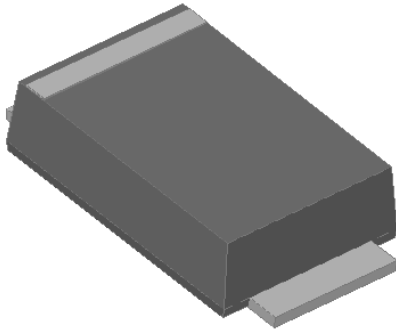


## Surface Mount Schottky Rectifier

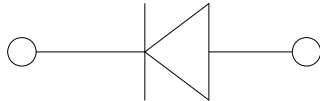


### Features

- Guard ring for overvoltage protection
- Low power losses
- Extremely fast switching
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

### Typical Applications

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



### Mechanical Data

- **Package:** SMAF  
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<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                                                  | SYMBOL           | UNIT | S16FQ    |
|--------------------------------------------------------------------------------------------|------------------|------|----------|
| Device marking code                                                                        |                  |      | S16F     |
| Repetitive peak reverse voltage                                                            | V <sub>RRM</sub> | V    | 60       |
| Maximum RMS voltage                                                                        | V <sub>RMS</sub> | V    | 42       |
| Maximum DC blocking voltage                                                                | V <sub>DC</sub>  | V    | 60       |
| Maximum average forward rectified current at T <sub>L</sub> (Fig.1)                        | I <sub>O</sub>   | A    | 1.0      |
| Surge(non-repetitive)forward current<br>@60Hz half-sine wave,1 cycle, T <sub>J</sub> =25°C | I <sub>FSM</sub> | A    | 40       |
| Voltage rate of change (rated V <sub>R</sub> )                                             | dV/dt            | V/μs | 10000    |
| Storage temperature                                                                        | T <sub>stg</sub> | °C   | -55~+150 |
| Junction temperature                                                                       | T <sub>J</sub>   | °C   | -55~+150 |

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

| PARAMETER                     | SYMBOL         | TEST CONDITIONS           |                       | TYP  | MAX  | UNIT |
|-------------------------------|----------------|---------------------------|-----------------------|------|------|------|
| Instantaneous forward voltage | V <sub>F</sub> | I <sub>F</sub> =1A        | T <sub>J</sub> =25°C  | 0.5  | 0.7  | V    |
|                               |                |                           | T <sub>J</sub> =125°C | 0.45 | 0.55 |      |
| Reverse current               | I <sub>R</sub> | Rated V <sub>R</sub>      | T <sub>J</sub> =25°C  | 8    | 50   | μA   |
|                               |                |                           | T <sub>J</sub> =125°C | -    | 10   | mA   |
| Typical junction capacitance  | C <sub>J</sub> | V <sub>R</sub> =4V,f=1MHz |                       | 75   | -    | pF   |



## S16FQ

### ■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER          | SYMBOL           | UNIT | S16FQ             |
|--------------------|------------------|------|-------------------|
| Thermal Resistance | $R_{\theta J-A}$ | °C/W | 65 <sup>(1)</sup> |
|                    | $R_{\theta J-L}$ |      | 20 <sup>(1)</sup> |

Note:

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 5 mm x 5 mm copper pad areas

