



THE DATASHEET OF
3413.0223.11



Surface Mount Fuse, 3.2 x 1.6 mm, Quick-Acting F, 32 VAC, 63 VDC



Exemplary part photo depending on part no.

IEC 60127-4 · 32 VAC · 63 VDC · Quick-Acting F

See below:

[Approvals and Compliances](#)

Description

- IEC characteristic
- High melting I²t-values
- Impermeable to potting compound
- 1 A - 6.3 A testet according AEC-Q200 specifications

Applications

- Secondary Protection DC and AC
- Circuits with inrush

References

Weblinks

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

Technical Data

| | |
|--------------------------|-------------------------------|
| Rated Voltage | 32 VAC, 63 VDC |
| Rated current | 0.5 - 6.3 A |
| Breaking Capacity | 63 A |
| Characteristic | Quick-Acting F |
| Mounting | PCB, SMT |
| Admissible Ambient Temp. | -55 °C to 90 °C |
| Climatic Category | 55/090/21 acc. to IEC 60068-1 |
| Material: Housing | Fiber-reinforced plastic |
| Material: Terminals | Copper, Ni/Au-plated |
| Unit Weight | 0.006 g |
| Storage Conditions | 0 °C to 60 °C, max. 70% r.h. |
| Product Marking | Letter (see variants) |

| | |
|------------------------------|--|
| Soldering Methods | Reflow, Wave (0.5 A variant only) Soldering Profile |
| Solderability | J-STD-002 |
| Resistance to Soldering Heat | JEDEC J-STD-020 |
| Solderability | 250 °C / 3 sec acc. to IEC 60068-2-58, Test Td |
| Resistance to Soldering Heat | 260 +0/-5 °C / 30 sec acc. to IPC/JEDEC J-STD-020D, Level 1 |
| Flammability | UL 94V-1 |
| Thermal Shock | MIL-STD-202, Method 107 |
| Operational Life | MIL-STD-202, Method 108 Condition D |
| Load Humidity Test | MIL-STD-202, Method 103 |
| Vibration, High Frequency | MIL-STD-202, Method 204 Condition D |
| Mechanical Shock | MIL-STD-202, Method 213 Condition F |
| Resistance to Solvents | MIL-STD-202, Method 215 |
| Flame Retardance | AEC-Q200-001 |
| Board Flex | AEC-Q200-005 |
| Terminal Strength | AEC-Q200-006 |

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: USI 1206

| Approval Logo | Certificates | Certification Body | Description |
|---|-------------------------------|--------------------|----------------------------------|
|  | VDE Approvals | VDE | VDE Certificate Number: 40046290 |
|  | UL Approvals | UL | UR 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 | UL 248-14 | Low voltage fuses - Part 14: Supplemental 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 |
|--|--------------------------------|----------------|---|
|  | Suitable for applications acc. | IEC/UL 62368-1 | Audio/video, information and communication technology equipment - Part 1: Safety requirements |

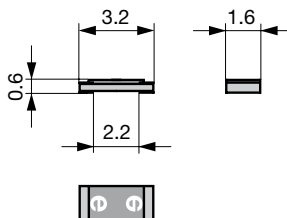
Compliances

The product complies with following Guide Lines

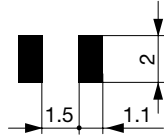
| Identification | Details | Initiator | Description |
|--|--|-------------|---|
|  | CE declaration of conformity | SCHURTER AG | The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008. |
|  | UKCA declaration of conformity | SCHURTER AG | The UKCA marking declares that the product complies with the applicable requirements laid down in the British Amendment of Regulation (EC) 765/2008. |
|  | RoHS | SCHURTER AG | Directive RoHS 2011/65/EU, Amendment (EU) 2015/863 |
|  | China RoHS | 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. |
|  | Halogen Free | SCHURTER AG | SCHURTER strives to offer our customers halogen free products. |
|  | REACH | 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 |
|  | Automotive | SCHURTER AG | AEC-Q200 is a test standard for passive components used in automotive applications. SCHURTER tests components according to the customer's agreement and is certified according to IATF 16949. |

Dimension [mm]

