

## Low Current Intrinsically Safe Surface Mount Fuses

IECEX/ATEX Certified Fuse - No encapsulation required

**NEW**

### ISF003/AVX Series Fuse - IECEX and ATEX certified

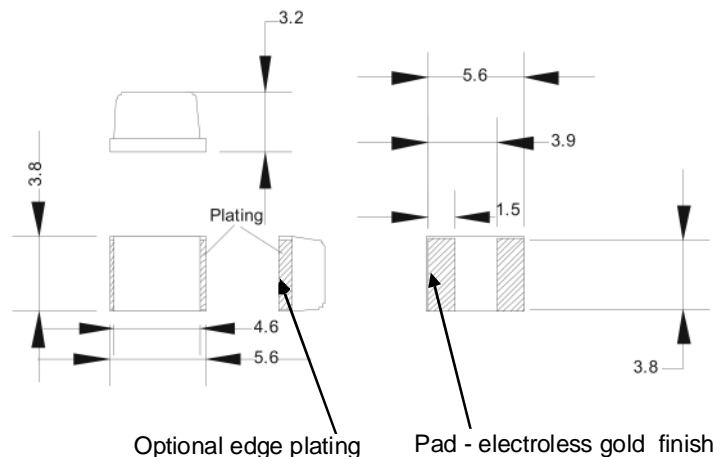
A range of overmoulded 0603 surface mounted fuses with at least 1 mm of overmoulded solid insulation to the free surface intended for use within Intrinsically Safe Equipment. They are suitable for voltages up to 30 V uncoated or 60 V under coating

#### Features

- Intrinsically Safe component, certified to:  
IEC 60079-0:2011  
IEC 60079-11:2011  
EN 60079-26:2007
- Based on AVX Accu-guard II fuses using thin film technology which allows precise control of characteristics
- Fast acting with accurate current ratings as low as 50 mA
- Very low fuse resistance - ideal for battery operated circuits
- Can be operated continuously at rated current in accordance with IEC60127-3
- Footprint 5.6 x 3.8mm. Height 3.2mm
- Eliminates the need to encapsulate fuses in circuit
- Speeds up your product certification process by use of component certificate
- Certified for Mining as well as Surface applications
- Flat topped surface for pick and place operations
- Electroless Gold plated finish as standard
- Suitable for voltages not exceeding 30 volts or 60 volts under coating - subject to AVX limits provided on AVX data sheets
- Choose with plated edges for enhanced rework capability or without for a lower price.



Dimensions:



#### Technical Data

Rated Voltage	30 V
Rated Current	0.05 - 3.00 A
Breaking Capacity	50 A
Mounting	Surface mount
Fuse resistance	Table of max and min values available on request

#### Packaging

- Packed in reels of 1000 for pick and place applications.
- Smaller quantities of fuse types available. Check with Sales for details.

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### Selection Criteria - Part Numbers

#### Version without plated edges

Part Number	AVX Part Number	Ampere Rating	Maximum Cold Resistance $\Omega$
ISF003/AV/F0603G0R05	F0603G0R05FNTR	0.050	3.40
ISF003/AV/F0603G0R06	F0603G0R06FNTR	0.062	2.50
ISF003/AV/F0603G0R07	F0603G0R07FNTR	0.075	2.00
ISF003/AV/F0603G0R10	F0603G0R10FNTR	0.100	2.40
ISF003/AV/F0603G0R12	F0603G0R12FNTR	0.125	1.60
ISF003/AV/F0603G0R15	F0603G0R15FNTR	0.150	1.20
ISF003/AV/F0603G0R20	F0603G0R20FNTR	0.200	0.80
ISF003/AV/F0603E0R25FSTR	F0603E0R25FSTR	0.25	0.650
ISF003/AV/F0603E0R37FSTR	F0603E0R37FSTR	0.375	0.450
ISF003/AV/F0603E0R50FSTR	F0603E0R50FSTR	0.50	0.250
ISF003/AV/F0603E0R75FSTR	F0603E0R75FSTR	0.75	0.200
ISF003/AV/F0603E1R00FSTR	F0603E1R00FSTR	1.00	0.130
ISF003/AV/F0603E1R25FSTR	F0603E1R25FSTR	1.25	0.090
ISF003/AV/F0603E1R50FSTR	F0603E1R50FSTR	1.50	0.060
ISF003/AV/F0603E1R75FSTR	F0603E1R75FSTR	1.75	0.050
ISF003/AV/F0603E2R00FSTR	F0603E2R00FSTR	2.00	0.040
ISF003/AV/F0603E2R50FSTR	F0603E2R50FSTR	2.50	0.035
ISF003/AV/F0603E3R00FSTR	F0603E3R00FSTR	3.00	0.030