### ■ Characteristics(Typical)

Fig.1:Forward Current Derating Curve

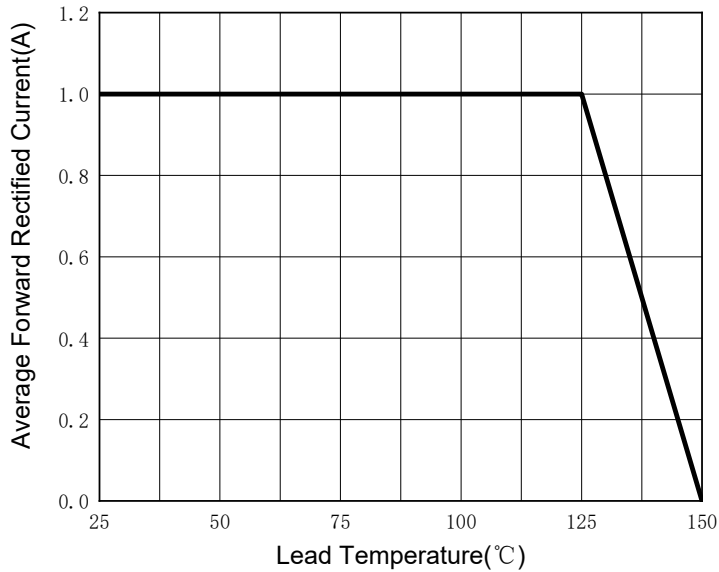


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

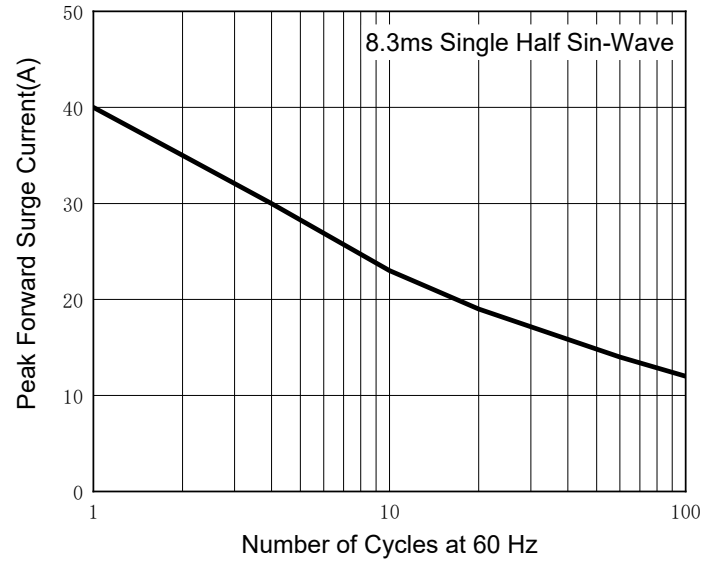


Fig.3:Typical Instantaneous Forward Characteristics

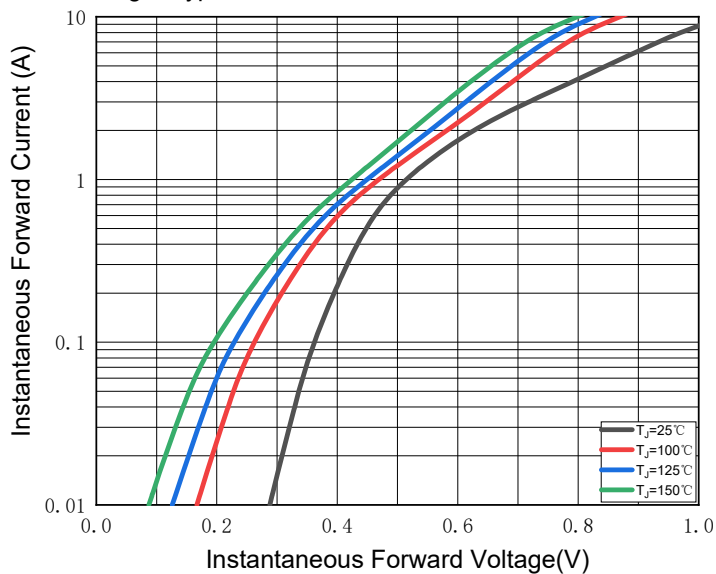
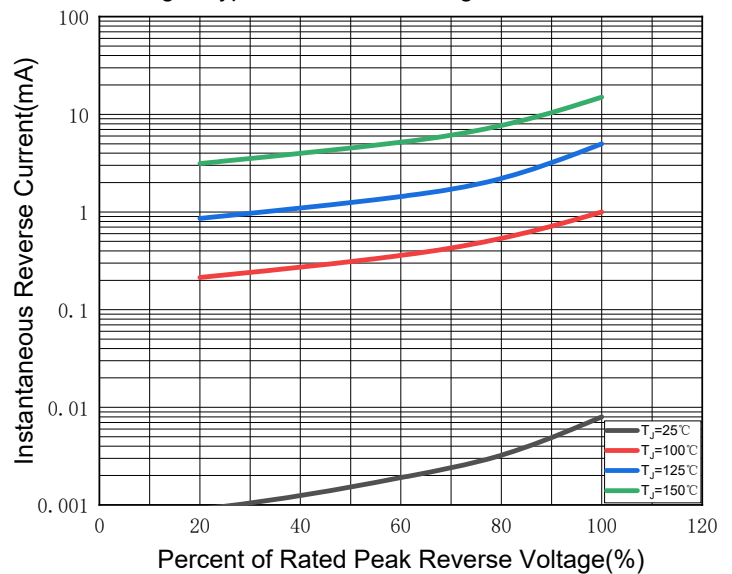


