

# ES5AC THRU ES5JC



## Super Fast Recovery Rectifiers

Reverse Voltage: 50 to 600 Volts

Forward Current: 5.0 Ampere

RoHS Device

Halogen Free



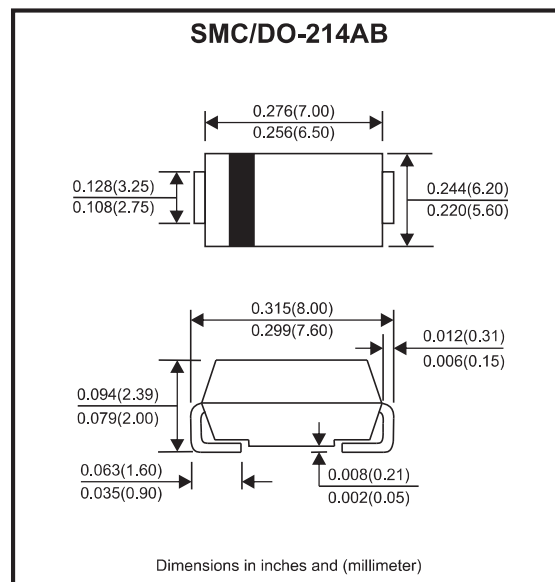
### Features

- For surface mounted applications.
- Low profile package.
- Glass passivated chip junction.
- Super fast reverse recovery time.

### Mechanical data

- Case: SMC
- Terminals: Solderable per MIL-STD-750, method 2026.

### Circuit Diagram



### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

| Parameter                                                                                                  | Symbols                              | ES5AC      | ES5BC | ES5CC | ES5DC | ES5EC | ES5GC | ES5JC | Units |
|------------------------------------------------------------------------------------------------------------|--------------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| Maximum repetitive peak reverse voltage                                                                    | V <sub>RRM</sub>                     | 50         | 100   | 150   | 200   | 300   | 400   | 600   | V     |
| Maximum RMS voltage                                                                                        | V <sub>RMS</sub>                     | 35         | 70    | 105   | 140   | 210   | 280   | 420   | V     |
| Maximum DC blocking voltage                                                                                | V <sub>DC</sub>                      | 50         | 100   | 150   | 200   | 300   | 400   | 600   | V     |
| Maximum average forward rectified current at T <sub>c</sub> = 100°C                                        | I <sub>F(AV)</sub>                   | 5          |       |       |       |       |       |       | A     |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load                         | I <sub>FSM</sub>                     | 150        |       |       |       |       |       |       | A     |
| Max. forward voltage at 5A                                                                                 | V <sub>F</sub>                       | 1.0        |       |       |       | 1.25  |       | 1.68  | V     |
| Maximum DC reverse current at rated DC blocking voltage<br>T <sub>a</sub> = 25°C<br>T <sub>a</sub> = 125°C | I <sub>R</sub>                       | 5<br>100   |       |       |       |       |       |       | μA    |
| Typical junction capacitance at V <sub>R</sub> = 4V, f = 1MHz                                              | C <sub>j</sub>                       | 50         |       |       |       |       |       |       | pF    |
| Maximum reverse recovery time (Note 1)                                                                     | t <sub>rr</sub>                      | 35         |       |       |       |       |       |       | ns    |
| Typical thermal resistance (Note 2)                                                                        | R <sub>θJA</sub><br>R <sub>θJC</sub> | 35<br>13   |       |       |       |       |       |       | °C/W  |
| Operating and storage temperature range                                                                    | T <sub>j</sub> , T <sub>stg</sub>    | -55 ~ +150 |       |       |       |       |       |       | °C    |

Notes: 1. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1\text{A}$ ,  $I_{rr} = 0.25\text{A}$ .

