

ACCU-GUARD® TECHNOLOGY

The Accu-Guard® series of fuses is based on thin-film techniques. This technology provides a level of control on the component electrical and physical characteristics that is generally not possible with standard fuse technologies. This has allowed KYOCERA AVX to offer a series of devices which are designed for modern surface mount circuit boards which require protection.

FEATURES

- Accurate current rating
- Fast acting
- Small-standard 0402, 0805, 1206 and 0612 chip sizes
- Taped and reeled
- Completely compatible with all soldering systems used for SMT
- Lead Free Series (F0201G, F0402G, F0603G, F0402E, F0603E, F0805B, F1206B)

APPLICATIONS

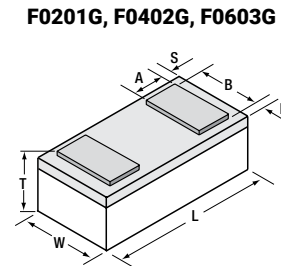
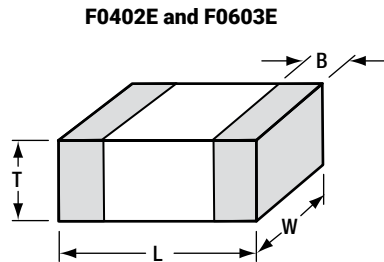
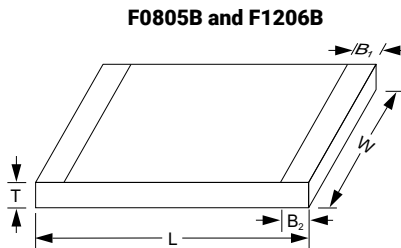
- Two-Way Radios
- Home Appliances
- Battery Management Systems
- Battery Chargers
- Rechargeable Battery Packs
- Computers
- Hard Disk Drives
- PDA's
- LCD Screens
- SCSI Interface
- Digital Cameras
- Video Cameras



APPROVAL FILE NUMBERS

- UL, cUL: RCD#E143842

DIMENSIONS mm (inches)



	F0201G	F0402G	F0603G	F0402E	F0603E	F0805B	F1206B
L	0.60 ± 0.05 (0.023 ± 0.002)	1.00 ± 0.05 (0.039 ± 0.002)	1.60 ± 0.10 (0.063 ± 0.004)	1.00 ± 0.10 (0.039 ± 0.004)	1.60 ± 0.10 (0.063 ± 0.004)	2.10 ± 0.20 (0.083 ± 0.008)	3.10 ± 0.20 (0.122 ± 0.008)
W	0.325 ± 0.05 (0.0128 ± 0.002)	0.58 ± 0.04 (0.023 ± 0.002)	0.81 ± 0.10 (0.032 ± 0.004)	0.55 ± 0.07 (0.022 ± 0.003)	0.81 ± 0.10 (0.032 ± 0.004)	1.27 ± 0.10 (0.050 ± 0.004)	1.60 ± 0.10 (0.063 ± 0.004)
T	0.225 ± 0.05 (0.009 ± 0.002)	0.35 ± 0.05 (0.014 ± 0.002)	0.61 ± 0.10 (0.024 ± 0.004)	0.40 ± 0.10 (0.016 ± 0.004)	0.63 ± 0.10 (0.025 ± 0.004)	0.90 ± 0.2 (0.035 ± 0.008)	1.20 ± 0.20 (0.047 ± 0.008)
B	0.275 ± 0.025 (0.011 ± 0.001)	0.48 ± 0.05 (0.019 ± 0.002)	0.71 ± 0.05 (0.028 ± 0.002)	0.20 ± 0.10 (0.008 ± 0.004)	0.35 ± 0.15 (0.014 ± 0.006)	0.30 ± 0.15 (0.012 ± 0.006)	0.43 ± 0.25 (0.017 ± 0.010)
A	0.10 ± 0.025 (0.004 ± 0.001)	0.20 ± 0.05 (0.008 ± 0.002)	0.28 ± 0.05 (0.011 ± 0.002)				
S, H	0.025 ± 0.025 (0.001 ± 0.001)	0.05 ± 0.05 (0.002 ± 0.002)	0.05 ± 0.05 (0.002 ± 0.002)				

