

Surface Mount Fuse, 3 x 10.1 mm, Quick-Acting F, 250 VAC, 125 VDC



IEC 60127-4, IEC 60127-7 · 250 VAC · 125 VDC · Quick-

See below:

### Approvals and Compliances

#### Description

- Directly solderable on printed circuit boards
- Impermeable to potting compound used to achieve hermetic seal for use in intrinsically safe applications according to ATEX and IECEx requirements.

#### Unique Selling Proposition

- High breaking capacity up to 200A
- Low melting I<sup>2</sup>t-values, fast interruption

#### Applications

- Primary protection on SMD PCBs
- Secondary protection on SMD PCBs
- Battery Management System
- Medical Equipment
- Power supplies
- Illumination

#### References

[Packaging Details](#)

Fuse Kit [Fuse Kit UMF 250 / UMK 250](#)

#### Weblinks

[pdf data sheet](#), [html datasheet](#), [General Product Information](#), [Packaging details](#), [Distributor-Stock-Check](#), [Detailed request for product](#), [Microsite](#)

#### Technical Data

|                              |                                                                                                                                                        |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated Voltage                | 250 VAC, 125 VDC                                                                                                                                       |
| Rated current                | 0.5 - 15 A                                                                                                                                             |
| Breaking Capacity            | 100 A - 500 A                                                                                                                                          |
| Characteristic               | Quick-Acting F                                                                                                                                         |
| Mounting                     | PCB, SMT                                                                                                                                               |
| Admissible Ambient Air Temp. | -55 °C to 125 °C                                                                                                                                       |
| Climatic Category            | 55/125/21 acc. to IEC 60068-1                                                                                                                          |
| Material: Housing            | Ceramics                                                                                                                                               |
| Material: Terminals          | Tin-Plated Copper Alloy                                                                                                                                |
| Unit Weight                  | 0.23 g                                                                                                                                                 |
| Storage Conditions           | 0 °C to 40 °C, max. 70% r.h.                                                                                                                           |
| Product Marking              |  M, Rated current, Rated Voltage, Characteristic, Breaking Capacity |

|                              |                                                                           |
|------------------------------|---------------------------------------------------------------------------|
| Soldering Methods            | Reflow, Wave<br><a href="#">Soldering Profile</a>                         |
| Solderability                | 245 °C / 3 sec acc. to IEC 60068-2-58, Test Td                            |
| Resistance to Soldering Heat | 260 °C / 10 sec acc. to IEC 60068-2-58, Test Td                           |
| Moisture Sensitivity Level   | MSL 1, J-STD-020                                                          |
| Case Resistance              | >100 MΩ (between leads and body)<br>acc. to EIA/IS-722, Test 4.7          |
| Flammability                 | min. UL 94V-1<br>(acc. to EIA/IS-722, Test 4.12)                          |
| Operational Life             | 1000h @ 0.60 x I <sub>n</sub> @ 70 °C<br>(acc. to EIA/IS-722, Test 4.4.1) |
| Moisture Resistance Test     | MIL-STD-202, Method 106<br>(acc. to EIA/IS-722, Test 4.4.3)               |
| Mechanical Shock             | MIL-STD-202, Method 213 Condition A                                       |
| Resistance to Solvents       | MIL-STD-202, Method 215                                                   |

### Approvals and Compliances

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [Details about Approvals](#)

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

Approvals

The approval mark is used by the testing authorities to certify compliance with the safety requirements placed on electronic products.  
Approval Reference Type: UMF 250

| Approval Logo                                                                    | Certificates                  | Certification Body | Description                                 |
|----------------------------------------------------------------------------------|-------------------------------|--------------------|---------------------------------------------|
|  | <a href="#">VDE Approvals</a> | VDE                | VDE Certificate Number: 40027880 & 40048753 |
|  | <a href="#">UL Approvals</a>  | UL                 | UL File Number: E41599                      |

