

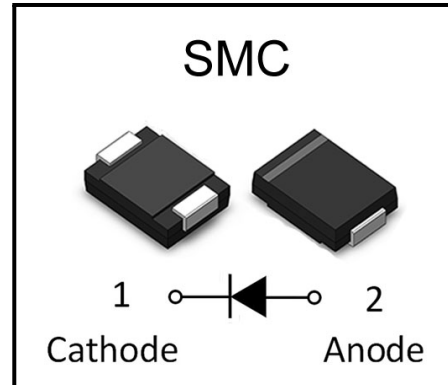
ES5A-ES5J

Fast Recovery
Rectifier Diode

Features

- Super fast switching time for high efficiency
- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Epitaxial construction

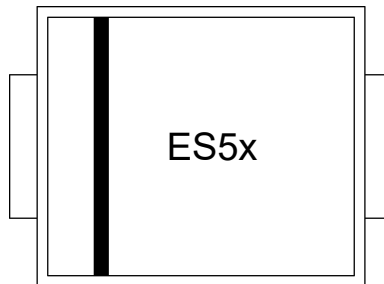
Package



Description

- Case: molded plastic
- Polarity: Color band denotes cathode
- Package: SMC Plastic Package

Making Code



Ordering information

| Part Number | ES5A | ES5B | ES5C | ES5D | ES5F | ES5G | ES5H | ES5J |
|-------------|------|------|------|------|------|------|------|------|
| Marking | ES5A | ES5B | ES5C | ES5D | ES5F | ES5G | ES5H | ES5J |
| Base qty | 3K | 3K | 3K | 3K | 3K | 3K | 3K | 3K |



ES5A-ES5J

Fast Recovery
Rectifier Diode

Maximum Ratings and Electrical Characteristics@T_A=25°C unless otherwise noted

| Symbol | Parameters | ES5A | ES5B | ES5C | ES5D | ES5F | ES5G | ES5H | ES5J | Units |
|---------------------------------|--|-------------|------|------|------|------|------|------|------|------------------|
| V _{RRM} | Max. Recurrent Peak Reverse Voltage | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| V _{RMS} | Maximum RMS Voltage | 35 | 70 | 105 | 140 | 210 | 280 | 350 | 420 | V |
| V _{DC} | Maximum DC Blocking Voltage | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| I _{AV} | Maximum Average Forward Rectified Current | 5.0 | | | | | | | | A |
| I _{FSM} | Forward Surge Current @60Hz Half-sine wave,1 cycle, T _j =25°C | 150 | | | | | | | | A |
| | Forward Surge Current@1ms, quare wave, 1 cycle, T _j =25°C | 300 | | | | | | | | |
| V _F | Maximum Forward Voltage@I _{FM} =5.0A | 0.95 | | | | 1.3 | | 1.7 | | V |
| I _R | Max. DC reverse current@T _j =25°C | 5 | | | | | | | | uA |
| | Max. DC reverse current@T _j =125°C | 100 | | | | | | | | |
| I ² t | Current squared time @1ms≤t≤8.3ms T _j =25°C | 94 | | | | | | | | A ² s |
| t _{rr} | Maximum reverse recovery time @I _F =0.5A,I _R =1.0A,I _{rr} =0.25A | 35 | | | | | | | | ns |
| C _j | Typ. junction capacitance Measured at 1Mhz and Applied Reverse Voltage of 4.0V.D.C | 75 | | | | 37 | | 35 | | pF |
| R _{θJA} ⁽¹⁾ | Typical Thermal Resistance | 50 | | | | | | | | °C/W |
| R _{θJL} ⁽¹⁾ | | 15 | | | | | | | | |
| R _{θJC} ⁽¹⁾ | | 12 | | | | | | | | |
| T _J | Operating Junction Temperature Range | -55 to +150 | | | | | | | | °C |
| T _{STG} | Storage Temperature Range | -55 to +150 | | | | | | | | °C |

Note1: (1)Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas



ES5A-ES5J

Fast Recovery
Rectifier Diode

Typical Performance Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1: I_O - T_L Curve

