# ES3A THRU ES3J

## SURFACE MOUNT FAST ULTRAFAST RECTIFIER

**VOLTAGE：50 TO 600V** **CURRENT：3.0A**

GULF SEMI

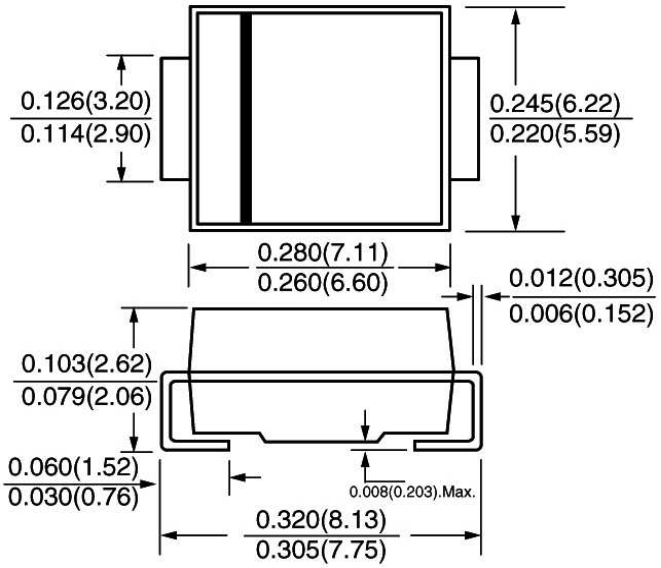
## FEATURE

Ideal for surface mount pick and place application
Low profile package
Built-in strain relief
High surge capability
High temperature soldering guaranteed
260℃/10sec/at terminals
Glass passivated chip
Ultrafast recovery time for high efficiency

## MECHANICAL DATA

Terminal：Solder plated, solderable per MIL-STD-750, Method 2026
Case：JEDEC DO-214AB molded plastic body over passivated chip
Polarity：color band denotes cathode

**SMC / DO-214AB**




Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(single-phase, half-wave, 60HZ, resistive or inductive load rating at 25℃, unless otherwise stated, for capacitive load, derate current by 20%)

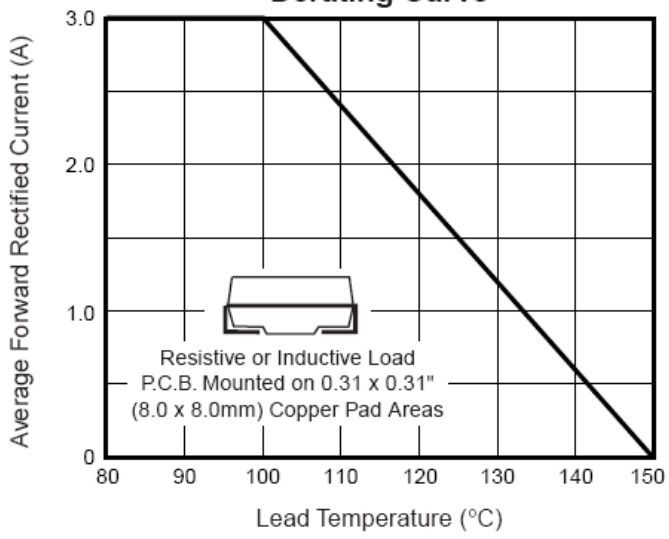
| | SYMBOL | ES3A | ES3B | ES3C | ES3D | ES3G | ES3J | units |
|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | Vrrm | 50 | 100 | 150 | 200 | 400 | 600 | V |
| Maximum RMS Voltage | Vrms | 35 | 70 | 105 | 140 | 280 | 420 | V |
| Maximum DC blocking Voltage | Vdc | 50 | 100 | 150 | 200 | 400 | 600 | V |
| Maximum Average Forward Rectified at $T_L$ =100℃ | If(av) | 3.0 | | | | | | A |
| Peak Forward Surge Current 8.3ms single half sine- wave superimposed on rated load | Ifsm | 100.0 | | | | | | A |
| Maximum Instantaneous Forward Voltage at rated forward current 3.0A | Vf | 0.90 | | | | 1.25 | 1.7 | V |
| Maximum DC Reverse Current Ta =25℃<br>at rated DC blocking voltage Ta =100℃ | Ir | 10.0<br>500.0 | | | | | | μA |
| Maximum Reverse Recovery Time (Note1 ) | Trr | 20 | | | | 25 | 35 | nS |
| Typical Junction Capacitance (Note 2) | Cj | 45.0 | | | | | | pF |
| Typical Thermal Resistance (Note 3) | Rth(jl) | 12.0 | | | | | | ℃/W |
| Storage and Operating Junction Temperature | Tstg, Tj | -55 to +150 | | | | | | ℃ |

