

Surface Mount Fuse, 1.6 x 0.8 mm, Super-Quick-Acting FF, 32 VAC, 63 VDC



USF 0603

UL 248-14 · 63 VAC · 63 VDC · Super-Quick-Acting FF

See below:

[Approvals and Compliances](#)

### Description

- UL characteristic
- Low melting I<sup>2</sup>t-values, fast interruption
- Impermeable to potting compound

### Applications

- Secondary Protection DC and AC
- Circuits without inrush
- Semiconductor protection

### References

[Packaging Details](#)

### Weblinks

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

### Technical Data

|                              |                                     |
|------------------------------|-------------------------------------|
| Rated Voltage                | 63 VAC, 63 VDC                      |
| Rated current                | 0.5 - 5 A                           |
| Breaking Capacity            | 50 A                                |
| Characteristic               | Super-Quick-Acting FF               |
| Mounting                     | PCB,SMT                             |
| Admissible Ambient Air Temp. | -55 °C to 90 °C                     |
| Climatic Category            | 55/090/21 acc. to IEC 60068-1       |
| Material: Housing            | Epoxyd Glass, UL 94V-0              |
| Material: Terminals          | general Ni/Sn, for 1A version Ni/Au |
| Unit Weight                  | 0.0016 g                            |
| Storage Conditions           | 0 °C to 60 °C, max. 70% r.h.        |
| Product Marking              | Letter (see variants)               |

|                              |                                                                     |
|------------------------------|---------------------------------------------------------------------|
| Soldering Methods            | Reflow<br><a href="#">Soldering Profile</a>                         |
| Solderability                | 245 °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         |
| Moisture Resistance Test     | MIL-STD-202, Method 106E<br>(50 cycles in a temp./mister chamber)   |
| Terminal Strength            | MIL-STD-202, Method 211A<br>(Deflection of board 1 mm for 1 minute) |
| Case Resistance              | acc. to EIA/IS-722, Test 4.7<br>>100 MΩ (between leads and body)    |
| Resistance to Solvents       | MIL-STD-202, Method 215A                                            |
| Flammability                 | min. UL 94V-1<br>(acc. to EIA/IS-722, Test 4.12)                    |

### Approvals and Compliances

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

### Approvals

The approval mark is used by the testing authorities to certify compliance with the safety requirements placed on electronic products.

Approval Reference Type: USF 0603

| Approval Logo                                                                       | Certificates | Certification Body | Description            |
|-------------------------------------------------------------------------------------|--------------|--------------------|------------------------|
|  | UL Approvals | UL                 | UL File Number: E41599 |

### Product standards

Product standards that are referenced

| Organization                                                                        | Design                | Standard           | Description                                     |
|-------------------------------------------------------------------------------------|-----------------------|--------------------|-------------------------------------------------|
|  | 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

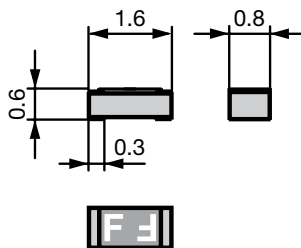
| Organization                                                                     | Design                         | Standard     | Description                                                                                     |
|----------------------------------------------------------------------------------|--------------------------------|--------------|-------------------------------------------------------------------------------------------------|
|  | Designed for applications acc. | IEC/UL 60950 | IEC 60950-1 includes the basic requirements for the safety of information technology equipment. |

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. |
|  | RoHS                         | SCHURTER AG | EU Directive RoHS 2011/65/EU                                                                                                                                                                          |
|  | 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.                               |

Dimension [mm]  1.6 mm

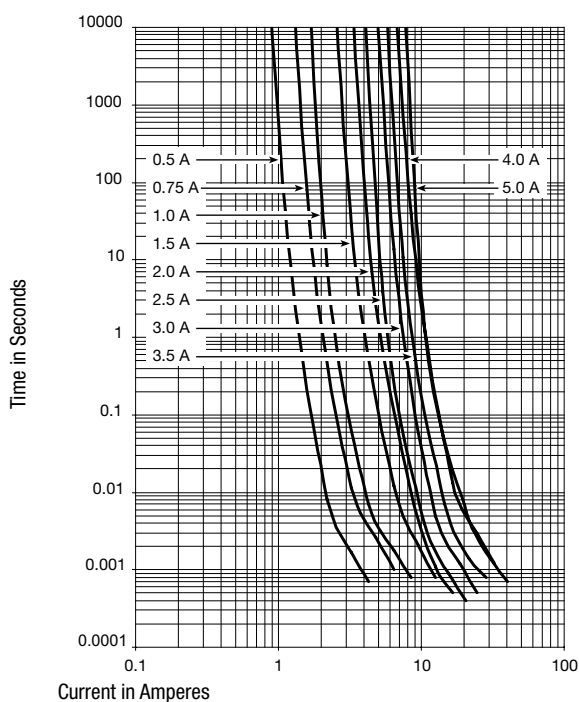


Soldering pads

Pre-Arcing Time

| Rated Current In | 1.0 x In min. | 2.0 x In max. |
|------------------|---------------|---------------|
| 0.5 A - 5 A      | 4 h           | 60 s          |

