# SAMYANG ELECTRONICS

## *ES3AA --- ES3JA*

## SUPER FAST RECTIFIERS

**VOLTAGE RANGE: 50 --- 600 V**
**CURRENT: 3.0A**

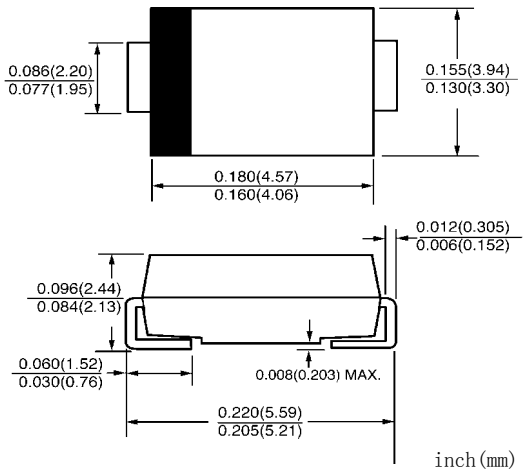
### FEATURES

- ◇Metal-semiconductor junction with guard ring
- ◇Epitaxial construction
- ◇Low forward voltage drop,low switching losses
- ◇High surge capability
- ◇For use in low voltage,high frequency inverters free wheeling,and polarity protection applications
- ◇The plastic material carries U/L recognition 94V-0

### MECHANICAL DATA

- ◇ Case:JEDEC DO-214AC,molded plastic
- ◇ Terminals: Axial lead ,solderable per MIL- STD-202,Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.003 ounces,0.093 grams
- ◇ Mounting position: Any

### DO-214AC(SMA)




### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

Single phase,half wave,60 Hz,resistive or inductive load. For capacitive load,derate by 20%.

| CHARACTERISTICS | SYMBOL | ES3AA | ES3BA | ES3DA | ES3GA | ES3JA | UNIT |
|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | V |
| Maximum Average Forward Rectified Current @$T_A$=55 ! | $I_{(AV)}$ | 3.0 | | | | | A |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load(JEDEC Method) | $I_{FSM}$ | 100 | | | | | A |
| Peak Forward Voltage at 3.0A DC | $V_F$ | 0.95 | | | 1.3 | 1.70 | V |
| Maximum DC Reverse Current @$T_J$=25! at Rated DC Blocking Voltage @$T_J$=100! | $I_R$ | 5.0<br>100 | | | | | μA |
| Maximum Reverse Recovery Time(Note 1) | $T_{RR}$ | 35 | | | | | nS |
| Typical Junction Capacitance (Note2) | $C_J$ | 70 | | | 45 | | pF |
| Typical Thermal Resistance (Note3) | $R_{\theta JA}$ | 20 | | | | | ! /W |
| Operating Temperature Range | $T_J$ | -55 to +150 | | | | | ! |
| Storage Temperature Range | $T_{STG}$ | -55 to +150 | | | | | ! |

NOTE: 1. Pulse test:300us pulse width,1% duty cycle.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3.Thermal resistance junction to ambient

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FIG. 1 – FORWARD CURRENT DERATING CURVE

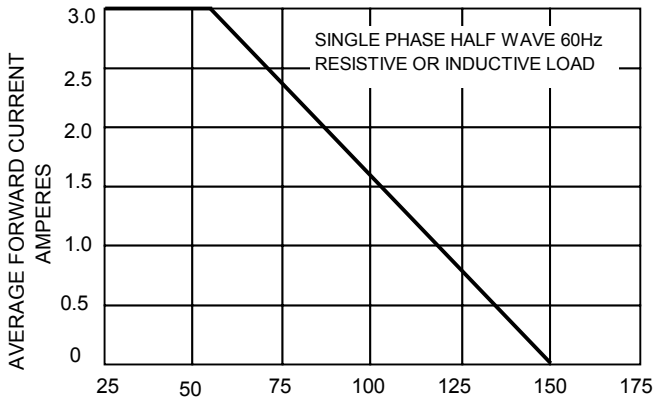



FIG. 2 – MAXIMUM NON-REPETITIVE SURGE CURRENT

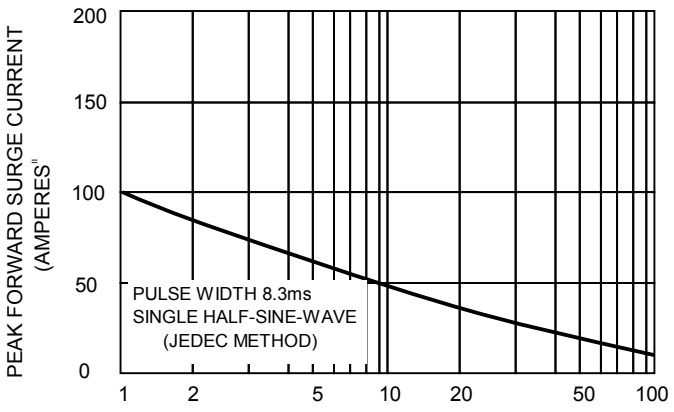



FIG.3 – TYPICAL JUNCTION CAPACITANCE

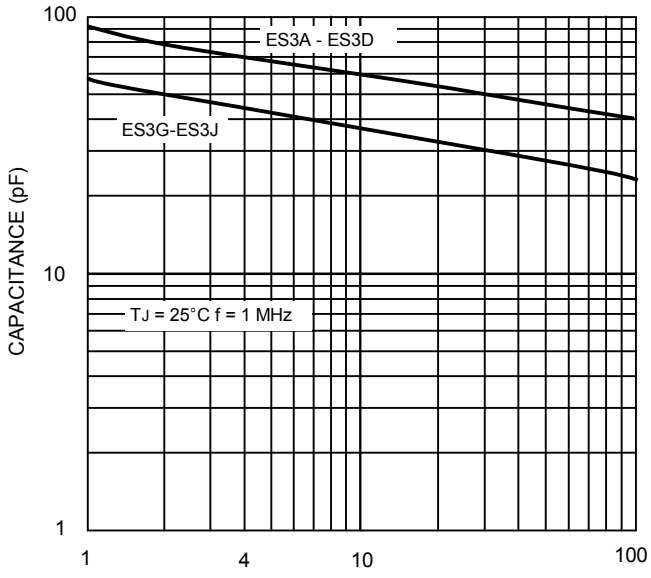



FIG.4-TYPICAL FORWARD CHARACTERISTICS