HOW TO ORDER

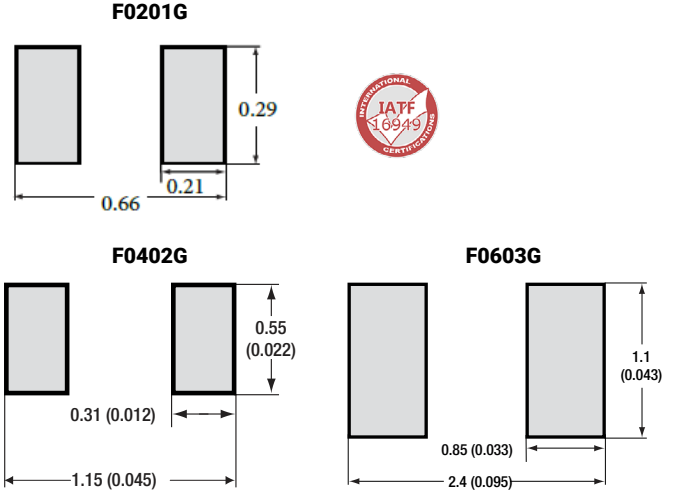
F	0603	A	0R20	F	W	TR
Product Fuse	Size	Fuse Version	Rated Current	Fuse Speed	Termination	Packaging
	See table for standard sizes	B = Accu-Guard® II E = Accu-Guard® II 0402, 0603 G = Accu-Guard® II Low Current 0201, 0402, 0603	Current expressed in Amps. Letter R denotes decimal point e.g. 0.20A=0R20 1.75A=1R75	F = Fast	S = Nickel/Lead-Free Solder coated (Sn 100), SMD W = Nickel/solder coated (Sn 63, Pb 37) Solder Coated (Sn100) N = Nickel/Lead-Free Solder Coated (Sn100), LGA	TR = Tape and reel

Accu-Guard® II Low Current

LGA Miniature 0201, 0402 and 0603 Size Thin-Film Fuses

The new Accu-Guard® series of fuses is based on thin-film technology which allows precise control of the component electrical and physical characteristics that is not possible with standard fuse technologies. The Accu-Guard Low Current series encompasses the lowest current ratings in compact 0402 and 0603 packages and features LGA terminations.

RECOMMENDED PAD LAYOUT mm (inches)



ELECTRICAL SPECIFICATIONS

Operating temperature: -55°C to +125°C

Current carrying capacity:

- 55°C to -11°C 107% of rating
- 10°C to +60°C 100% of rating
- +61°C to +100°C 85% of rating
- +101°C to +125°C 80% of rating

Rated voltage: 32V (0201), 63V (F0603G), 32V (F0402G)

Post-fusing resistance: >1MΩ

Interrupt rating: 50A

Termination: Nickel/Solder

Part Number	Current Rating A	Resistance @0.1 x I rated Ω (max.)	Voltage Drop @ I rated mV (max.)	Fusing Current (within 5 sec) A	Pre-Arc I ² t @10x I rated A ² -sec (typ)	Color Code
F0201G0R02FNTR / F0402G0R02FNTR / F0603G0R02FNTR	0.028	7.5	290	0.070	6 x 10 ⁻⁷	Green
F0201G0R03FNTR / F0402G0R03FNTR / F0603G0R03FNTR	0.0375	4.8	230	0.094	8 x 10 ⁻⁷	Red
F0201G0R05FNTR / F0402G0R05FNTR / F0603G0R05FNTR	0.050	3.4	250	0.125	2 x 10 ⁻⁶	Blue
F0201G0R06FNTR / F0402G0R06FNTR / F0603G0R06FNTR	0.062	2.5	280	0.155	2 x 10 ⁻⁶	Yellow
F0201G0R07FNTR / F0402G0R07FNTR / F0603G0R07FNTR	0.075	2.0	280	0.188	4 x 10 ⁻⁶	Brown
F0201G0R10FNTR / F0402G0R10FNTR / F0603G0R10FNTR	0.100	2.4	300	0.250	7 x 10 ⁻⁶	Red
F0201G0R12FNTR / F0402G0R12FNTR / F0603G0R12FNTR	0.125	1.6	250	0.312	1 x 10 ⁻⁵	White
F0201G0R15FNTR / F0402G0R15FNTR / F0603G0R15FNTR	0.150	1.2	220	0.375	2 x 10 ⁻⁵	Green
F0201G0R20FNTR* / F0402G0R20FNTR / F0603G0R20FNTR	0.200	0.8	210	0.500	4 x 10 ⁻⁵	Pink
F0402G0R25FNTR / F0603G0R25FNTR	0.25	0.55	180	0.625	2 x 10 ⁻⁴	Blue
F0402G0R37FNTR / F0603G0R37FNTR	0.375	0.30	150	0.938	3 x 10 ⁻⁴	Red
F0402G0R50FNTR / F0603G0R50FNTR	0.5	0.20	140	1.25	7 x 10 ⁻⁴	Green

