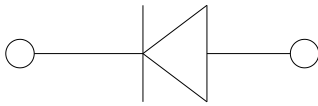
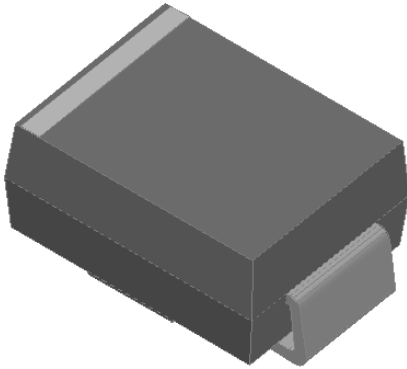


## Surface Mount Super Fast Recovery Rectifier



### Features

- Ultrafast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260°C max. 10 s, per JESD 22-B106

### Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

### Mechanical Data

- Package: DO-214AA (SMB)
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Color band denotes the cathode end

### ■ Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER   | SYMBOL           | UNIT             | ES5AB      | ES5BB | ES5CB | ES5DB | ES5FB | ES5GB | ES5HB | ES5JB |
|---|------------------|------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| Device marking code   |                  |                  | ES5AB      | ES5BB | ES5CB | ES5DB | ES5FB | ES5GB | ES5HB | ES5JB |
| Maximum Repetitive Peak Reverse Voltage   | V <sub>RRM</sub> | V                | 50         | 100   | 150   | 200   | 300   | 400   | 500   | 600   |
| Maximum RMS Voltage   | V <sub>RMS</sub> | V                | 35         | 70    | 105   | 140   | 210   | 280   | 350   | 420   |
| Maximum DC blocking Voltage   | V <sub>DC</sub>  | V                | 50         | 100   | 150   | 200   | 300   | 400   | 500   | 600   |
| Average Rectified Output Current<br>@60Hz sine wave, Resistance load, TL (FIG.1)              | I <sub>o</sub>   | A                | 5.0        |       |       |       |       |       |       |       |
| Forward Surge Current (Non-repetitive)<br>@60Hz Half-sine wave, 1 cycle, T <sub>j</sub> =25°C | I <sub>FSM</sub> | A                | 150        |       |       |       |       |       |       |       |
| Current squared time<br>@1ms≤t≤8.3ms T <sub>j</sub> =25°C                                     | I <sup>2</sup> t | A <sup>2</sup> s | 94         |       |       |       |       |       |       |       |
| Storage Temperature   | T <sub>stg</sub> | °C               | -55 ~ +150 |       |       |       |       |       |       |       |
| Junction Temperature  | T <sub>j</sub>   | °C               | -55 ~ +150 |       |       |       |       |       |       |       |



# ES5AB THRU ES5JB

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER   | SYMBOL          | UNIT | TEST CONDITIONS   | ES5AB | ES5BB | ES5CB | ES5DB | ES5FB | ES5GB | ES5HB | ES5JB |
|---|-----------------|------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum instantaneous forward voltage                   | V <sub>F</sub>  | V    | IFM=5.0A  | 0.95  |       |       | 1.3   |       |       | 1.7   |       |
| Maximum reverse recovery time                           | t <sub>rr</sub> | ns   | IF=0.5A, IR=1.0A, I <sub>rr</sub> =0.25A                  | 35    |       |       |       |       |       |       |       |
| Maximum DC reverse current at rated DC blocking voltage | I <sub>R</sub>  | μA   | T <sub>j</sub> =25°C                                      | 5     |       |       |       |       |       |       |       |
|   |                 |      | T <sub>j</sub> =125°C                                     | 100   |       |       |       |       |       |       |       |
| Typical junction capacitance                            | C <sub>j</sub>  | pF   | Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C | 80    |       |       | 44    |       |       | 30    |       |

