

Low Current Intrinsicly Safe Surface Mount Fuses

ISF003/AVX Series Fuse



IECEx / ATEX Certified Fuse – No encapsulation required

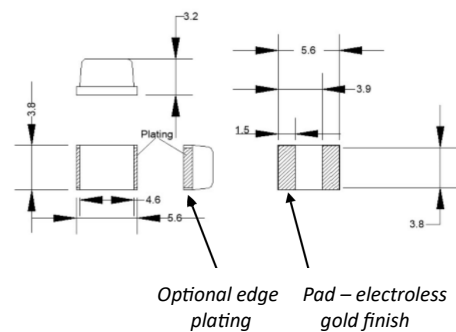
A range of overmoulded 0603 surface mounted fuses with at least 1mm of overmoulded solid insulation to the free surface intended for use within Intrinsicly Safe Equipment. They are suitable for voltages up to 30 V uncoated or 60 V under coating.

Features

- Intrinsically safe component
- 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 28 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



Packaging

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

Certification Details

International Certification: IECEx SIR 07.0050U
 European Certification: Sira 05ATEX 2274U
 Ex Protection: Ex ia I Ma
 Ex ia IIC Ga

Marking required: I M1
 II 1 G

Ambient Temperature Range: -50°C to +93°C

Maximum Installed Circuit Voltage: 30 volts or 60 volts under coating, complying with clause 6.3.8 of IEC 60079-11:2011

Technical Data

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

Conditions of Safe Use

- 1) The mounting of the fuse shall be such that its creepage and clearances distances comply with table 5 of IEC 60079-11:2011
- 2) The maximum external surface temperature rise of the fuses is 85K.
- 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.

Selection Criteria - Part Numbers

Part Number (without plated edges) ISF003	Part Number (with plated edges) ISF003b	AVX Part Number	Ampere Rating	Maximum Cold Resistance Ω
ISF003/AV/F0603G0R02	ISF003b/AV/F0603G0R02	F0603G0R02FNTR	0.028	7.50
ISF003/AV/F0603G0R03	ISF003b/AV/F0603G0R03	F0603G0R03FNTR	0.0375	4.80
ISF003/AV/F0603G0R05	ISF003b/AV/F0603G0R05	F0603G0R05FNTR	0.050	3.40
ISF003/AV/F0603G0R06	ISF003b/AV/F0603G0R06	F0603G0R06FNTR	0.062	2.50
ISF003/AV/F0603G0R07	ISF003b/AV/F0603G0R07	F0603G0R07FNTR	0.075	2.00
ISF003/AV/F0603G0R10	ISF003b/AV/F0603G0R10	F0603G0R10FNTR	0.100	2.40
ISF003/AV/F0603G0R12	ISF003b/AV/F0603G0R12	F0603G0R12FNTR	0.125	1.60
ISF003/AV/F0603G0R15	ISF003b/AV/F0603G0R15	F0603G0R15FNTR	0.150	1.20
ISF003/AV/F0603G0R20	ISF003b/AV/F0603G0R20	F0603G0R20FNTR	0.200	0.80
ISF003/AV/F0603E0R25FSTR	ISF003b/AV/F0603E0R25FSTR	F0603E0R25FSTR	0.25	0.650
ISF003/AV/F0603E0R37FSTR	ISF003b/AV/F0603E0R37FSTR	F0603E0R37FSTR	0.375	0.450
ISF003/AV/F0603E0R50FSTR	ISF003b/AV/F0603E0R50FSTR	F0603E0R50FSTR	0.50	0.250
ISF003/AV/F0603E0R75FSTR	ISF003b/AV/F0603E0R75FSTR	F0603E0R75FSTR	0.75	0.200
ISF003/AV/F0603E1R00FSTR	ISF003b/AV/F0603E1R00FSTR	F0603E1R00FSTR	1.00	0.130
ISF003/AV/F0603E1R25FSTR	ISF003b/AV/F0603E1R25FSTR	F0603E1R25FSTR	1.25	0.090
ISF003/AV/F0603E1R50FSTR	ISF003b/AV/F0603E1R50FSTR	F0603E1R50FSTR	1.50	0.060
ISF003/AV/F0603E1R75FSTR	ISF003b/AV/F0603E1R75FSTR	F0603E1R75FSTR	1.75	0.050
ISF003/AV/F0603E2R00FSTR	ISF003b/AV/F0603E2R00FSTR	F0603E2R00FSTR	2.00	0.040
ISF003/AV/F0603E2R50FSTR	ISF003b/AV/F0603E2R50FSTR	F0603E2R50FSTR	2.50	0.035
ISF003/AV/F0603E3R00FSTR	ISF003b/AV/F0603E3R00FSTR	F0603E3R00FSTR	3.00	0.030

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

Soldering Information

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.

Recommended Re-Flow Soldering Profile