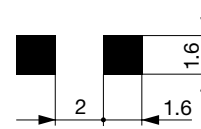
 3.2 mm



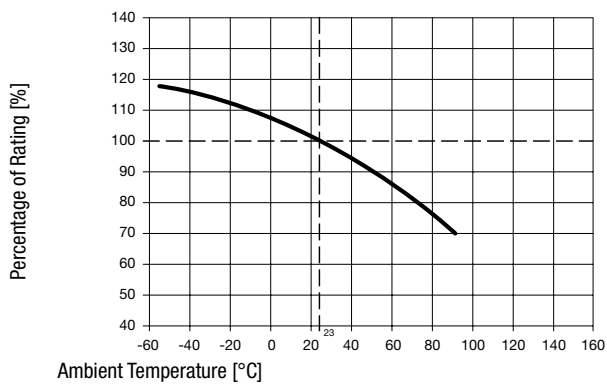
Reflow soldering pads



Wave soldering pads



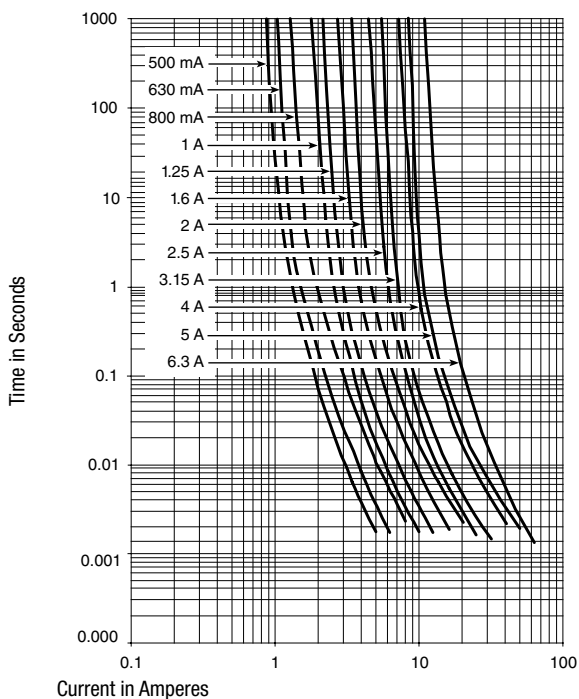
Derating Curves





Pre-Arcing Time


| Rated Current I_n | $1.25 \times I_n$ min | $2.0 \times I_n$ max | $10.0 \times I_n$ min | $10.0 \times I_n$ max |
|---------------------|-----------------------|----------------------|-----------------------|-----------------------|
| 0.5 A - 6.3 A | 60 min | 120 s | 1 ms | 10 ms |

Time-Current-Curves



All Variants

| Rated Current [A] | Rated Voltage [VAC] | Rated Voltage [VDC] | Marking | Breaking Capacity | Voltage Drop 1.0 I _n typ. [mV] | Cold Resistance typ. [mΩ] | Melting I ² t 10.0 I _n typ. [A ² s] |   | Order Number |
|-------------------|---------------------|---------------------|---------|-------------------|---|---------------------------|--|--|--------------|
| 0.5 | 32 | 63 | e | 1) | 230 | 400 | 0.045 | ● ● | 3413.0213.11 |
| 0.5 | 32 | 63 | e | 1) | 230 | 400 | 0.045 | ● ● | 3413.0213.22 |
| 0.5 | 32 | 63 | e | 1) | 230 | 400 | 0.045 | ● ● | 3413.0213.24 |
| 0.5 | 32 | 63 | e | 1) | 230 | 400 | 0.045 | ● ● | 3413.0213.26 |
| 0.63 | 32 | 63 | f | 1) | 230 | 300 | 0.067 | ● ● | 3413.0214.11 |
| 0.63 | 32 | 63 | f | 1) | 230 | 300 | 0.067 | ● ● | 3413.0214.22 |
| 0.63 | 32 | 63 | f | 1) | 230 | 300 | 0.067 | ● ● | 3413.0214.24 |
| 0.63 | 32 | 63 | f | 1) | 230 | 300 | 0.067 | ● ● | 3413.0214.26 |
| 0.8 | 32 | 63 | g | 1) | 180 | 200 | 0.15 | ● ● | 3413.0215.11 |
| 0.8 | 32 | 63 | g | 1) | 180 | 200 | 0.15 | ● ● | 3413.0215.22 |
| 0.8 | 32 | 63 | g | 1) | 180 | 200 | 0.15 | ● ● | 3413.0215.24 |
| 0.8 | 32 | 63 | g | 1) | 180 | 200 | 0.15 | ● ● | 3413.0215.26 |
| 1 | 32 | 63 | h | 1) | 100 | 85 | 0.17 | ● ● | 3413.0216.11 |
| 1 | 32 | 63 | h | 1) | 100 | 85 | 0.17 | ● ● | 3413.0216.22 |
| 1 | 32 | 63 | h | 1) | 100 | 85 | 0.17 | ● ● | 3413.0216.24 |
| 1 | 32 | 63 | h | 1) | 100 | 85 | 0.17 | ● ● | 3413.0216.26 |
| 1.25 | 32 | 63 | i | 1) | 100 | 65 | 0.28 | ● ● | 3413.0217.11 |
| 1.25 | 32 | 63 | i | 1) | 100 | 65 | 0.28 | ● ● | 3413.0217.22 |
| 1.25 | 32 | 63 | i | 1) | 100 | 65 | 0.28 | ● ● | 3413.0217.24 |
| 1.25 | 32 | 63 | i | 1) | 100 | 65 | 0.28 | ● ● | 3413.0217.26 |
| 1.6 | 32 | 63 | k | 1) | 90 | 50 | 0.49 | ● ● | 3413.0218.11 |
| 1.6 | 32 | 63 | k | 1) | 90 | 50 | 0.49 | ● ● | 3413.0218.22 |
| 1.6 | 32 | 63 | k | 1) | 90 | 50 | 0.49 | ● ● | 3413.0218.24 |
| 1.6 | 32 | 63 | k | 1) | 90 | 50 | 0.49 | ● ● | 3413.0218.26 |
| 2 | 32 | 63 | m | 1) | 90 | 37.5 | 0.9 | ● ● | 3413.0219.11 |
| 2 | 32 | 63 | m | 1) | 90 | 37.5 | 0.9 | ● ● | 3413.0219.22 |
| 2 | 32 | 63 | m | 1) | 90 | 37.5 | 0.9 | ● ● | 3413.0219.24 |
| 2 | 32 | 63 | m | 1) | 90 | 37.5 | 0.9 | ● ● | 3413.0219.26 |