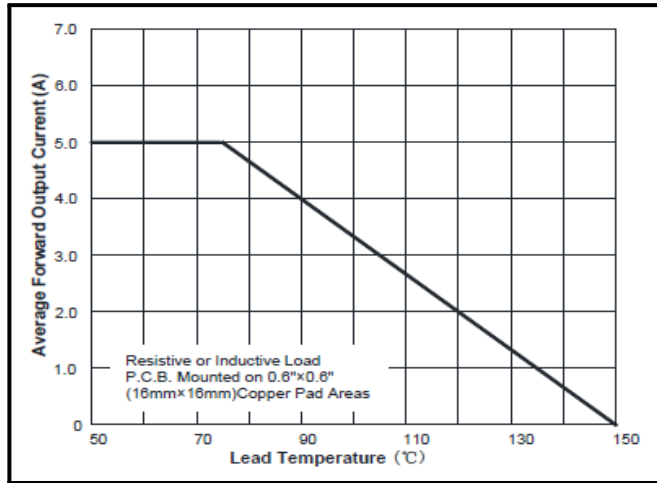


Figure 2: Surge Forward Current Capability

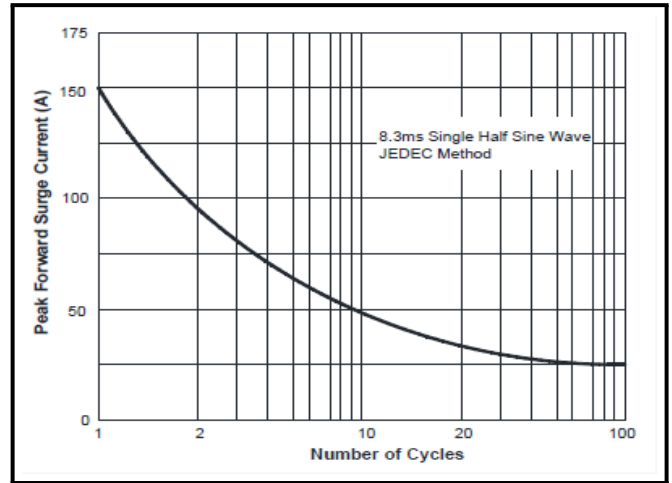


Figure 3: Typical Forward Voltage

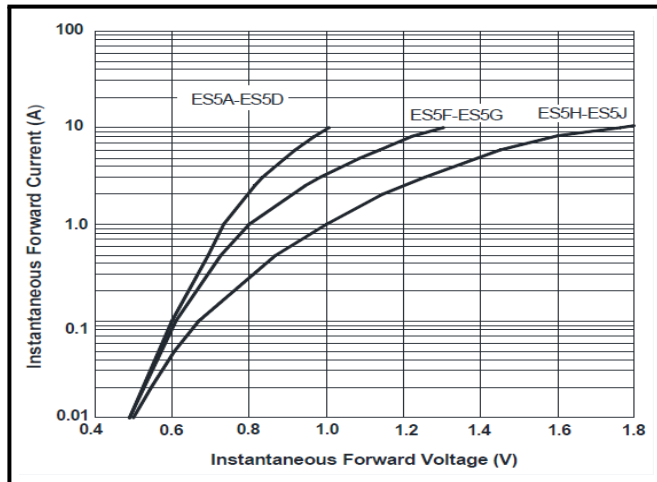
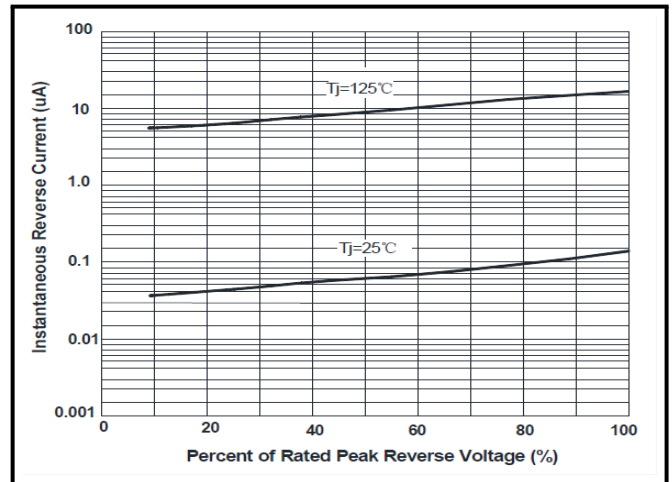