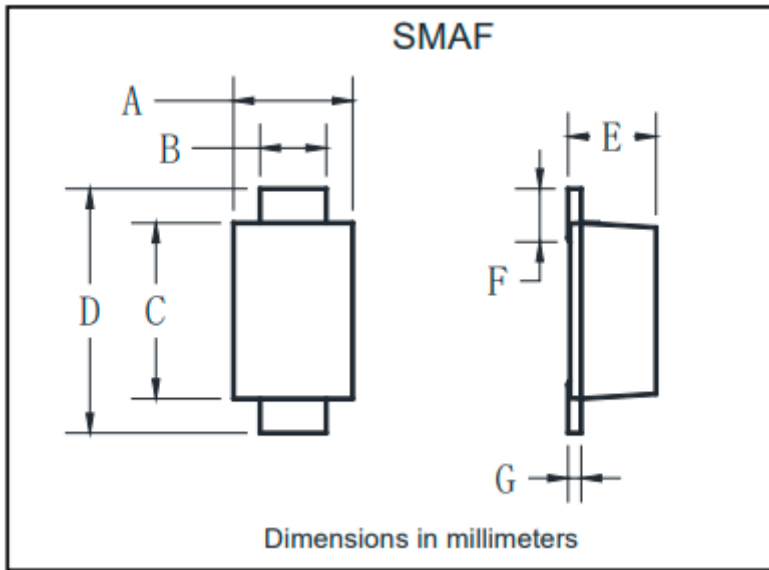
Fig.4:Typical Reverse Leakage Characteristics



### ■ Ordering Information (Example)

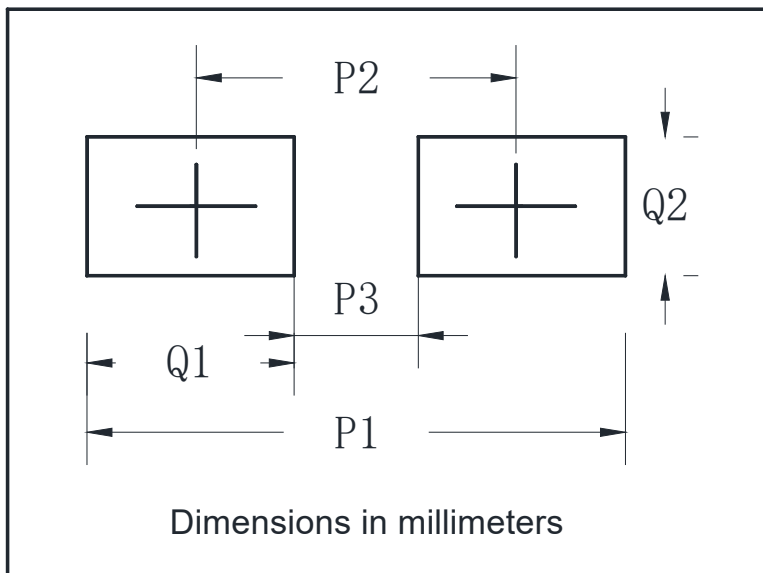
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|----------------------------|---------------|
| S16FQ         | F1           | Approximate 0.034 | 3000                 | 96000                      | 7" reel       |

## ■ Outline Dimensions



| SMAF |      |      |
|------|------|------|
| Dim  | Min  | Max  |
| A    | 2.40 | 2.80 |
| B    | 1.35 | 1.45 |
| C    | 3.40 | 3.60 |
| D    | 4.40 | 4.80 |
| E    | 1.05 | 1.25 |
| F    | 0.50 | 1.00 |
| G    | 0.15 | 0.31 |

## ■ Suggested pad layout



| SMAF |             |
|------|-------------|
| Dim  | Millimeters |
| P1   | 6.50        |
| P2   | 4.00        |
| P3   | 1.50        |
| Q1   | 2.50        |
| Q2   | 1.70        |



## S16FQ

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