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                  | SYMBOL                           | UNIT | ES5AB | ES5BB | ES5CB | ES5DB | ES5FB | ES5GB | ES5HB | ES5JB |
|----------------------------|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Typical Thermal Resistance | R <sub>θJ-A</sub> <sup>(1)</sup> | °C/W | 60    |       |       |       |       |       |       |       |
|                            | R <sub>θJ-L</sub> <sup>(1)</sup> |      | 18    |       |       |       |       |       |       |       |
|                            | R <sub>θJ-C</sub> <sup>(1)</sup> |      | 13    |       |       |       |       |       |       |       |

Note:  
 (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

## ■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)   | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| ES5AB ~ ES5JB | F1           | Approximate 0.10 | 3000                 | /                       | 48000                      | 13" reel      |
| ES5AB ~ ES5JB | F2           | Approximate 0.10 | 750                  | 6000                    | 24000                      | 7" reel       |
| ES5AB ~ ES5JB | F3           | Approximate 0.10 | 500                  | 4000                    | 16000                      | 7" reel       |

## ■ Characteristics(Typical)

FIG.1: I<sub>o</sub>-T<sub>L</sub> Curve

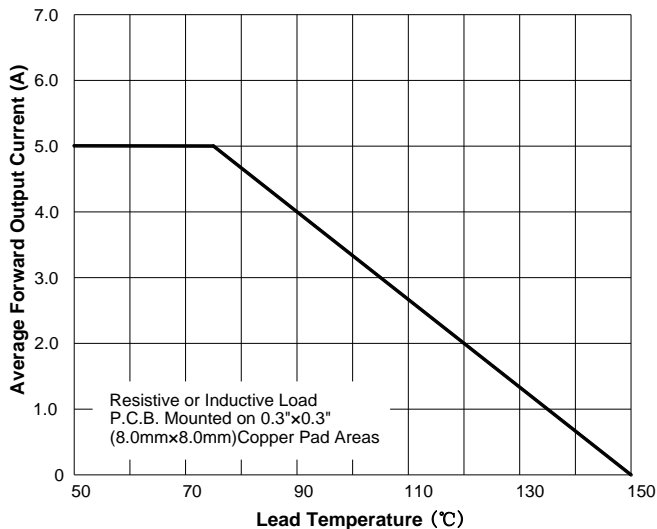
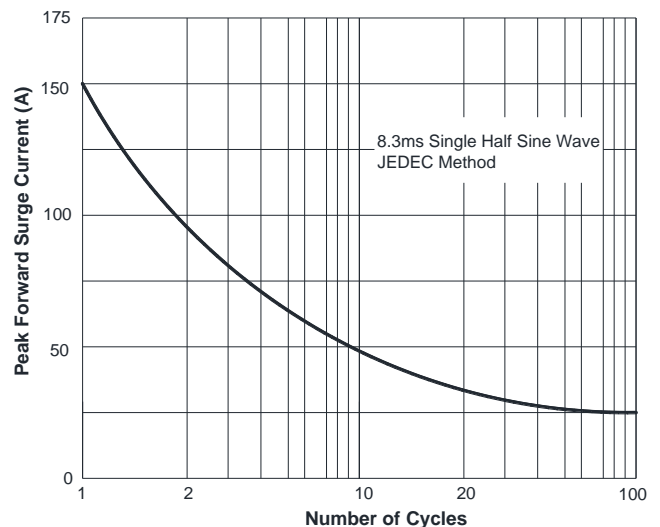