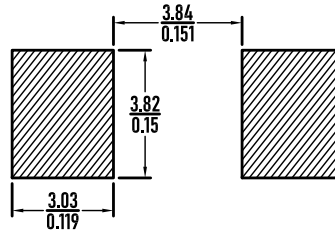
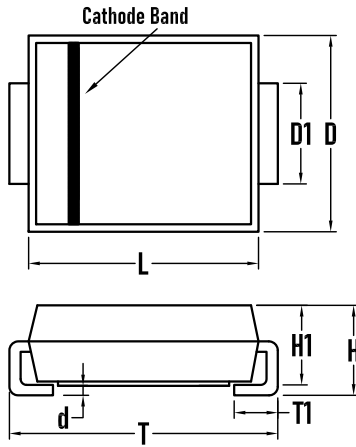
Figure 4: Typical Reverse Characteristics



ES5A-ES5J

Fast Recovery
Rectifier Diode

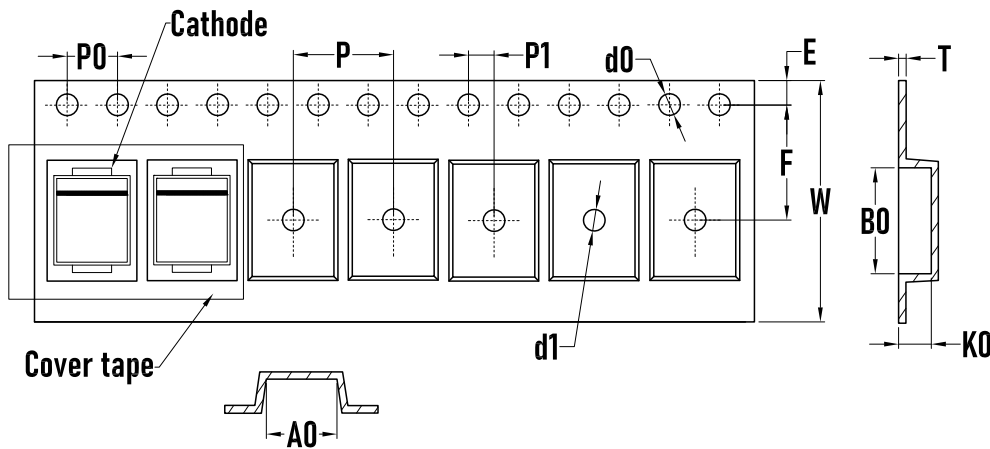
Package Mechanical Data - SMC



Note:
dimensions: $\frac{\text{mm}}{\text{inch}}$

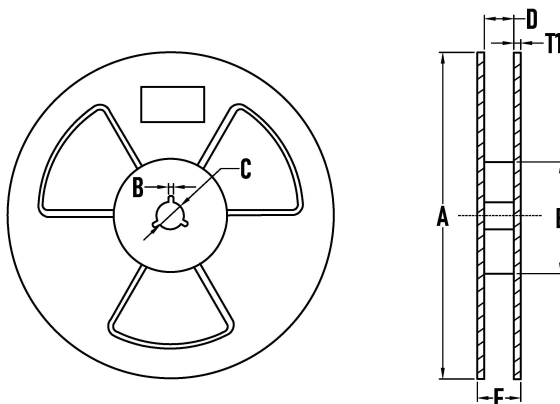
| SYMBOL | MILLIMETER | |
|--------|------------|------|
| | MIN | MAX |
| D | 5.75 | 6.15 |
| D1 | 2.70 | 3.30 |
| T | 7.65 | 8.25 |
| T1 | 0.90 | 1.50 |
| d | — | 0.3 |
| H1 | 2.07 | 2.47 |
| H | 2.20 | 2.60 |
| L | 6.70 | 7.10 |

Packaging Tape - SMC



| SYMBOL | MILLIMETER |
|--------|------------|
| A0 | 6.00±0.1 |
| B0 | 8.25±0.02 |
| d0 | 1.50±0.1 |
| d1 | 1.50±0.1 |
| E | 1.75±0.1 |
| F | 7.50±0.1 |
| K0 | 2.70±0.1 |
| P | 8.00±0.1 |
| P0 | 4.00±0.1 |
| P1 | 2.00±0.05 |
| W | 16.00±0.1 |
| T | 0.22±0.02 |

Packaging Reel



| SYMBOL | MILLIMETER |
|----------|------------|
| A | 323±2 |
| B | 3.0±0.2 |
| C | 15.0±0.5 |
| D | 16±2 |
| E | 73±2 |
| T1 | 2.2±0.2 |
| Quantity | 3000PCS |

**BORN SEMICONDUCTOR, INC. ALL
RIGHT RESERVED**

Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

Revision: 2022-Jan-1-A

