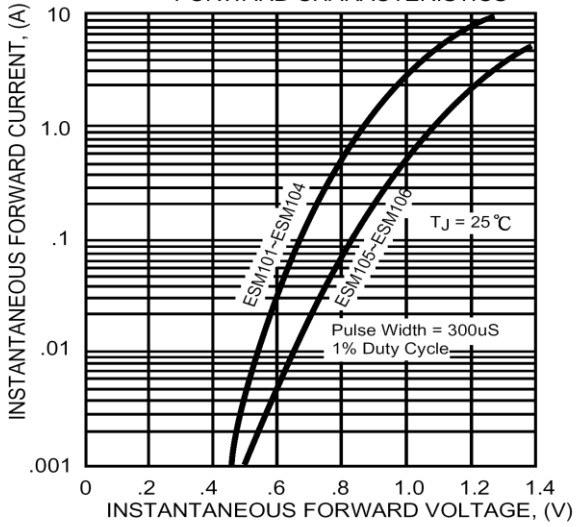


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

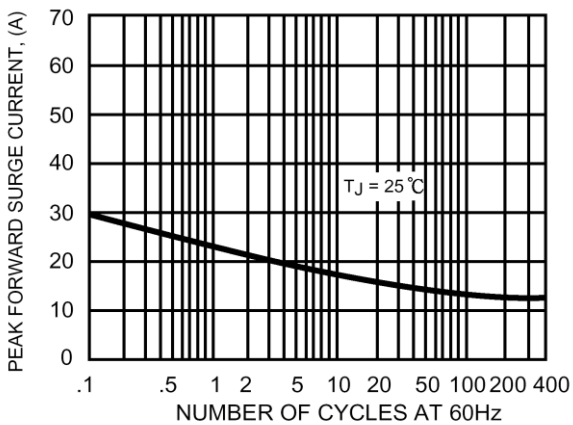


FIG. 6 - TYPICAL JUNCTION CAPACITANCE