

Surface Mount Schottky Rectifier

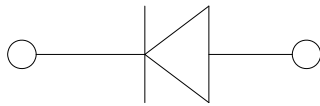


Features

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.



Mechanical Date

- **Package:** SOD-323HE
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:** Cathode line denotes the cathode end

■Maximum Ratings (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | FM12E | FM13E | FM14E | FM15E | FM16E | FM18E | FM110E | FM115E | FM120E |
|---|------------------|------|-----------|-------|-------|-------|-----------|-------|--------|--------|--------|
| Device marking code | | | 12 | 13 | 14 | 15 | 16 | 18 | 110 | 115 | 120 |
| Repetitive peak reverse voltage | VRRM | V | 20 | 30 | 40 | 50 | 60 | 80 | 100 | 150 | 200 |
| Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1) | I _O | A | 1.0 | | | | | | | | |
| Surge(non-repetitive)forward current @60Hz half-sine wave,1 cycle, T _j =25°C | I _{FSM} | A | 30 | | | | | | | | |
| Storage temperature | T _{stg} | °C | -55 ~+150 | | | | | | | | |
| Junction temperature | T _j | °C | -55 ~+125 | | | | -55 ~+150 | | | | |

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | FM12E | FM13E | FM14E | FM15E | FM16E | FM18E | FM110E | FM115E | FM120E |
|--|------------------|------|-----------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Maximum instantaneous forward voltage drop per diode | V _F | V | I _{FM} =1.0A | 0.50 | | | 0.70 | 0.85 | | 0.90 | | |
| Maximum DC reverse current at rated DC blocking voltage per diode @ VRM=VRRM | I _{RRM} | mA | T _a =25°C | 0.50 | | | | 0.10 | | | | |
| | | | T _a =100°C | 10 | | | | 5 | | | | |

Note1:Pulse test:300uS pulse width,1% duty cycle

Note2:Pulse test:pulse width 40mS



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■ Thermal Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | FM12E | FM13E | FM14E | FM15E | FM16E | FM18E | FM110E | FM115E | FM120E |
|--------------------|----------------|---------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Thermal Resistance | R θ J-A | $^\circ\text{C}/\text{W}$ | 270 | | | | | | | | |
| | R θ J-L | | 45 | | | | | | | | |

■ Characteristics (Typical)

