Accu-Guard®

Introduction

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

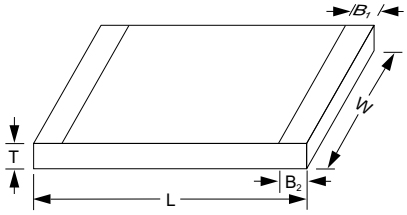
RoHS COMPLIANT
For RoHS compliant products, please select correct termination style.

APPROVAL FILE NUMBERS

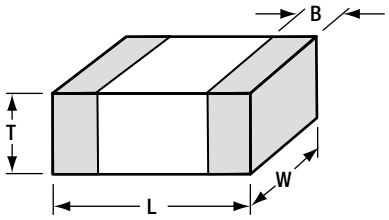
- UL, cUL: RCD#E143842

DIMENSIONS mm (inches)

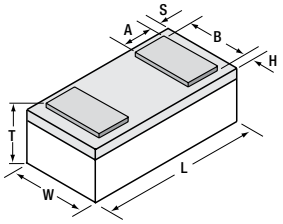
F0805B and F1206B



F0402E and F0603E



F0201G, F0402G, F0603G



	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

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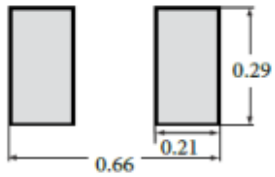
Accu-Guard® II Low Current

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

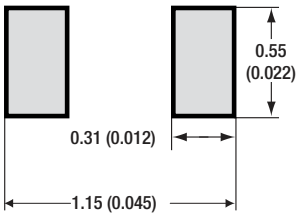
The new Accu-Guard® series of fuses is based on thin-film technology which allows precise control of the component electrical and physical characteristics that is not possible with standard fuse technologies. The Accu-Guard Low Current series encompasses the lowest current ratings in compact 0402 and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

RECOMMENDED PAD LAYOUT mm (inches)

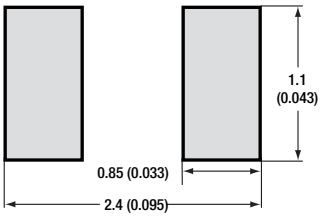
F0201G



F0402G



F0603G



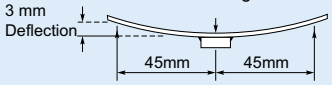
ELECTRICAL SPECIFICATIONS

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 I2t @10x I rated A^2-sec (typ)	Color Code
F0201G0R02FNTR / F0402G0R02FNTR / F0603G0R02FNTR	0.028	7.5	290	0.070	6×10^{-7}	Green
F0201G0R03FNTR / F0402G0R03FNTR / F0603G0R03FNTR	0.0375	4.8	230	0.094	8×10^{-7}	Red
F0201G0R05FNTR / F0402G0R05FNTR / F0603G0R05FNTR	0.050	3.4	250	0.125	2×10^{-6}	Blue
F0201G0R06FNTR / F0402G0R06FNTR / F0603G0R06FNTR	0.062	2.5	280	0.155	2×10^{-6}	Yellow
F0201G0R07FNTR / F0402G0R07FNTR / F0603G0R07FNTR	0.075	2.0	280	0.188	4×10^{-6}	Brown
F0201G0R10FNTR / F0402G0R10FNTR / F0603G0R10FNTR	0.100	2.4	300	0.250	7×10^{-6}	Red
F0201G0R12FNTR / F0402G0R12FNTR / F0603G0R12FNTR	0.125	1.6	250	0.312	1×10^{-5}	White
F0201G0R15FNTR / F0402G0R15FNTR / F0603G0R15FNTR	0.150	1.2	220	0.375	2×10^{-5}	Green
F0201G0R20FNTR* / F0402G0R20FNTR / F0603G0R20FNTR	0.200	0.8	210	0.500	4×10^{-5}	Pink
F0402G0R25FNTR / F0603G0R25FNTR	0.25	0.55	180	0.625	2×10^{-4}	Blue
F0402G0R37FNTR / F0603G0R37FNTR	0.375	0.30	150	0.938	3×10^{-4}	Red
F0402G0R50FNTR / F0603G0R50FNTR	0.5	0.20	140	1.25	7×10^{-4}	Green