FIG.2: Forward Surge Current Capability





# ES5AB THRU ES5JB

FIG.3: Typical Forward Voltage

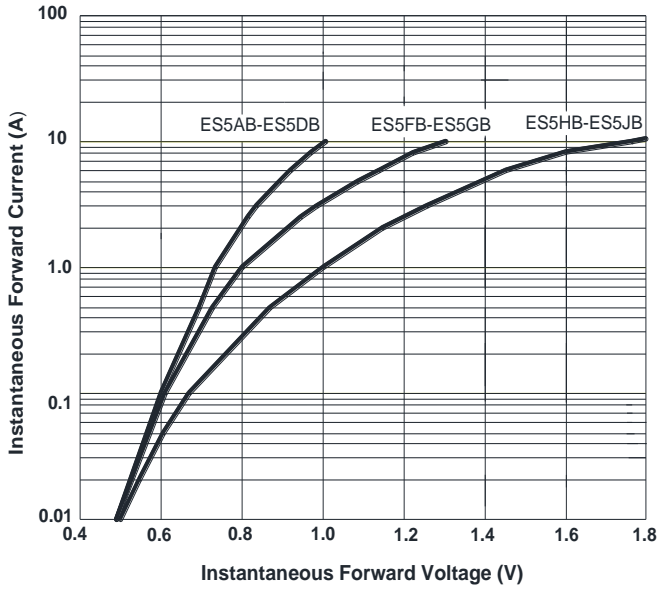


FIG.4: Typical Reverse Characteristics

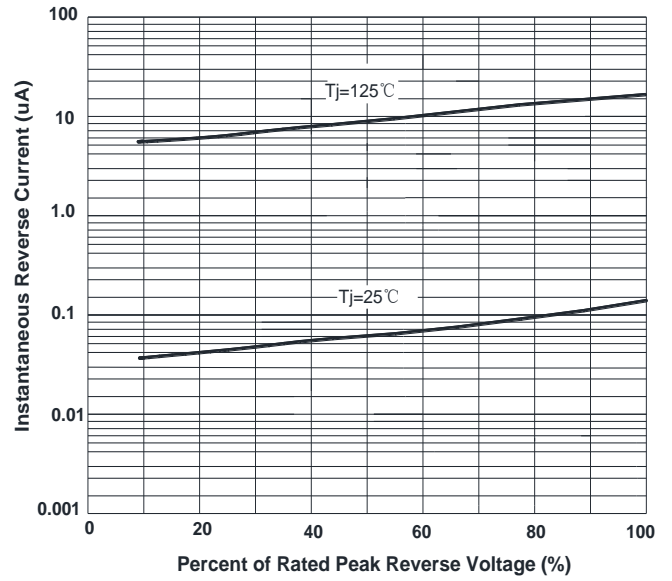
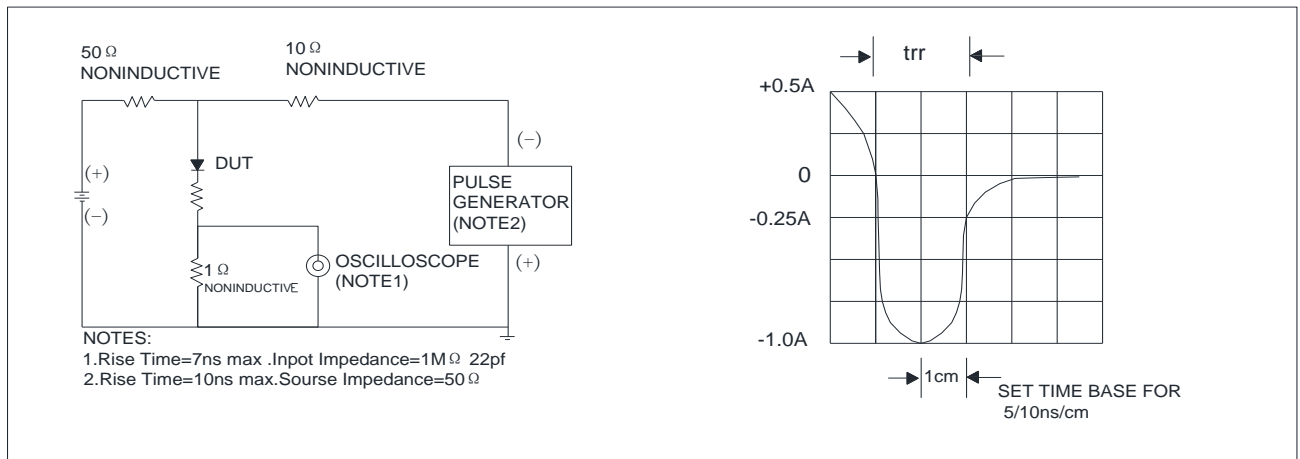


