

SUPER FAST RECTIFIER

VOLTAGE RANGE: 100 --- 600 V
CURRENT: 1.0 A

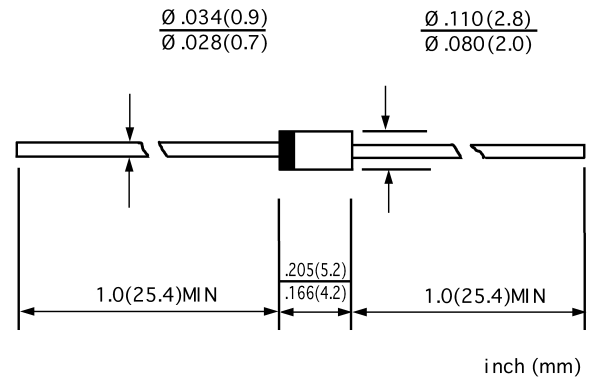
FEATURES

- ◇ Low cost
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with alcohol, Isopropanol and similar solvents
- ◇ The plastic material carries U/L recognition 94V-0

MECHANICAL DATA

- ◇ Case: JEDEC DO-41, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.012 ounces, 0.34 grams
- ◇ Mounting position: Any

DO - 41



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

		ER101	ER102	ER103	ER104	ER106	UNITS
Maximum recurrent peak reverse voltage	V_{RRM}	100	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	70	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	100	200	300	400	600	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	I_{FSM}	30.0					A
Maximum instantaneous forward voltage @ 1.0A	V_F	0.95		1.25		1.7	V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	I_R			5.0		150.0	μA
Maximum reverse recovery time (Note 1)	t_{rr}			35			ns
Typical junction capacitance (Note 2)	C_J			22			pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$			50			$^\circ\text{C/W}$
Operating junction temperature range	T_J			- 55 ----- + 150			$^\circ\text{C}$
Storage temperature range	T_{STG}			- 55 ----- + 150			$^\circ\text{C}$

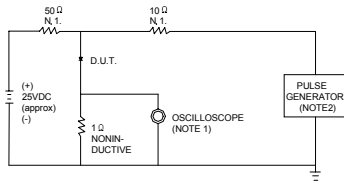
NOTE: 1. Measured with $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$.

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

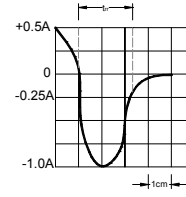
3. Thermal resistance junction to ambient.

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



NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ, 22pF.
 2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50 Ω.



SET TIME BASE FOR 10/20 ns/cm

FIG.2 – TYPICAL FORWARD CHARACTERISTIC

INSTANTANEOUS FORWARD CURRENT, AMPERES

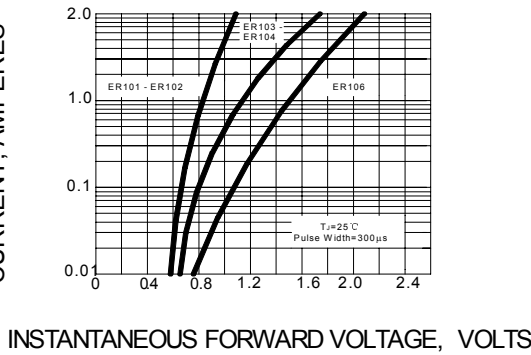


FIG.3 – FORWARD DERATING CURVE

AVERAGE FORWARD CURRENT AMPERES

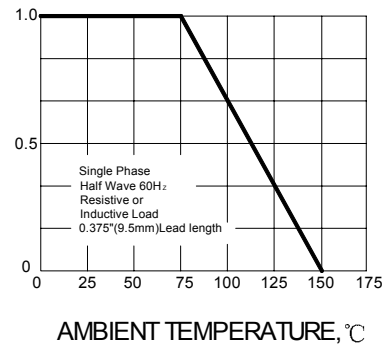


FIG.4 – TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE, pF

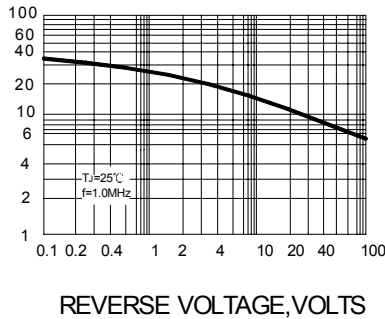


FIG.5 – PEAK FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT, AMPERES

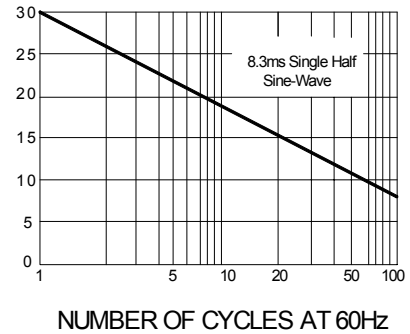


FIG.6 – TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