Product standards

Product standards that are referenced

| Organization                                                                     | Design                | Standard           | Description                                                                                    |
|----------------------------------------------------------------------------------|-----------------------|--------------------|------------------------------------------------------------------------------------------------|
|  | Designed according to | IEC 60127-4/2      | Miniature fuses. Part 4. Universal modular fuse-links for through-hole and surface mount types |
|  | Designed according to | IEC 60127-7/1      | Miniature fuses - Part 7: Miniature fuse-links for special applications                        |
|  | Designed according to | UL 248-14          | Low voltage fuses - Part 14: Additional fuses                                                  |
|  | Designed according to | CSA22.2 No. 248.14 | Low-Voltage Fuses - Part 14: Supplemental Fuses                                                |

Application standards

Application standards where the product can be used

| Organization                                                                     | Design                         | Standard       | Description                                                                                                          |
|----------------------------------------------------------------------------------|--------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------|
|  | Designed for applications acc. | IEC/UL 62368-1 | IEC 62368-1 includes the basic requirements for safety of audio, video, information technology and office equipment. |

Compliances

The product complies with following Guide Lines

| Identification                                                                     | Details                                      | Initiator   | Description                                                                                                                                                                                           |
|------------------------------------------------------------------------------------|----------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <a href="#">CE declaration of conformity</a> | SCHURTER AG | The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008. |
|  | <a href="#">RoHS</a>                         | SCHURTER AG | Directive RoHS 2011/65/EU, Amendment (EU) 2015/863                                                                                                                                                    |
|  | <a href="#">China RoHS</a>                   | SCHURTER AG | The law SJ / T 11363-2006 (China RoHS) has been in force since 1 March 2007. It is similar to the EU directive RoHS.                                                                                  |
|  | <a href="#">Halogen Free</a>                 | SCHURTER AG | SCHURTER strives to offer our customers halogen free products.                                                                                                                                        |
|  | <a href="#">REACH</a>                        | SCHURTER AG | On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.                               |
|  |                                              | SCHURTER AG | Universal Modular Fuse meets the standard IEC 60127-4                                                                                                                                                 |

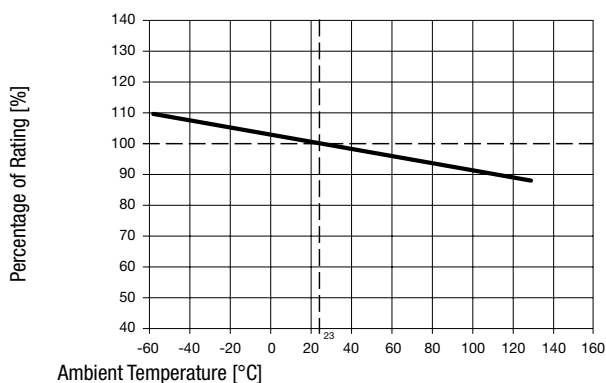
Dimension [mm]

10.1 mm



Soldering pads

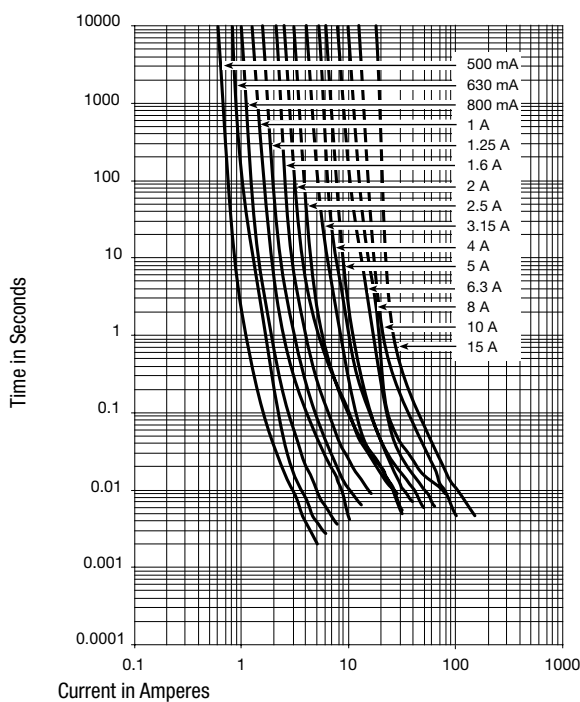
## Derating Curves



## Pre-Arcing Time

| Rated Current $I_n$ | 1.0 x $I_n$ min. | 1.25 x $I_n$ min. | 2.0 x $I_n$ max. | 10.0 x $I_n$ min. | 10.0 x $I_n$ max. |
|---------------------|------------------|-------------------|------------------|-------------------|-------------------|
| 0.5 A - 8 A         | -                | 60 min            | 120 s            | 1 ms              | 10 ms             |
| 10 A - 15 A         | 4 h              | -                 | 120 s            | 1 ms              | 10 ms             |