## Time-Current-Curves



## All Variants

| Rated Current [A] | Rated Voltage [VAC] | Rated Voltage [VDC] | Marking | Breaking Capacity | Voltage Drop 1.0 In max. [mV] | Voltage Drop 1.0 In typ. [mV] | Cold Resistance typ. [mΩ] | Melting I <sup>2</sup> t 8.0 In typ. [A <sup>2</sup> s] |  | Order Number |   |
|-------------------|---------------------|---------------------|---------|-------------------|-------------------------------|-------------------------------|---------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|---|
| 0.5               | 63                  | 63                  | F       | 1)                | 120                           | 101                           | 157                       | 0.02                                                    | ●                                                                                     | 3412.0113.11 | ■ |
| 0.5               | 63                  | 63                  | F       | 1)                | 120                           | 101                           | 157                       | 0.02                                                    | ●                                                                                     | 3412.0113.22 | ■ |
| 0.5               | 63                  | 63                  | F       | 1)                | 120                           | 101                           | 157                       | 0.02                                                    | ●                                                                                     | 3412.0113.24 |   |
| 0.5               | 63                  | 63                  | F       | 1)                | 120                           | 101                           | 157                       | 0.02                                                    | ●                                                                                     | 3412.0113.26 |   |
| 0.75              | 63                  | 63                  | G       | 1)                | 120                           | 100                           | 90                        | 0.04                                                    | ●                                                                                     | 3412.0114.11 | ■ |
| 0.75              | 63                  | 63                  | G       | 1)                | 120                           | 100                           | 90                        | 0.04                                                    | ●                                                                                     | 3412.0114.22 |   |
| 0.75              | 63                  | 63                  | G       | 1)                | 120                           | 100                           | 90                        | 0.04                                                    | ●                                                                                     | 3412.0114.24 |   |
| 0.75              | 63                  | 63                  | G       | 1)                | 120                           | 100                           | 90                        | 0.04                                                    | ●                                                                                     | 3412.0114.26 |   |
| 1                 | 63                  | 63                  | H       | 1)                | 120                           | 98                            | 75                        | 0.06                                                    | ●                                                                                     | 3412.0115.11 |   |
| 1                 | 63                  | 63                  | H       | 1)                | 120                           | 98                            | 75                        | 0.06                                                    | ●                                                                                     | 3412.0115.22 |   |
| 1                 | 63                  | 63                  | H       | 1)                | 120                           | 98                            | 75                        | 0.06                                                    | ●                                                                                     | 3412.0115.24 |   |
| 1                 | 63                  | 63                  | H       | 1)                | 120                           | 98                            | 75                        | 0.06                                                    | ●                                                                                     | 3412.0115.26 |   |
| 1.5               | 63                  | 63                  | K       | 1)                | 120                           | 73                            | 44                        | 0.14                                                    | ●                                                                                     | 3412.0117.11 | ■ |
| 1.5               | 63                  | 63                  | K       | 1)                | 120                           | 73                            | 44                        | 0.14                                                    | ●                                                                                     | 3412.0117.22 |   |
| 1.5               | 63                  | 63                  | K       | 1)                | 120                           | 73                            | 44                        | 0.14                                                    | ●                                                                                     | 3412.0117.24 |   |
| 1.5               | 63                  | 63                  | K       | 1)                | 120                           | 73                            | 44                        | 0.14                                                    | ●                                                                                     | 3412.0117.26 |   |
| 2                 | 32                  | 32                  | N       | 2)                | 120                           | 70                            | 27.5                      | 0.25                                                    | ●                                                                                     | 3412.0119.11 | ■ |
| 2                 | 32                  | 32                  | N       | 2)                | 120                           | 70                            | 27.5                      | 0.25                                                    | ●                                                                                     | 3412.0119.22 | ■ |
| 2                 | 32                  | 32                  | N       | 2)                | 120                           | 70                            | 27.5                      | 0.25                                                    | ●                                                                                     | 3412.0119.24 |   |
| 2                 | 32                  | 32                  | N       | 2)                | 120                           | 70                            | 27.5                      | 0.25                                                    | ●                                                                                     | 3412.0119.26 |   |
| 2.5               | 32                  | 32                  | O       | 2)                | 120                           | 75                            | 23.5                      | 0.4                                                     | ●                                                                                     | 3412.0120.11 | ■ |
| 2.5               | 32                  | 32                  | O       | 2)                | 120                           | 75                            | 23.5                      | 0.4                                                     | ●                                                                                     | 3412.0120.22 | ■ |
| 2.5               | 32                  | 32                  | O       | 2)                | 120                           | 75                            | 23.5                      | 0.4                                                     | ●                                                                                     | 3412.0120.24 |   |
| 2.5               | 32                  | 32                  | O       | 2)                | 120                           | 75                            | 23.5                      | 0.4                                                     | ●                                                                                     | 3412.0120.26 |   |
| 3                 | 32                  | 32                  | P       | 2)                | 120                           | 80                            | 18.6                      | 0.58                                                    | ●                                                                                     | 3412.0121.11 | ■ |
| 3                 | 32                  | 32                  | P       | 2)                | 120                           | 80                            | 18.6                      | 0.58                                                    | ●                                                                                     | 3412.0121.22 | ■ |
| 3                 | 32                  | 32                  | P       | 2)                | 120                           | 80                            | 18.6                      | 0.58                                                    | ●                                                                                     | 3412.0121.24 |   |
| 3                 | 32                  | 32                  | P       | 2)                | 120                           | 80                            | 18.6                      | 0.58                                                    | ●                                                                                     | 3412.0121.26 |   |