FIG1:Io-TL Curve

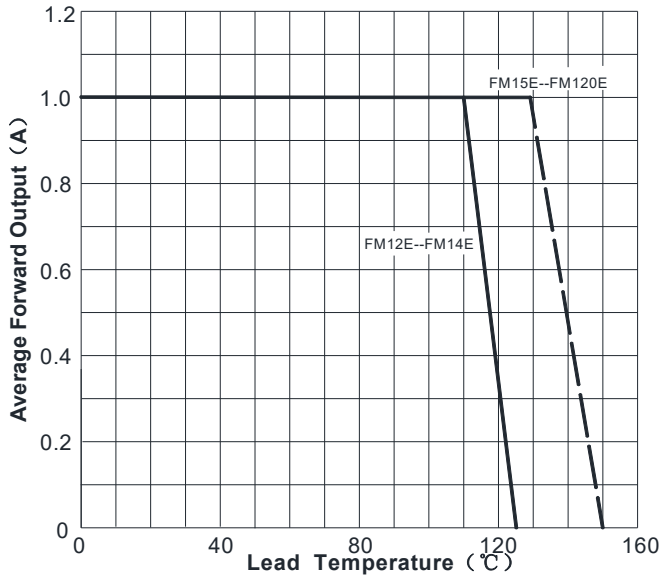


FIG2: Surge Forward Current Capability

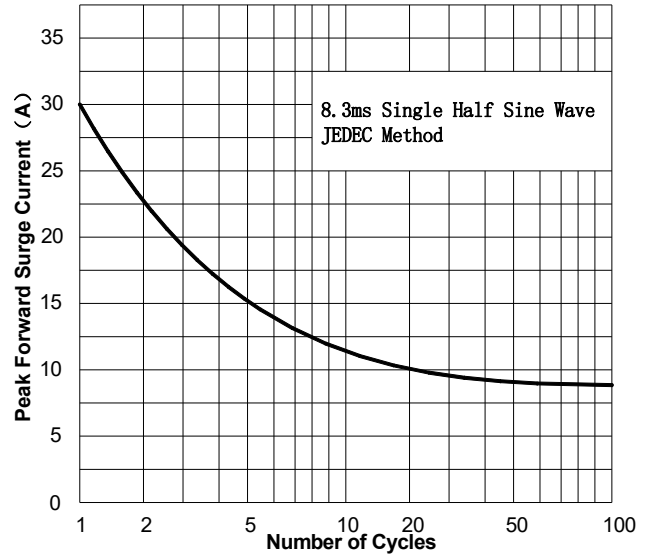


FIG3: Forward Voltage

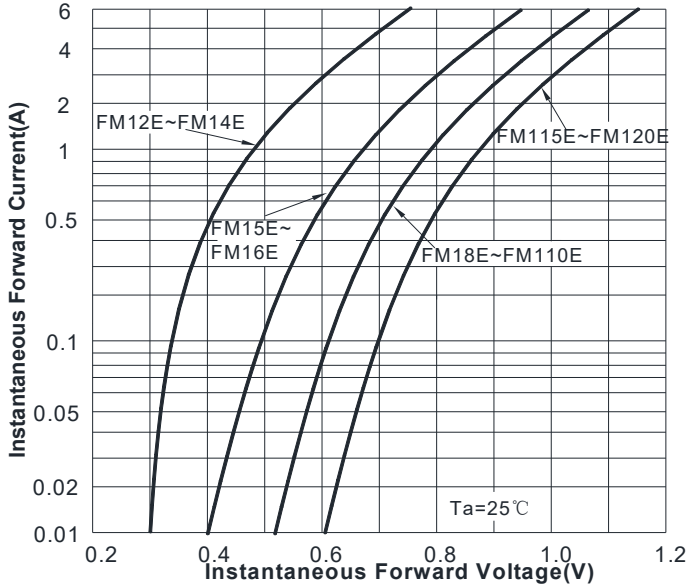
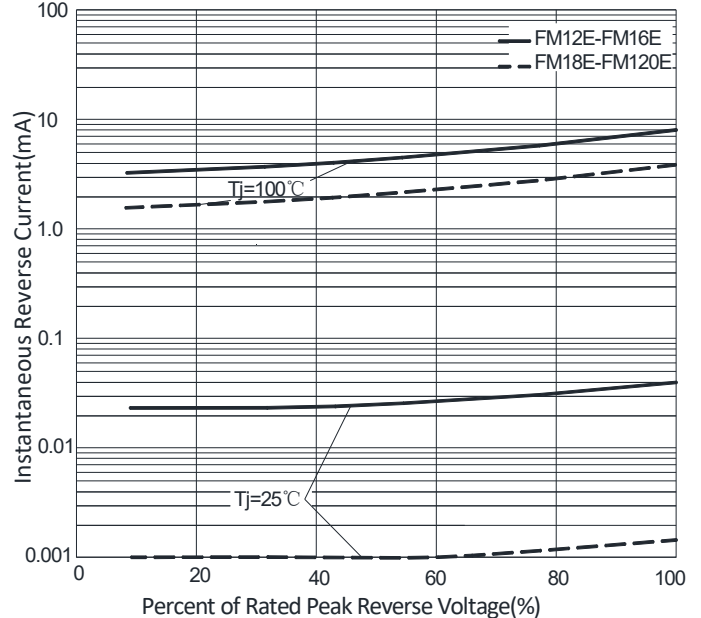


FIG4: Typical Reverse Characteristics



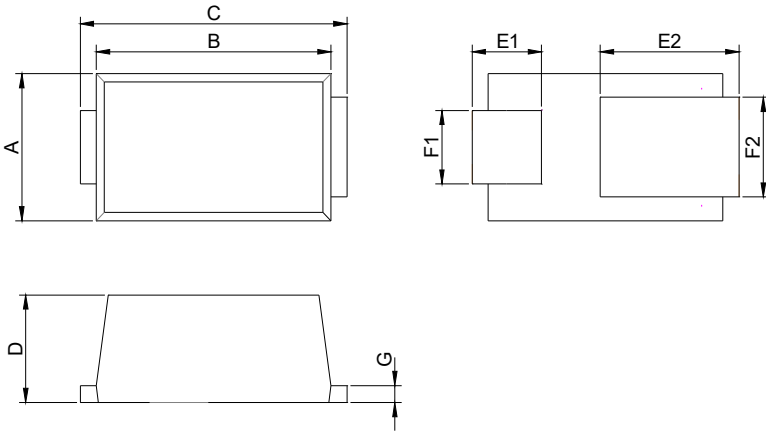


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Ordering Information (Example)

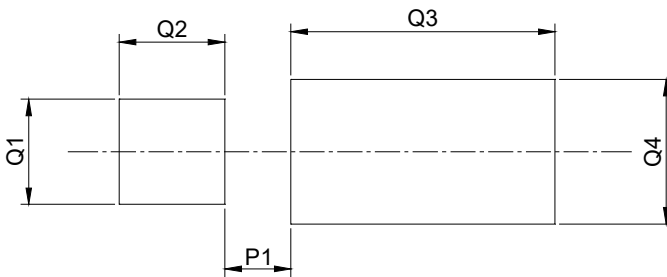
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|-------------------|--------------|-------------------|----------------------|----------------------------|---------------|
| FM12E THRU FM120E | F1 | Approximate 0.008 | 3000 | 120000 | 7" reel |

Outline Dimensions



| SOD-323HE | | |
|-----------|-------------|------|
| Dim | Millimeters | |
| | Min | Max |
| A | 1.2 | 1.4 |
| B | 2.1 | 2.3 |
| C | 2.3 | 2.7 |
| D | 0.9 | 1.0 |
| E1 | 0.55 | 0.75 |
| E2 | 1.1 | 1.5 |
| F1 | 0.55 | 0.75 |
| F2 | 0.78 | 0.98 |
| G | 0.12 | 0.27 |

Suggested pad layout



| SOD-323HE | |
|-----------|-------------|
| Dim | Millimeters |
| P1 | 0.5 |
| Q1 | 0.8 |
| Q2 | 0.8 |
| Q3 | 2 |
| Q4 | 1.1 |



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