2. P.C.B. mounted with 2.0" x 2.0" (5 x 5 cm) copper pad areas.

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Rev:1.0

## Rating and Characteristic Curves

Fig.1 - Max. Average Forward Current Rating

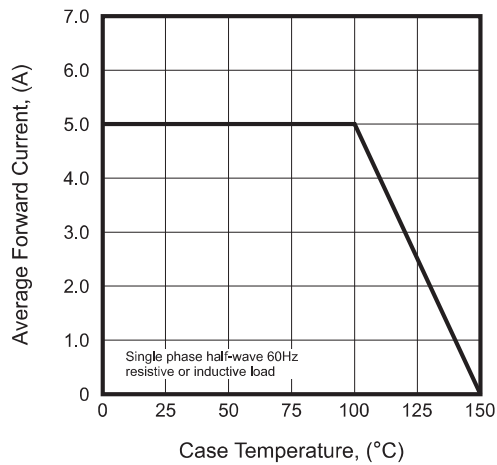


Fig.2 - Typical Reverse Characteristics

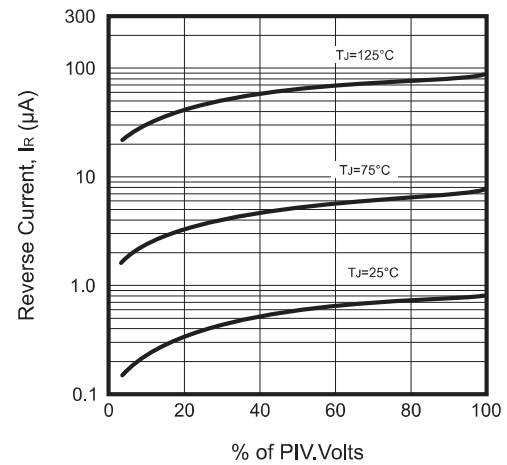


Fig.3 - Typical Forward Characteristic

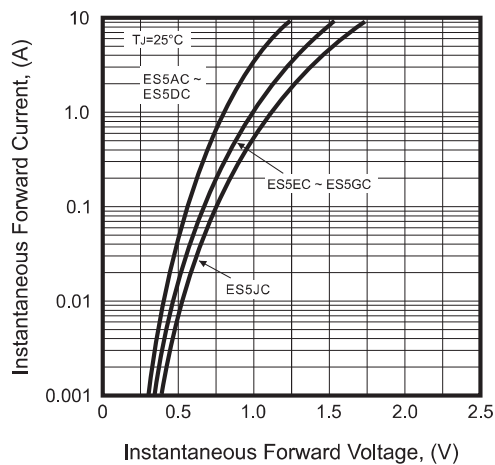


Fig.4 - Typical Junction Capacitance

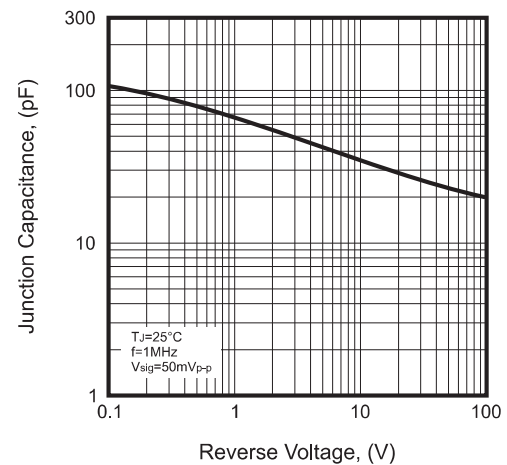
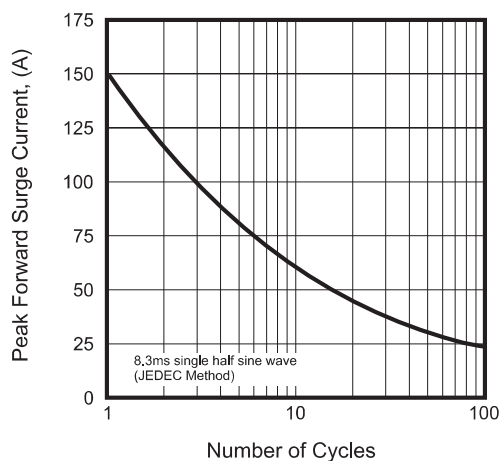
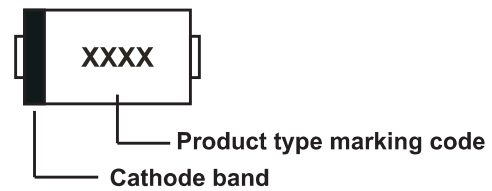


Fig.5 - Maximum Non-Repetitive Peak Forward Surge Current



## Marking Code

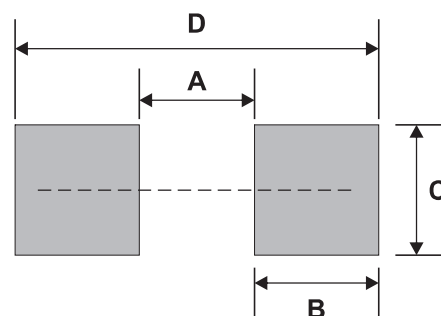
| Part Number | Marking Code |
|-------------|--------------|
| ES5AC       | ES5A         |
| ES5BC       | ES5B         |
| ES5CC       | ES5C         |
| ES5DC       | ES5D         |
| ES5EC       | ES5E         |
| ES5GC       | ES5G         |
| ES5JC       | ES5J         |



xxxx = Product type marking code

## Suggested PAD Layout

| SIZE | DO-214AB (SMC) |        |
|------|----------------|--------|
|      | (mm)           | (inch) |
| A    | 3.80           | 0.150  |
| B    | 4.10           | 0.161  |
| C    | 4.30           | 0.169  |
| D    | 12.00          | 0.472  |