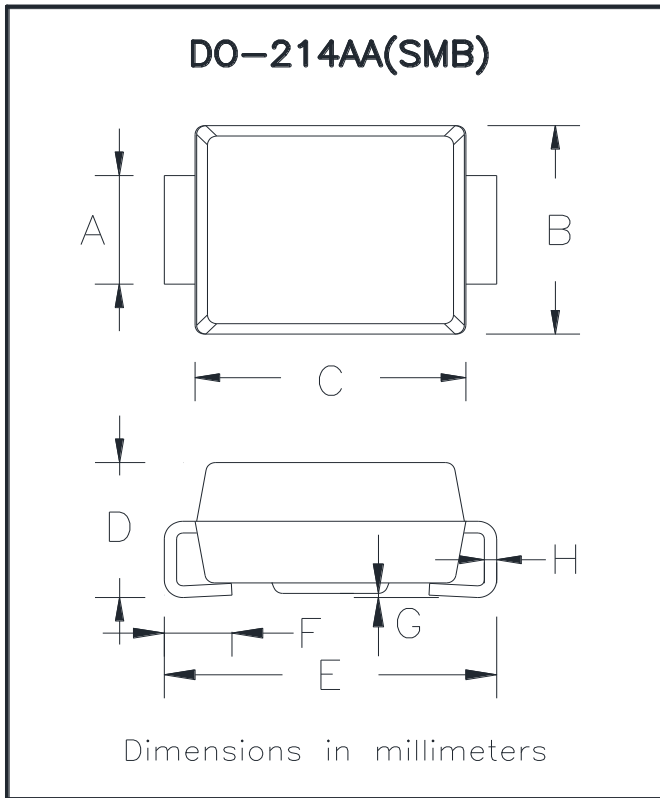
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





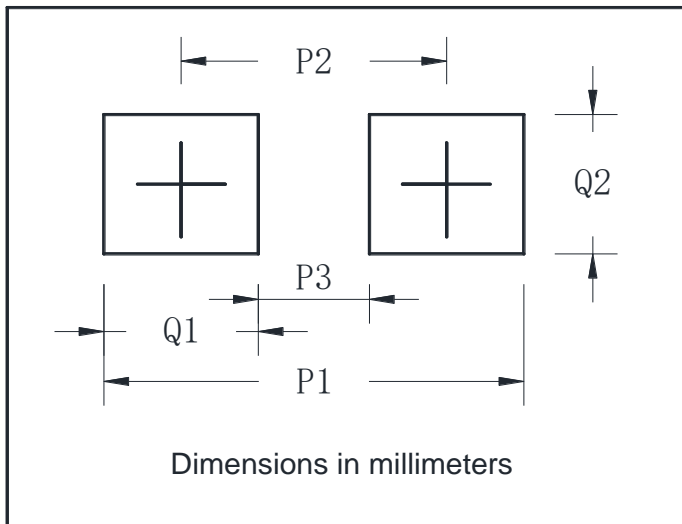
# ES5AB THRU ES5JB

## ■ Outline Dimensions



| DO-214AA(SMB) |      |      |
|---------------|------|------|
| Dim           | Min  | Max  |
| A             | 1.85 | 2.15 |
| B             | 3.30 | 3.94 |
| C             | 4.05 | 4.75 |
| D             | 1.99 | 2.61 |
| E             | 5.21 | 5.59 |
| F             | 0.90 | 1.41 |
| G             | 0.05 | 0.20 |
| H             | 0.15 | 0.31 |

## ■ Suggested pad layout



| DO-214AA(SMB) |             |
|---------------|-------------|
| Dim           | Millimeters |
| P1            | 6.8         |
| P2            | 4.3         |
| P3            | 1.8         |
| Q1            | 2.5         |
| Q2            | 2.3         |



## ES5AB THRU ES5JB

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