Note：

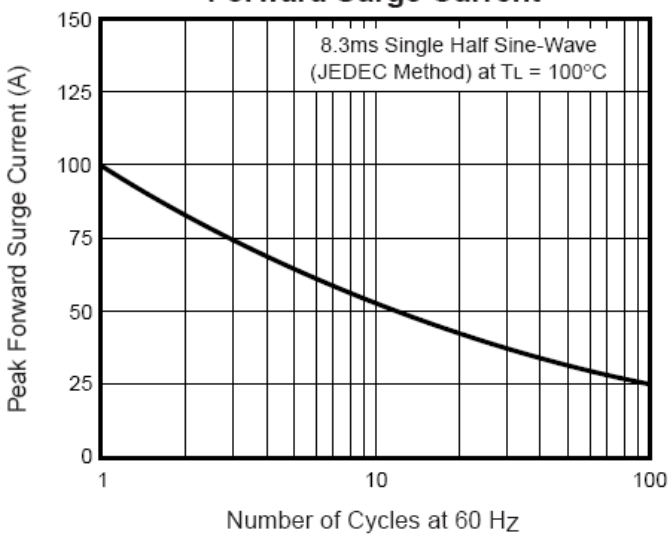
1. Reverse Recovery Condition If =0.5A, Ir =1.0A, Irr =0.25A
2. Measured at 1.0 MHz and applied reverse voltage of 4.0Vdc
3. Thermal Resistance from Junction to terminal mounted on 5×5mm copper pad area

## RATINGS AND CHARACTERISTIC CURVES ES3A THRU ES3J

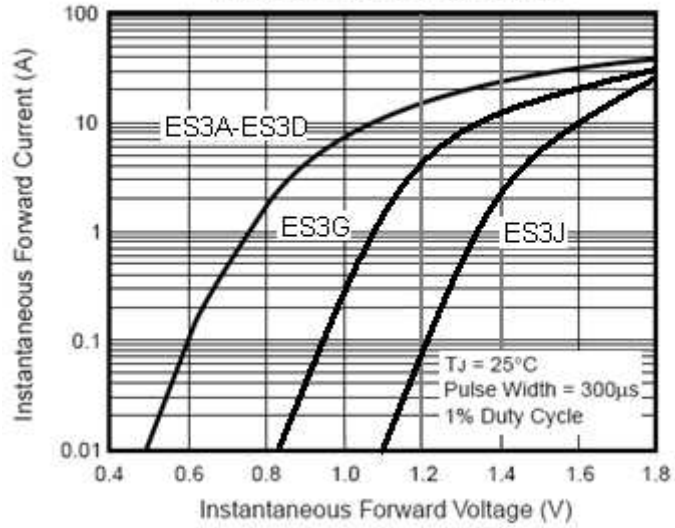
### Fig. 1 – Maximum Forward Current Derating Curve



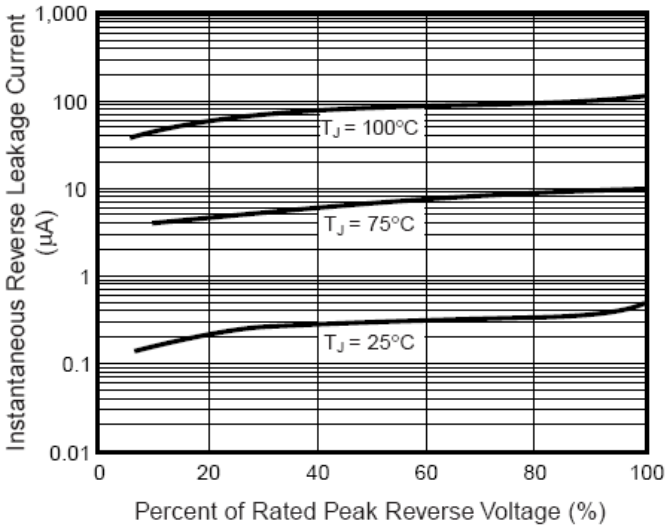

### Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current




### Fig. 3 – Typical Instantaneous Forward Characteristics




### Fig. 4 – Typical Reverse Leakage Characteristics




### Fig. 5 – Typical Junction Capacitance