

ES1F-ES1A

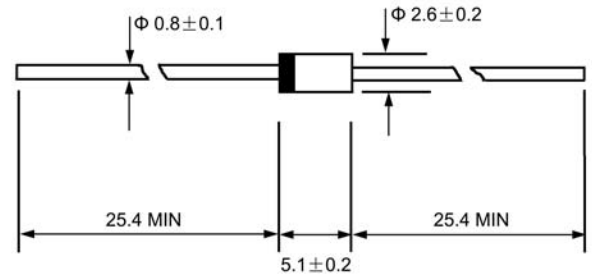
Fast Recovery rectifiers

VOLTAGE RANGE: 1500 --- 600 V

CURRENT: 0.7 A



DO - 41



Dimensions in millimeters

Features

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

Mechanical Data

- ◇ Case: JEDEC DO-41, molded plastic
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.012 ounces, 0.34 grams
- ◇ Mounting position: Any

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%.

		ES1F	ES1Z	ES1	ES1A	UNITS
Maximum recurrent peak reverse voltage	V_{RRM}	1500	200	400	600	V
Maximum RMS voltage	V_{RMS}	1050	140	280	420	V
Maximum DC blocking voltage	V_{DC}	1500	200	400	600	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	0.5	0.7			A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	I_{FSM}	20.0	30.0			A
Maximum instantaneous forward voltage @ 0.5/0.7A	V_F	2.0	2.5			V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	I_R	10.0		5.0		μA
Maximum reverse recovery time (Note1)	t_{rr}	350				ns
Typical junction capacitance (Note2)	C_J	15				pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	50				$^\circ\text{C/W}$
Operating junction temperature range	T_J	-55-----+150				$^\circ\text{C}$
Storage temperature range	T_{STG}	-55---- +150				$^\circ\text{C}$

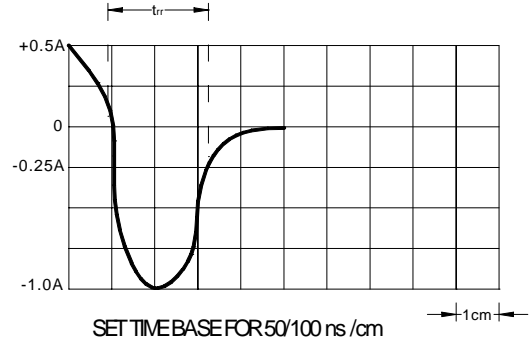
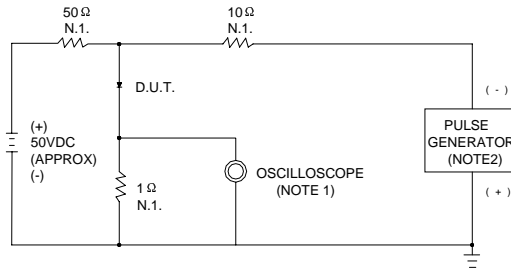
NOTE:1. Measured with $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$.

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

3. Thermal resistance from junction to ambient.

Ratings AND Characteristic Curves

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



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

FIG.2 – FORWARD DERATING CURVE

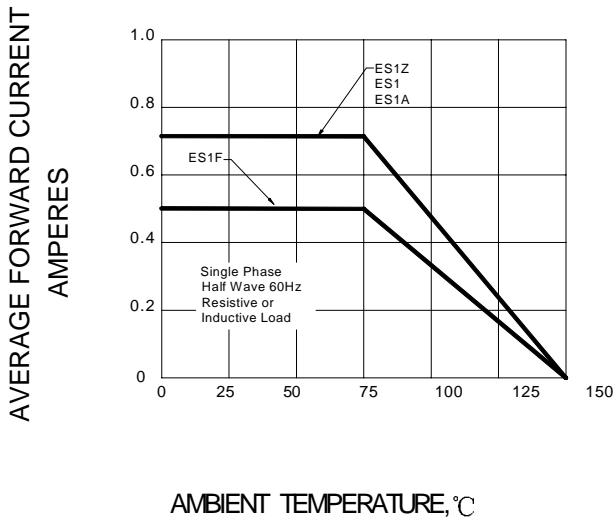


FIG.3 – TYPICAL FORWARD CHARACTERISTIC

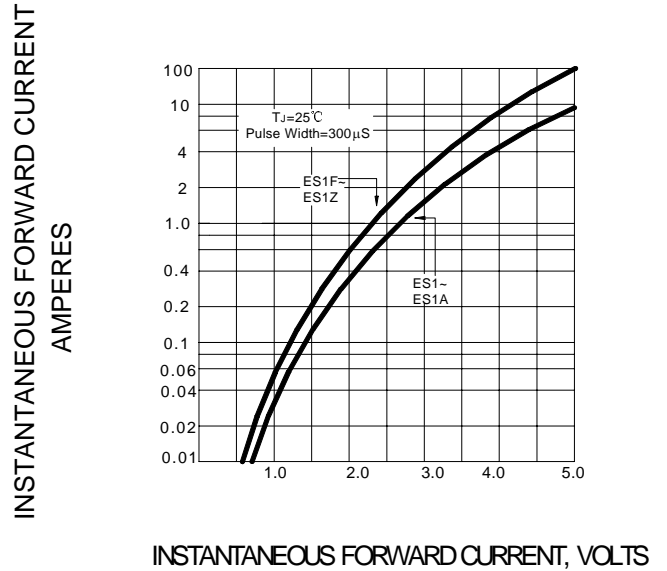


FIG.4- PEAK FORWARD SURGE CURRENT

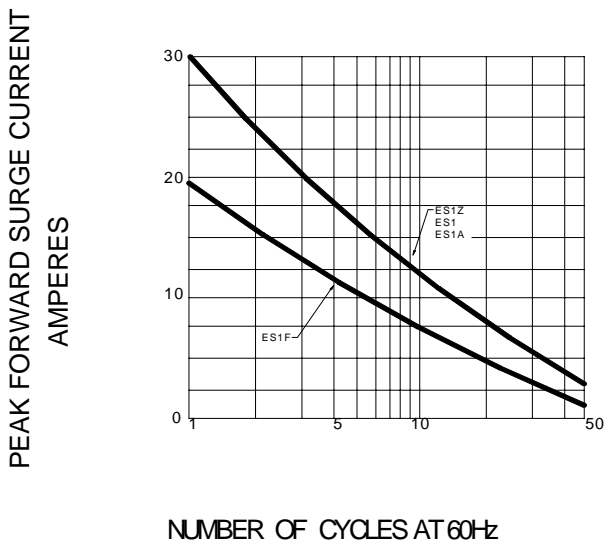


FIG.5- TYPICAL JUNCTION CAPACITANCE

