

# ER100L-ER106L

Ultra Fast Rectifiers

**VOLTAGE RANGE: 50 — 600 V**

**CURRENT: 1.0 A**



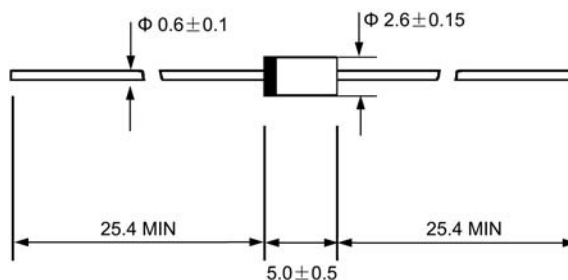
**A - 405**

## Features

- ◇ Low cost
- ◇ Diffuse junction
- ◇ Ultra fast switching for high efficiency
- ◇ Low reverse leakage current
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ The plastic material carries U/L recognition 94V-0

## Mechanical Data

- ◇ Case: JEDEC A-405, molded plastic
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.008 ounces, 0.23 grams
- ◇ Mounting position: Any



Dimensions in millimeters

## 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%.

		ER 100L	ER 101L	ER 101AL	ER 102L	ER 103L	ER 104L	ER 106L	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	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							$\mu\text{A}$
Maximum reverse recovery time (Note1)	$t_{rr}$	35							ns
Typical junction capacitance (Note2)	$C_J$	17							pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	50							$^\circ\text{C}/\text{W}$
Operating junction temperature range	$T_J$	- 55 ----- + 150							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 ----- + 150							$^\circ\text{C}$

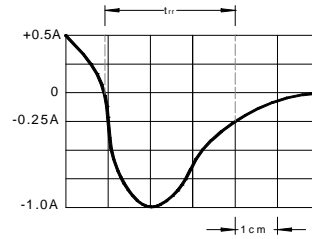
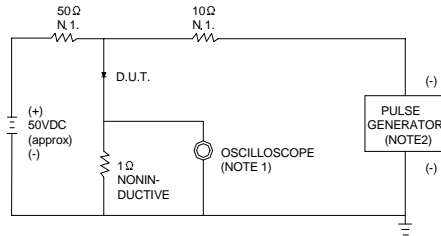
NOTE: 1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

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

3. Thermal resistance junction to ambient

### Ratings AND Characteristic Curves

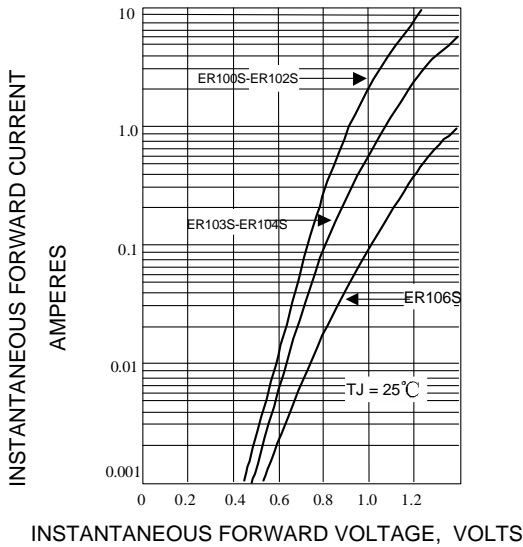
**FIG.1 -- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



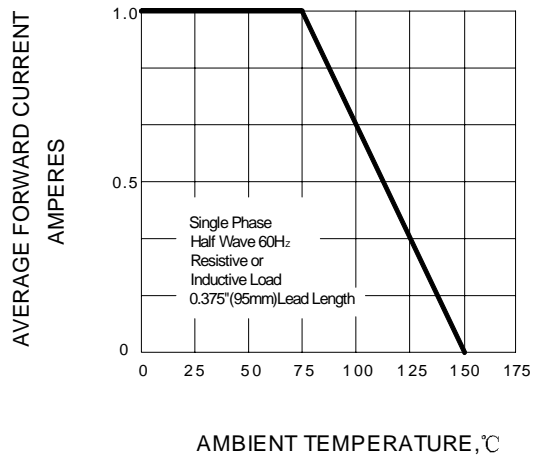
NOTES: 1. RISE TIME = 7ns MAX.INPUT IMPEDANCE = 1MΩ .22pF.  
 2. RISE TIME = 10ns MAX.SOURCE IMPEDANCE=50 Ω .

SET TIME BASE FOR 5 ns/cm

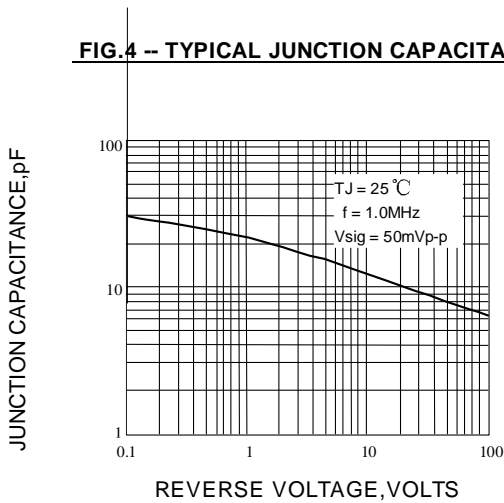
**FIG.2 -- TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 -- FORWARD DERATING CURVE**



**FIG.4 -- TYPICAL JUNCTION CAPACITANCE**



**FIG.5 -- PEAK FORWARD SURGE CURRENT**

