# *ES1XF SERIES*

***SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER***

# 产品规格确认书

# ES1AF THRU ES1JF

## *SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER*

康 比 電 子
HORNBY ELECTRONIC

***REVERSE VOLTAGE:*** **50 to 600 VOLTS**

***FORWARD CURRENT:*** **1.0 AMPERE**

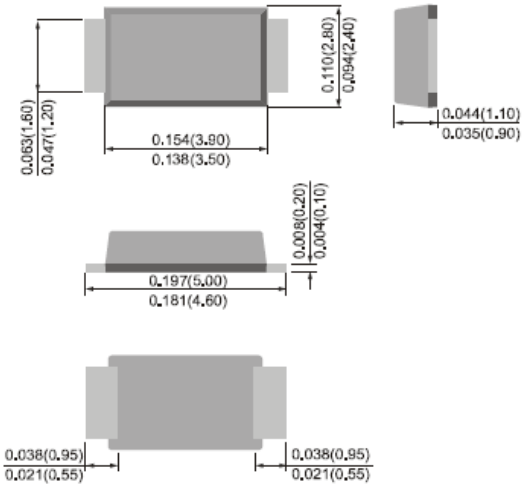
### *FEATURES*

· Plastic package has Underwriters Laboratory Flammability Classification 94V-O
· For surface mounted applications
· Low profile package
· Easy pick and place
· Built-in strain relief
· Superfast recovery times for high efficiency
· High temperature soldering : 250°C /10 seconds at terminals

### *MECHANICAL DATA*

Case: Molded plastic, SMAF
Terminals: Solder plated, solderable per MIL-STD-750, method 2026 guaranteed
Polarity: Color band denotes cathode end
Packaging: 12mm tape per EIA STD RS-481

**SMAF**




**Dimensions in inches and (millimeters)**

## *Maximum Ratings and Electrical Characteristics*

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

| | Symbols | *ES1AF* | *ES1BF* | *ES1CF* | *ES1DF* | *ES1EF* | *ES1GF* | *ES1JF* | Units |
|---|---|---|---|---|---|---|---|---|---|
| **Maximum Recurrent Peak Reverse Voltage** | $V_{RRM}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | **Volts** |
| **Maximum RMS Voltage** | $V_{RMS}$ | 35 | 70 | 105 | 140 | 210 | 280 | 420 | **Volts** |
| **Maximum DC Blocking Voltage** | $V_{DC}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | **Volts** |
| **Maximum Average Forward Rectified Current See Fig.2** | $I_{(AV)}$ | 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** | $V_F$ | 0.95 | | | | 1.25 | | 1.70 | **Volts** |
| **Maximum Reverse Current at $T_A$=25℃ at Rated DC Blocking Voltage $T_A$=125℃** | $I_R$ | 5.0<br>100 | | | | | | | **μAmp** |
| **Typical Junction Capacitance (Note 1)** | $C_J$ | 15 | | | | | | | **pF** |
| **Typical Thermal Resistance (Note 2)** | $R_{\theta JA}$ | 80 | | | | | | | **℃/W** |
| **Maximum Reverse Recovery Time (Note 3)** | $T_{RR}$ | 35 | | | | | | | **nS** |
| **Operating Junction Temperature Range** | $T_J$ | -55 to +150 | | | | | | | **℃** |
| **Storage Temperature Range** | Tstg | -55 to +150 | | | | | | | **℃** |

**NOTES:**

1- Measured at 1 M$H_Z$ and applied reverse voltage of 4.0 VDC.

2- Thermal resistance from junction to ambient mounted on P.C.B. with 5.0 x 5.0mm copper pad areas

3- Reverse Recovery Test Conditions：$I_F$=.5A，$I_R$=1A，$I_{RR}$=.25A.