## Time-Current-Curves



## All Variants

| Rated Current [A] | Rated Voltage [VAC] | Rated Voltage [VDC] | Breaking Capacity | Voltage Drop 1.0 $I_n$ max. [mV] | Voltage Drop 1.0 $I_n$ typ. [mV] | Power Dissipation 1.25 $I_n$ max [mW] | Melting $I^2t$ 10.0 $I_n$ typ. [A²s] |    | Order Number |
|-------------------|---------------------|---------------------|-------------------|----------------------------------|----------------------------------|---------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 0.5               | 250                 | 125                 | 1)                | 600                              | 430                              | 500                                   | 0.042                                | ● ● ●                                                                                                                                                                                                                                                             | 3405.0163.11 |
| 0.5               | 250                 | 125                 | 1)                | 600                              | 430                              | 500                                   | 0.042                                | ● ● ●                                                                                                                                                                                                                                                             | 3405.0163.24 |
| 0.63              | 250                 | 125                 | 1)                | 500                              | 350                              | 500                                   | 0.092                                | ● ● ●                                                                                                                                                                                                                                                             | 3405.0164.11 |
| 0.63              | 250                 | 125                 | 1)                | 500                              | 350                              | 500                                   | 0.092                                | ● ● ●                                                                                                                                                                                                                                                             | 3405.0164.24 |
| 0.8               | 250                 | 125                 | 1)                | 400                              | 300                              | 500                                   | 0.21                                 | ● ● ●                                                                                                                                                                                                                                                             | 3405.0165.11 |
| 0.8               | 250                 | 125                 | 1)                | 400                              | 300                              | 500                                   | 0.21                                 | ● ● ●                                                                                                                                                                                                                                                             | 3405.0165.24 |
| 1                 | 250                 | 125                 | 1)                | 300                              | 250                              | 500                                   | 0.4                                  | ● ● ●                                                                                                                                                                                                                                                             | 3405.0166.11 |