**Note:** This data sheet shall be used in conjunction with the AVX Accu-Guard II F0603G and F0603E data sheets to determine suitability of the fuse.

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#### Version with plated edges

Part Number	AVX Part Number	Ampere Rating	Maximum Cold Resistance $\Omega$
ISF003b/AV/F0603G0R05	F0603G0R05FNTR	0.050	3.40
ISF003b/AV/F0603G0R06	F0603G0R06FNTR	0.062	2.50
ISF003b/AV/F0603G0R07	F0603G0R07FNTR	0.075	2.00
ISF003b/AV/F0603G0R10	F0603G0R10FNTR	0.100	2.40
ISF003b/AV/F0603G0R12	F0603G0R12FNTR	0.125	1.60
ISF003b/AV/F0603G0R15	F0603G0R15FNTR	0.150	1.20
ISF003b/AV/F0603G0R20	F0603G0R20FNTR	0.200	0.80
ISF003b/AV/F0603E0R25FSTR	F0603E0R25FSTR	0.25	0.650
ISF003b/AV/F0603E0R37FSTR	F0603E0R37FSTR	0.375	0.450
ISF003b/AV/F0603E0R50FSTR	F0603E0R50FSTR	0.50	0.250
ISF003b/AV/F0603E0R75FSTR	F0603E0R75FSTR	0.75	0.200
ISF003b/AV/F0603E1R00FSTR	F0603E1R00FSTR	1.00	0.130
ISF003b/AV/F0603E1R25FSTR	F0603E1R25FSTR	1.25	0.090
ISF003b/AV/F0603E1R50FSTR	F0603E1R50FSTR	1.50	0.060
ISF003b/AV/F0603E1R75FSTR	F0603E1R75FSTR	1.75	0.050
ISF003b/AV/F0603E2R00FSTR	F0603E2R00FSTR	2.00	0.040
ISF003b/AV/F0603E2R50FSTR	F0603E2R50FSTR	2.50	0.035
ISF003b/AV/F0603E3R00FSTR	F0603E3R00FSTR	3.00	0.030

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#### Certification Details

Certificates: International European	IECEX SIR 07.0050U Sira 05ATEX2274U
Certification Code	Ex ia I Ma Ex ia IIC Ga
ATEX Marking	 I M1 II 1 G
Ambient Range	-50 C to +93 C
Maximum Installed Circuit Voltage	30 Volts or 60 Volts under coating, complying with clause 6.3.9 of IEC60079 -11:2011

#### Conditions of Safe Use

- 1) The mounting of the fuse shall be such that its creepage and clearance distances comply with table 5 of IEC 60079-11:2011
- 2) The maximum external surface temperature rise of the fuses is 85 K.
- 3) Due to size limitations, these overmoulded fuses bear no marking information or size identification; this information is shown on the product packaging label and detailed in this data sheet. Please refer to these items in order to determine the suitability of the particular fuse before use.

#### Soldering Information

##### Recommended Re-flow Soldering Profile



##### Preheat & Soldering

The rate of preheat in production should not exceed 4°C/second. It is recommended not to exceed 2°C/second. Temperature differential from preheat to soldering should not exceed 150°C.

##### Hand Soldering & Rework

Hand soldering is permissible. Preheat of the PCB to 100°C is required. The most preferable technique is to use hot air soldering tools. Where a soldering iron is used, a temperature controlled model not exceeding 30 watts should be used and set to not more than 260°C. Maximum allowed time at temperature is 1 minute.

##### Cooling

After soldering, the assembly should preferably be allowed to cool naturally. In the event of assisted cooling, similar conditions to those recommended for preheating should be used.