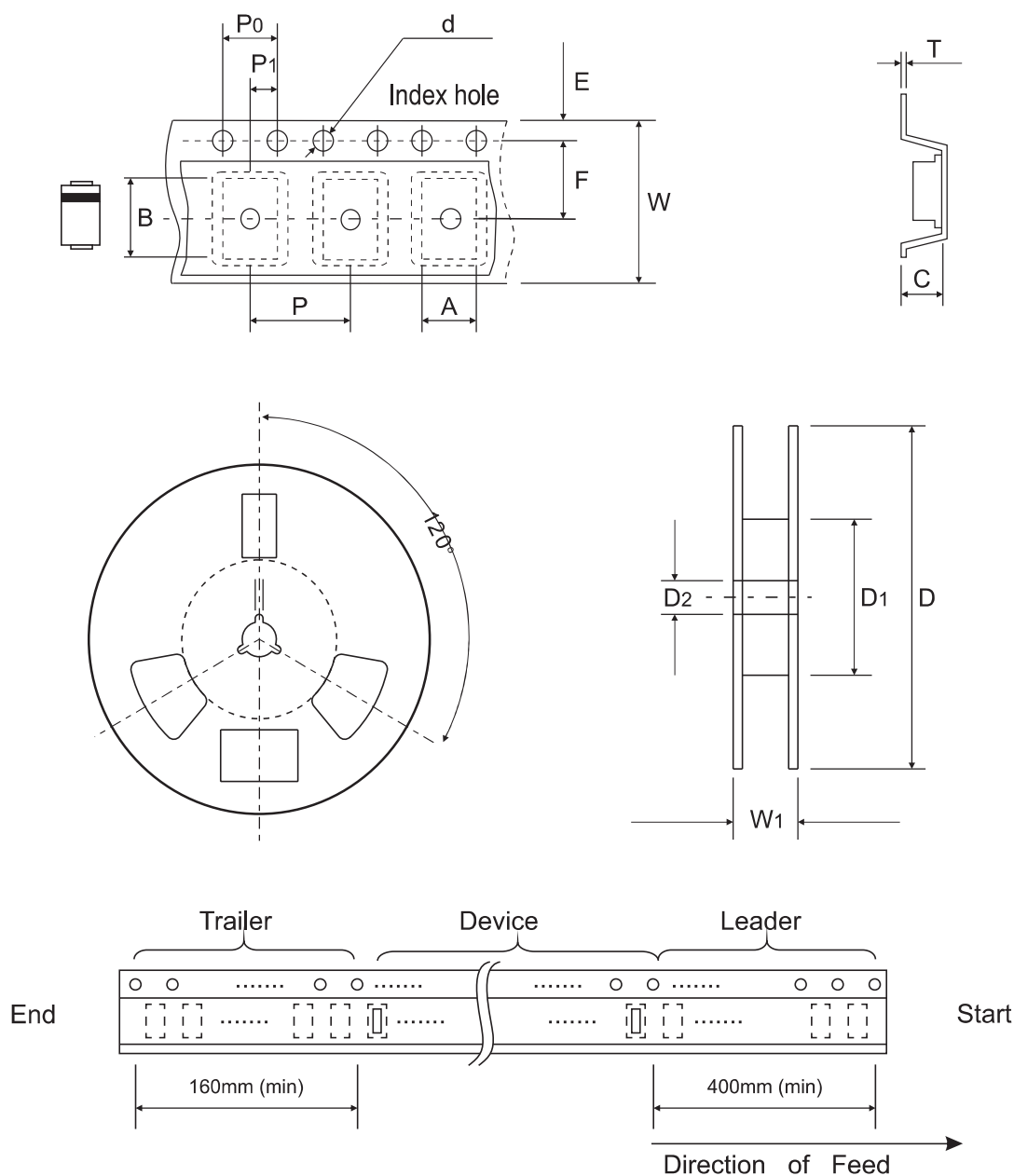


Note: 1. The pad layout is for reference purpose only.

## Standard Packaging

| Case Type         | REEL PACK       |                     |
|-------------------|-----------------|---------------------|
|                   | REEL<br>( pcs ) | Reel Size<br>(inch) |
| DO-214AB<br>(SMC) | 3,000           | 13                  |

## Reel Taping Specification



| DO-214AB<br>(SMC) | SYMBOL | A             | B             | C             | d             | D              | D1            | D2            |
|-------------------|--------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|
|                   | (mm)   | 6.22 ± 0.10   | 8.31 ± 0.10   | 2.49 ± 0.10   | 1.55 ± 0.05   | 330 ± 2.00     | 100.00 ± 1.00 | 13.00 ± 0.20  |
|                   | (inch) | 0.245 ± 0.004 | 0.327 ± 0.004 | 0.098 ± 0.004 | 0.061 ± 0.002 | 12.992 ± 0.079 | 3.937 ± 0.039 | 0.512 ± 0.008 |

| DO-214AB<br>(SMC) | SYMBOL | E             | F             | P             | P0            | P1            | T             | W             | W1                       |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|
|                   | (mm)   | 1.75 ± 0.10   | 7.50 ± 0.10   | 8.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.28 ± 0.02   | 16.00 ± 0.30  | 21.00 + 2.00<br>- 1.00   |
|                   | (inch) | 0.069 ± 0.004 | 0.295 ± 0.004 | 0.315 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.011 ± 0.001 | 0.630 ± 0.012 | 0.827 + 0.079<br>- 0.039 |

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