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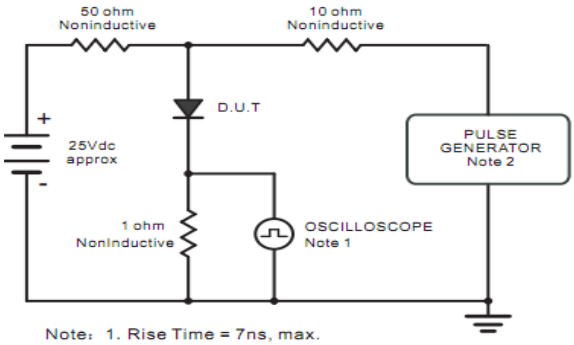
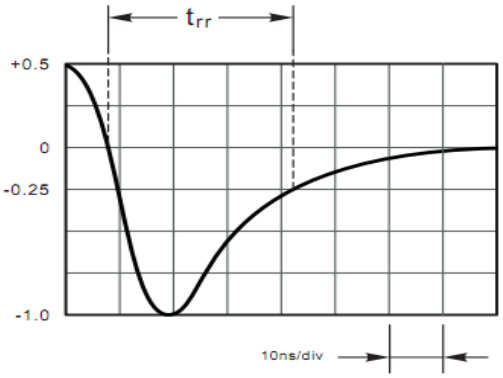
### *RATINGS AND CHARACTERISTIC CURVES*

**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**




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




Set time Base for 10ns/div

**Fig.2 Maximum Average Forward Current Rating**

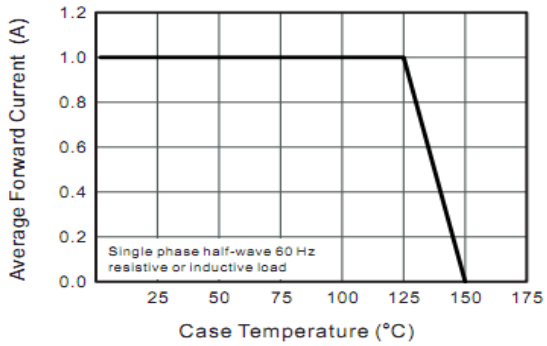



**Fig.3 Typical Reverse Characteristics**

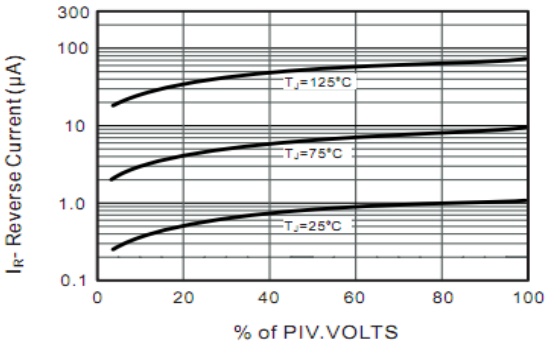



**Fig.4 Typical Forward Characteristics**

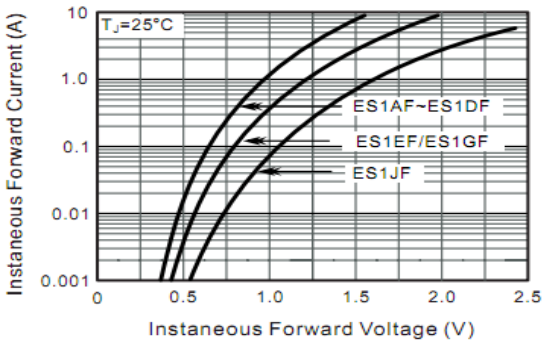



**Fig.5 Typical Junction Capacitance**

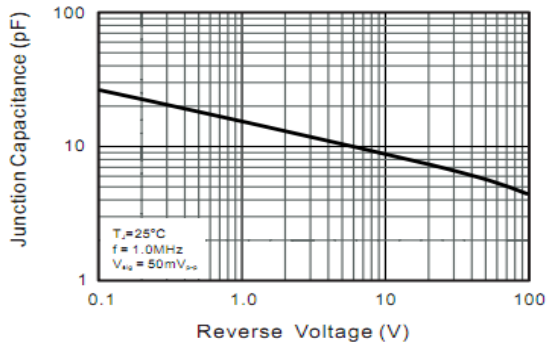



**Fig.6 Maximum Non-Repetitive Peak Forward Surage Current**