| Rated Current [A] | Rated Voltage [VAC] | Rated Voltage [VDC] | Marking | Breaking Capacity | Voltage Drop 1.0 In max. [mV] | Voltage Drop 1.0 In typ. [mV] | Cold Resistance typ. [mΩ] | Melting I <sup>2</sup> t 8.0 In typ. [A <sup>2</sup> s] |  | Order Number |
|-------------------|---------------------|---------------------|---------|-------------------|-------------------------------|-------------------------------|---------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------|--------------|
| 3.5               | 32                  | 32                  | R       | 2)                | 120                           | 85                            | 16                        | 0.8                                                     | ●                                                                                   | 3412.0122.11 |
| 3.5               | 32                  | 32                  | R       | 2)                | 120                           | 85                            | 16                        | 0.8                                                     | ●                                                                                   | 3412.0122.22 |
| 3.5               | 32                  | 32                  | R       | 2)                | 120                           | 85                            | 16                        | 0.8                                                     | ●                                                                                   | 3412.0122.24 |
| 3.5               | 32                  | 32                  | R       | 2)                | 120                           | 85                            | 16                        | 0.8                                                     | ●                                                                                   | 3412.0122.26 |
| 4                 | 32                  | 32                  | S       | 2)                | 120                           | 80                            | 12.5                      | 1.1                                                     | ●                                                                                   | 3412.0123.11 |
| 4                 | 32                  | 32                  | S       | 2)                | 120                           | 80                            | 12.5                      | 1.1                                                     | ●                                                                                   | 3412.0123.22 |
| 4                 | 32                  | 32                  | S       | 2)                | 120                           | 80                            | 12.5                      | 1.1                                                     | ●                                                                                   | 3412.0123.24 |
| 4                 | 32                  | 32                  | S       | 2)                | 120                           | 80                            | 12.5                      | 1.1                                                     | ●                                                                                   | 3412.0123.26 |
| 5                 | 32                  | 32                  | T       | 2)                | 120                           | 70                            | 10                        | 1.5                                                     | ●                                                                                   | 3412.0124.11 |
| 5                 | 32                  | 32                  | T       | 2)                | 120                           | 70                            | 10                        | 1.5                                                     | ●                                                                                   | 3412.0124.22 |
| 5                 | 32                  | 32                  | T       | 2)                | 120                           | 70                            | 10                        | 1.5                                                     | ●                                                                                   | 3412.0124.24 |
| 5                 | 32                  | 32                  | T       | 2)                | 120                           | 70                            | 10                        | 1.5                                                     | ●                                                                                   | 3412.0124.26 |

 Most Popular.

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

1) 50 A @ 63 VAC,  $\cos \varphi \geq 0.99$  / 50 A @ 63 VDC

2) 50 A @ 32 VAC,  $\cos \varphi \geq 0.99$  / 50 A @ 32 VDC

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| <b>Packaging Unit</b> | .xx = .11 Blister Tape of 100 pcs. in Plastic Bag |
|                       | .xx = .22 Blister Tape 18 cm Reel (1000 pcs.)     |
|                       | .xx = .24 Blister Tape 18 cm Reel (5000 pcs.)     |
|                       | .xx = .26 Blister Tape 33 cm Reel (15000 pcs.)    |