| Rated Current [A] | Rated Voltage [VAC] | Rated Voltage [VDC] | Marking | Breaking Capacity | Voltage Drop 1.0 I _n typ. [mV] | Cold Resistance typ. [mΩ] | Melting I ² t 10.0 I _n typ. [A ² s] |  | Order Number |
|-------------------|---------------------|---------------------|---------|-------------------|---|---------------------------|--|---|--------------|
| 2.5 | 32 | 63 | n | 1) | 65 | 22.5 | 1.02 | ● ● | 3413.0220.11 |
| 2.5 | 32 | 63 | n | 1) | 65 | 22.5 | 1.02 | ● ● | 3413.0220.22 |
| 2.5 | 32 | 63 | n | 1) | 65 | 22.5 | 1.02 | ● ● | 3413.0220.24 |
| 2.5 | 32 | 63 | n | 1) | 65 | 22.5 | 1.02 | ● ● | 3413.0220.26 |
| 3.15 | 32 | 63 | p | 1) | 65 | 18 | 1.46 | ● ● | 3413.0221.11 |
| 3.15 | 32 | 63 | p | 1) | 65 | 18 | 1.46 | ● ● | 3413.0221.22 |
| 3.15 | 32 | 63 | p | 1) | 65 | 18 | 1.46 | ● ● | 3413.0221.24 |
| 3.15 | 32 | 63 | p | 1) | 65 | 18 | 1.46 | ● ● | 3413.0221.26 |
| 4 | 32 | 63 | r | 1) | 65 | 12.5 | 3.52 | ● ● | 3413.0222.11 |
| 4 | 32 | 63 | r | 1) | 65 | 12.5 | 3.52 | ● ● | 3413.0222.22 |
| 4 | 32 | 63 | r | 1) | 65 | 12.5 | 3.52 | ● ● | 3413.0222.24 |
| 4 | 32 | 63 | r | 1) | 65 | 12.5 | 3.52 | ● ● | 3413.0222.26 |
| 5 | 32 | 63 | s | 1) | 65 | 11.8 | 4.75 | ● ● | 3413.0223.11 |
| 5 | 32 | 63 | s | 1) | 65 | 11.8 | 4.75 | ● ● | 3413.0223.22 |
| 5 | 32 | 63 | s | 1) | 65 | 11.8 | 4.75 | ● ● | 3413.0223.24 |
| 5 | 32 | 63 | s | 1) | 65 | 11.8 | 4.75 | ● ● | 3413.0223.26 |
| 6.3 | 32 | 63 | t | 1) | 60 | 8.1 | 5.42 | ● ● | 3413.0224.11 |
| 6.3 | 32 | 63 | t | 1) | 60 | 8.1 | 5.42 | ● ● | 3413.0224.22 |
| 6.3 | 32 | 63 | t | 1) | 60 | 8.1 | 5.42 | ● ● | 3413.0224.24 |
| 6.3 | 32 | 63 | t | 1) | 60 | 8.1 | 5.42 | ● ● | 3413.0224.26 |

Most Popular.

Availability for all products can be searched real-time: <https://www.schurter.com/en/info-center/support-tools/stock-check-distributors>

1) UL: 63 A @ 32 VAC, 63 A @ 63 VDC, 600 A @ 6 VDC

1) IEC: 63 A @ 32 VAC, 63 A @ 63 VDC

1) Additional internal testing: 150 A @ 24 VAC/DC, 400 A @ 12 VDC, 600 A @ 9 VDC

Packaging Unit

acc. IEC 60286-3 Type 2a

| | |
|-----------|---|
| .xx = .11 | 100 pcs. in tape in ESD-plastic bag |
| .xx = .22 | 1000 pcs. in tape [W: 8mm and P1: 4mm] on reel [A: 18cm] |
| .xx = .24 | 5000 pcs. in tape [W: 8mm and P1: 4mm] on reel [A: 33cm] |
| .xx = .26 | 15000 pcs. in tape [W: 8mm and P1: 4mm] on reel [A: 33cm] |

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