*Blue Color Code

ENVIRONMENTAL CHARACTERISTICS

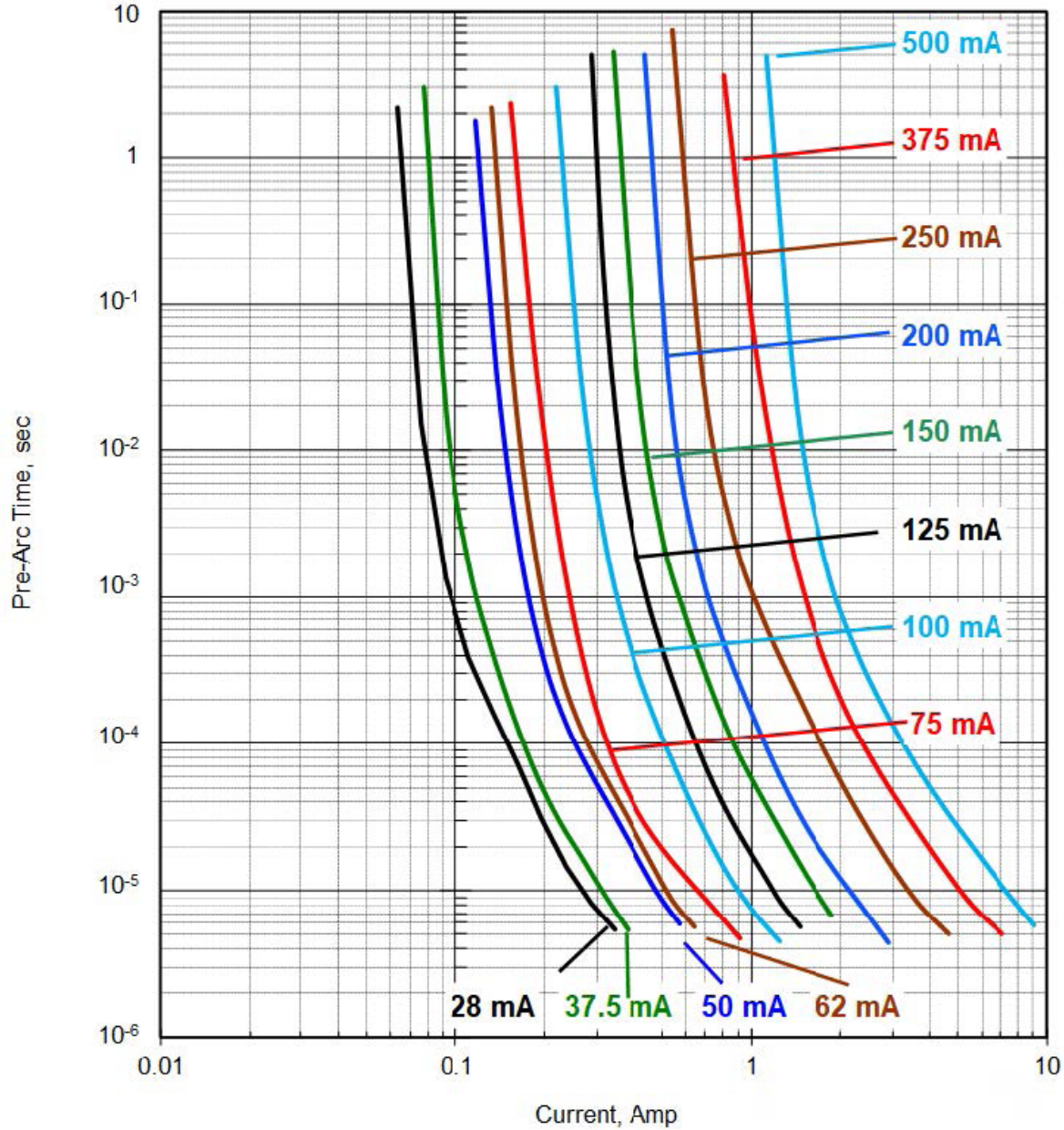
Test	Conditions	Required
Solderability	Components completely immersed in a solder bath at 245 ±5°C for 3 secs.	Total area of imperfections in solder coaup to 5% of the land surface area
Leach Resistance	Components completely immersed in a solder bath at 255 ±5°C for 60 secs.	Dissolution of termination ≤ 15% of the land surface area
Storage	12 months minimum with components stored in "as received" packaging.	Good solderability
Shear	Components mounted to a substrate. Increasing shearing force applied parallel to the substrate till destruction.	Destruction force: • 5N for 0402 and 0603 size • 2N for 0201 size
Temperature Cycling	Components mounted to a flexible substrate (e.g. FR - 4). 1000 cycles -55°C to +125°C.	No Visible damage ΔR/R<10%
Bend	Tested as shown in diagram 	No visible damage ΔR/R<10%