| Rated Current<br>[A] | Rated Voltage<br>[VAC] | Rated Voltage<br>[VDC] | Breaking<br>Capacity | Voltage Drop 1.0<br>$I_n$ max. [mV] | Voltage Drop 1.0<br>$I_n$ typ. [mV] | Power Dissipa-<br>tion 1.25 $I_n$ max<br>[mW] | Melting $I^2t$ 10.0<br>$I_n$ typ. [A²s] |   | Order Number |
|----------------------|------------------------|------------------------|----------------------|-------------------------------------|-------------------------------------|-----------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1                    | 250                    | 125                    | 1)                   | 300                                 | 250                                 | 500                                           | 0.4                                     | ● ● ●                                                                                                                                                                   | 3405.0166.24 |
| 1.25                 | 250                    | 125                    | 2)                   | 300                                 | 220                                 | 1000                                          | 1                                       | ● ● ●                                                                                                                                                                   | 3405.0167.11 |
| 1.25                 | 250                    | 125                    | 2)                   | 300                                 | 220                                 | 1000                                          | 1                                       | ● ● ●                                                                                                                                                                   | 3405.0167.24 |
| 1.6                  | 250                    | 125                    | 2)                   | 300                                 | 190                                 | 1000                                          | 2.1                                     | ● ● ●                                                                                                                                                                   | 3405.0168.11 |
| 1.6                  | 250                    | 125                    | 2)                   | 300                                 | 190                                 | 1000                                          | 2.1                                     | ● ● ●                                                                                                                                                                   | 3405.0168.24 |
| 2                    | 250                    | 125                    | 2)                   | 300                                 | 200                                 | 1000                                          | 3.26                                    | ● ● ●                                                                                                                                                                   | 3405.0169.11 |
| 2                    | 250                    | 125                    | 2)                   | 300                                 | 200                                 | 1000                                          | 3.26                                    | ● ● ●                                                                                                                                                                   | 3405.0169.24 |
| 2.5                  | 250                    | 125                    | 2)                   | 300                                 | 160                                 | 1200                                          | 4.8                                     | ● ● ●                                                                                                                                                                   | 3405.0170.11 |
| 2.5                  | 250                    | 125                    | 2)                   | 300                                 | 160                                 | 1200                                          | 4.8                                     | ● ● ●                                                                                                                                                                   | 3405.0170.24 |
| 3.15                 | 250                    | 125                    | 2)                   | 300                                 | 100                                 | 1500                                          | 5.17                                    | ● ● ●                                                                                                                                                                   | 3405.0171.11 |
| 3.15                 | 250                    | 125                    | 2)                   | 300                                 | 100                                 | 1500                                          | 5.17                                    | ● ● ●                                                                                                                                                                   | 3405.0171.24 |
| 4                    | 250                    | 125                    | 2)                   | 300                                 | 100                                 | 2000                                          | 9.4                                     | ● ● ●                                                                                                                                                                   | 3405.0172.11 |
| 4                    | 250                    | 125                    | 2)                   | 300                                 | 100                                 | 2000                                          | 9.4                                     | ● ● ●                                                                                                                                                                   | 3405.0172.24 |
| 5                    | 250                    | 125                    | 2)                   | 300                                 | 110                                 | 2500                                          | 13.57                                   | ● ● ●                                                                                                                                                                   | 3405.0173.11 |
| 5                    | 250                    | 125                    | 2)                   | 300                                 | 110                                 | 2500                                          | 13.57                                   | ● ● ●                                                                                                                                                                   | 3405.0173.24 |
| 6.3                  | 250                    | 125                    | 2)                   | 300                                 | 80                                  | 3000                                          | 23.85                                   | ● ● ●                                                                                                                                                                   | 3405.0174.11 |
| 6.3                  | 250                    | 125                    | 2)                   | 300                                 | 80                                  | 3000                                          | 23.85                                   | ● ● ●                                                                                                                                                                   | 3405.0174.24 |
| 8                    | 250                    | 125                    | 2)                   | 220                                 | 80                                  | 3000                                          | 52.58                                   | ● ● ●                                                                                                                                                                   | 3405.0175.11 |
| 8                    | 250                    | 125                    | 2)                   | 220                                 | 80                                  | 3000                                          | 52.58                                   | ● ● ●                                                                                                                                                                   | 3405.0175.24 |
| 10                   | 250                    | 125                    | 2)                   | 220                                 | 150                                 | 4000                                          | 45.8                                    | ● ● ●                                                                                                                                                                   | 3405.0176.11 |
| 10                   | 250                    | 125                    | 2)                   | 220                                 | 150                                 | 4000                                          | 45.8                                    | ● ● ●                                                                                                                                                                   | 3405.0176.24 |
| 15                   | 125                    | 125                    | 3)                   | 150                                 | 100                                 | 4000                                          | 100                                     | ● ● ●                                                                                                                                                                   | 3405.0178.11 |
| 15                   | 125                    | 125                    | 3)                   | 150                                 | 100                                 | 4000                                          | 100                                     | ● ● ●                                                                                                                                                                   | 3405.0178.24 |

Availability for all products can be searched real-time: <https://www.schurter.com/en/Stock-Check/Stock-Check-SCHURTER>

- 1) IEC: 100 A @ 250 VAC, p.f.  $\geq 0.95$  / 100 A @ 125 VDC, resistive  
 1) UL: 200 A @ 250 VAC, p.f.  $\geq 0.99$  / 200 A @ 125 VDC, resistive  
 2) IEC: 100 A @ 250 VAC, p.f.  $\geq 0.95$  / 100 A @ 125 VDC, resistive  
 2) UL: 100 A @ 250 VAC, p.f.  $\geq 0.99$  / 100 A @ 125 VDC, resistive  
 3) UL: 150 A @ 125 VAC, p.f.  $\geq 0.99$  / 500 A @ 125 VDC,  $\tau < 0.1\text{ms}$

**Packaging Unit** .xx = .11 Plastic Bag (100 pcs.)  
 .xx = .24 Blister Tape 33 cm Reel (2000 pcs.)