# SHENZHEN FAITH TECHNOLOGY CO.,LTD

SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

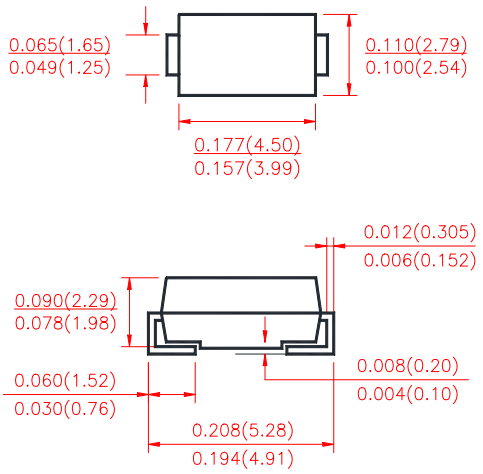
## ES1A THRU ES1K

**VOLTAGE RANGE** 50 to 800 Volts
**CURRENT** 1.0 Ampere

## Features

- Fast recovery glass passivated chip
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering:
  260℃/10S at terminals
- Component in accordance to
  ROHS 2002/95/1 and WEEE 2002/96/EC

## DO-214AC(SMA)




Dimensions in inches and (millimeters)

## Mechanical Data

- Case: JEDEC SMA（DO-214AC） mold plastic
  Body over glass passivated chip
- Terminals:Solder plated, solderable per
  J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- Weight: 0.002 ounce, 0.064 gram

## Maximum Ratings and Electrical Characteristics

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

| TYPE NUMBER | SYMBOLS | ES 1A | ES 1B | ES 1C | ES 1D | ES 1E | ES 1G | ES 1J | ES 1K | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | 800 | Volts |
| Maximum RMS Voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | 210 | 280 | 420 | 560 | Volts |
| Maximum DC Blocking Voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | 800 | Volts |
| Maximum Average Forward Rectified Current See Fig.1 | $I_{(AV)}$ | 1.0 | | | | | | | | Amps |
| Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 30 | | | | | | | | Amps |
| Maximum Instantaneous Forward Voltage at 1.0A | $V_F$ | 0.95 | | | | 1.30 | | 1.70 | | Volts |
| Maximum DC Reverse Current at rated DC blocking voltage at $T_A$ = 25℃ | $I_R$ | 5.0 | | | | | | | | μAmps |
| Maximum DC Reverse Current at rated DC blocking voltage at $T_A$ = 125℃ | $I_R$ | 100 | | | | | | | | μAmps |
| Maximuml Reverse Recovery Time Test conditions $I_F$ =0.5A, $I_R$ =1.0A, $I_{RR}$ =0.25A (NOTE 1) | $T_{RR}$ | 35 | | | | | | | | nS |
| Typical Junction Capacitance (NOTE 1) | $C_J$ | 10 | | | | 8 | | | | pF |
| Typical Thermal Resistance (NOTE 2) | $R_{\theta JA}$ | 88 | | | | | | | | ℃/W |
| Typical Thermal Resistance (NOTE 2) | $R_{\theta JL}$ | 28 | | | | | | | | ℃/W |
| Operating Junction Temperature | $T_J$ | (-55 to +150) | | | | | | | | ℃ |
| Storage Temperature Range | $T_{STG}$ | (-55 to +150) | | | | | | | | ℃ |

**Notes:**

1. Reverse Recovery Test Conditions:If=0.5A,Ir=1.0A,Irr=0.25A.
2. Polymide PCB. with 0.2×0.2″(5.0 × 5.0mm) . Copper, minimum recommended pad layout per.