Accu-Guard® II Low Current

LGA Miniature 0201, 0402 and 0603 Size Thin-Film Fuses



FUSE TIME-CURRENT CHARACTERISTICS

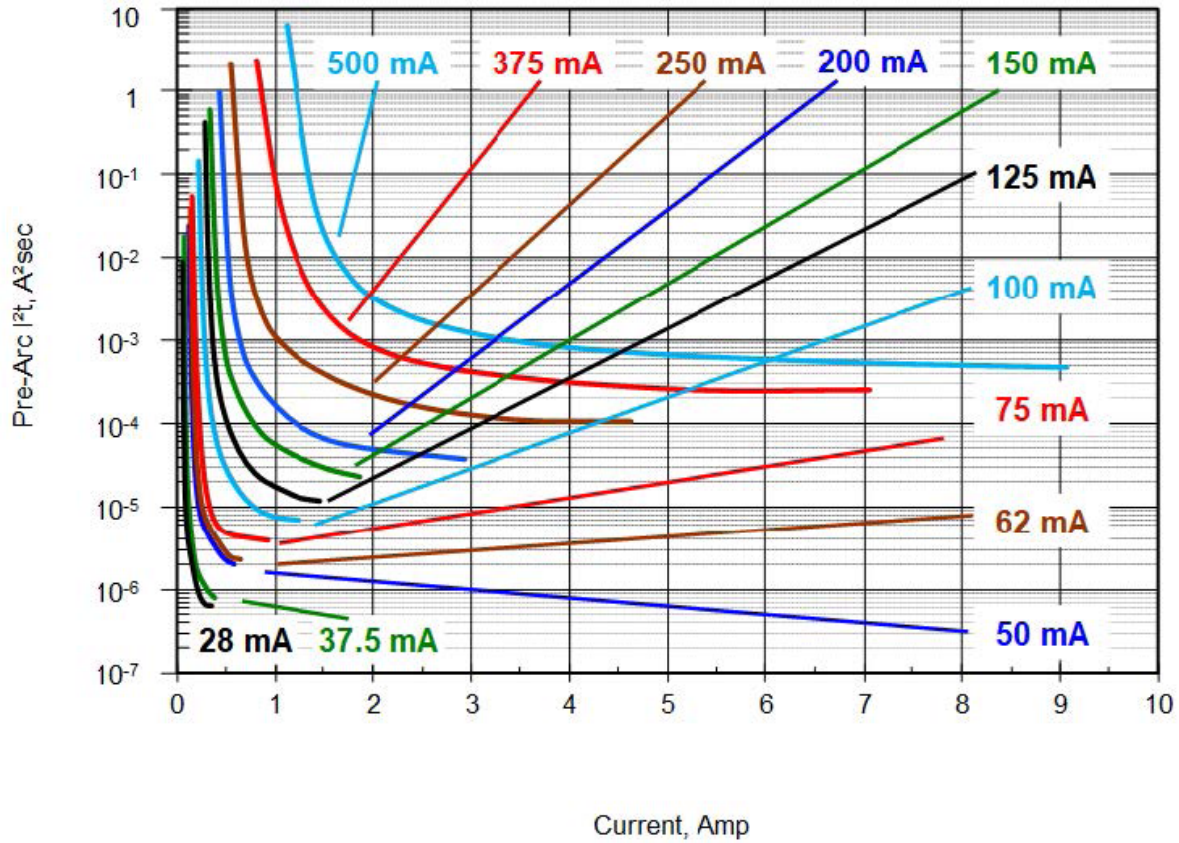


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LGA Miniature 0201, 0402 and 0603 Size Thin-Film Fuses



FUSE PRE-ARC JOULE INTEGRALS VS CURRENT

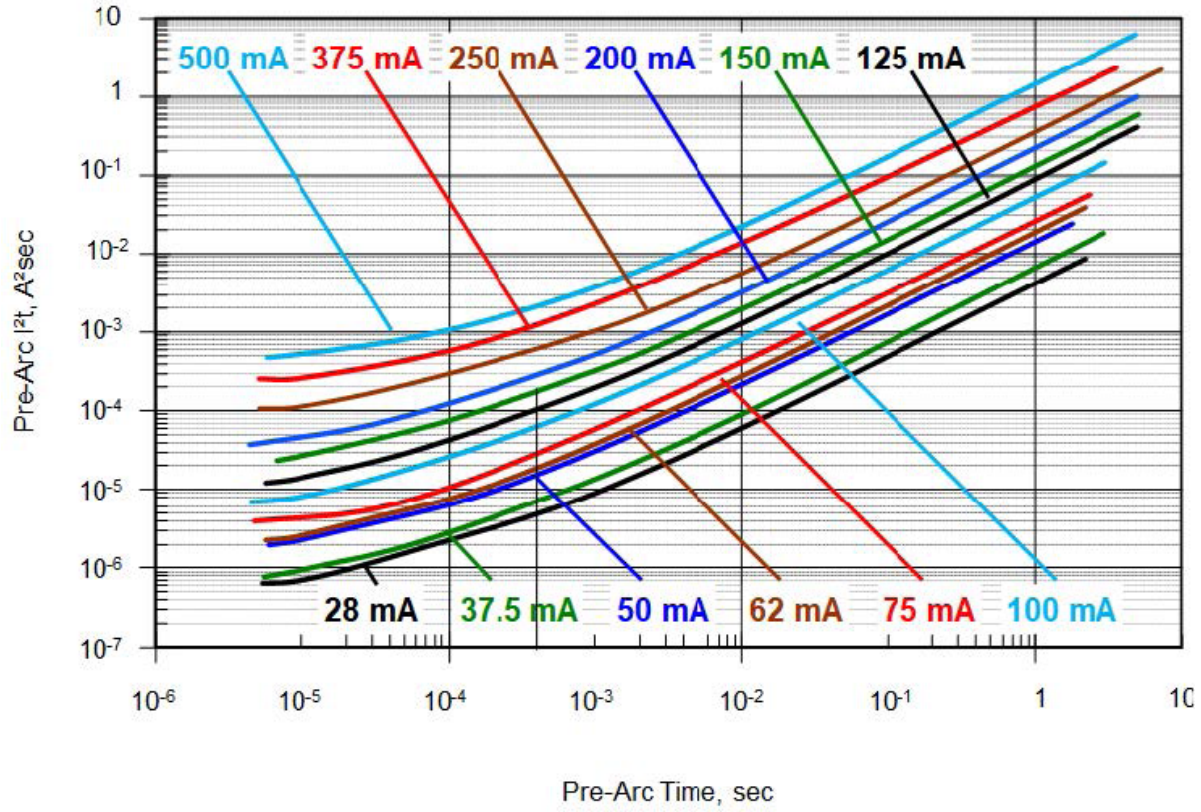


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LGA Miniature 0201, 0402 and 0603 Size Thin-Film Fuses



FUSE PRE-ARC JOULE INTEGRALS VS PRE-ARC TIME



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[F12F20](#) [TA3VT2](#) [F12F1](#) [F06F7](#) [F06T3.5](#) [F06F0.375](#) [F06T8](#) [F12F30](#) [4T2A250V](#) [R12.100.7](#) [R12.100.30](#)