# ES1A THRU ES1K

**VOLTAGE RANGE** **50 to 800 Volts**

**CURRENT** **1.0 Ampere**

## Ratings and Characteristic Curves (TA=25℃ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

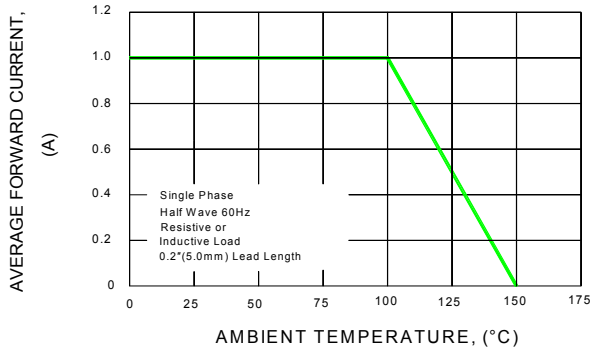



FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

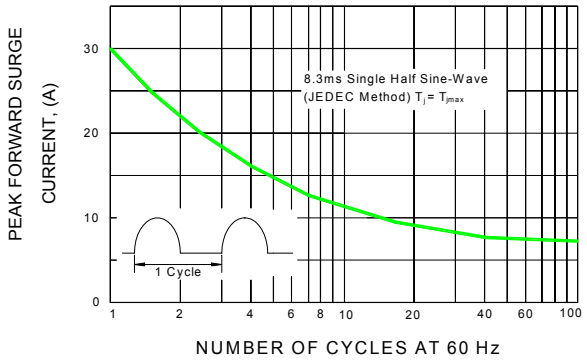



FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

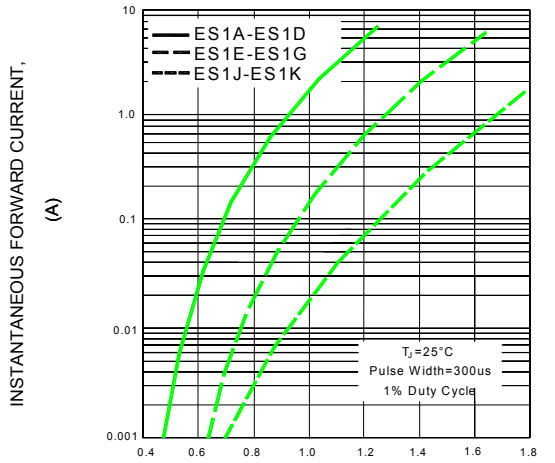



FIG.4-TYPICAL REVERSE CHARACTERISTICS

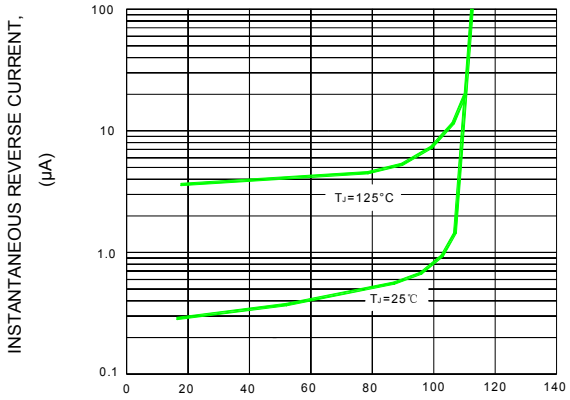
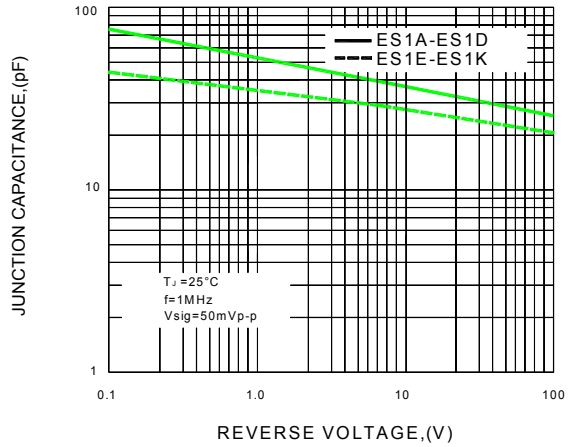
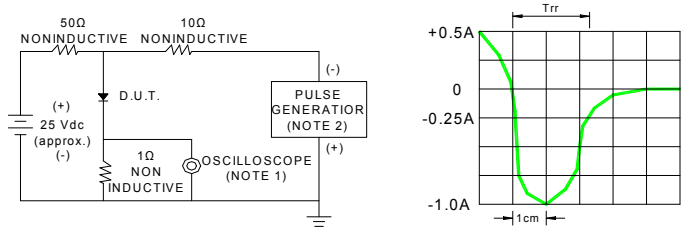



FIG.5-TYPICAL JUNCTION CAPACITANCE




F1G.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC




NOTES : 1.Rise Time=7ns max. Input Impedance= 1 magohm. 22pF

2.Rise time=10ns max. Source Impedance= 50 ohms

SET TIME BASE FOR 50/100ns/cm