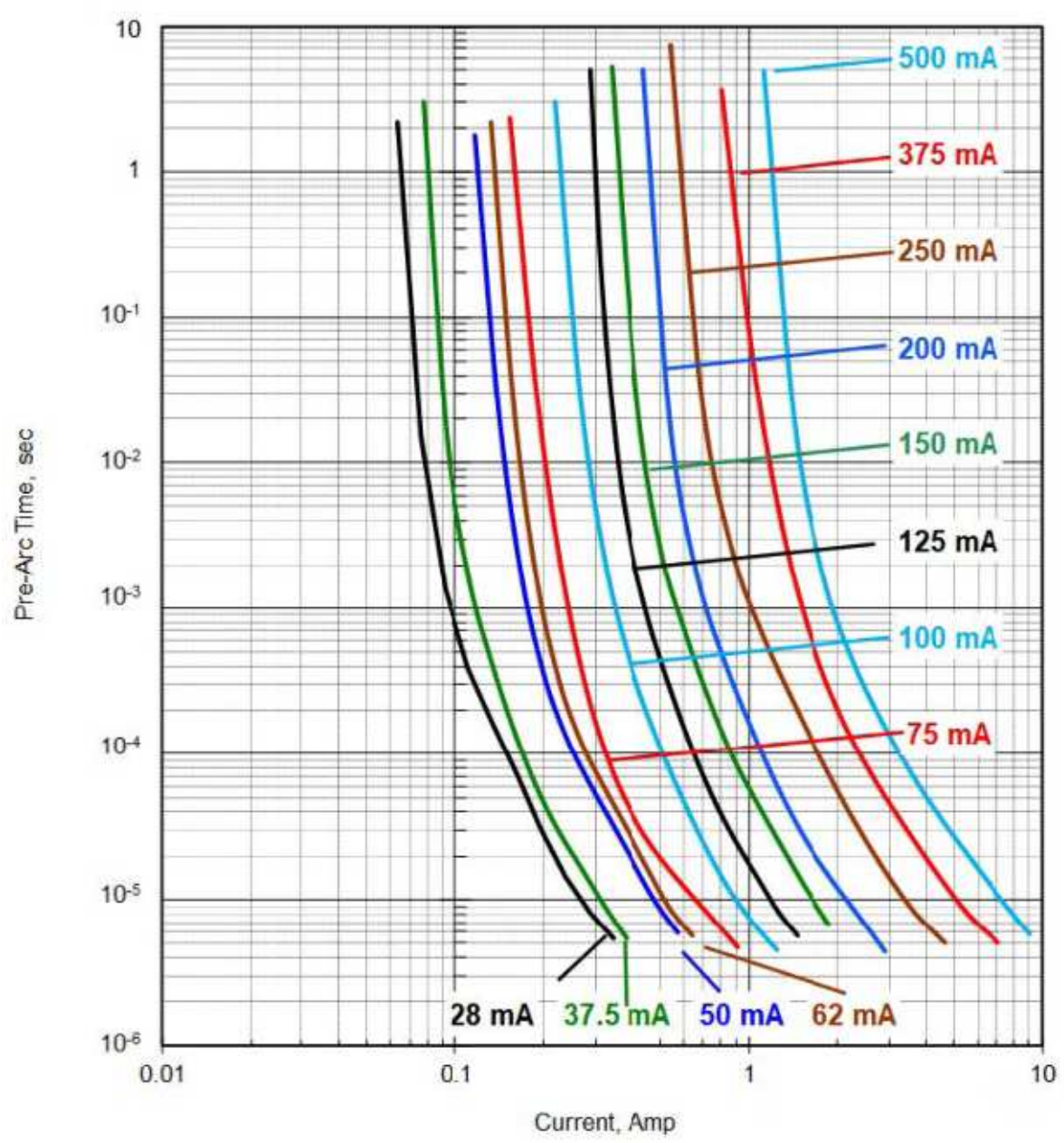
*Blue Color Code

ENVIRONMENTAL CHARACTERISTICS

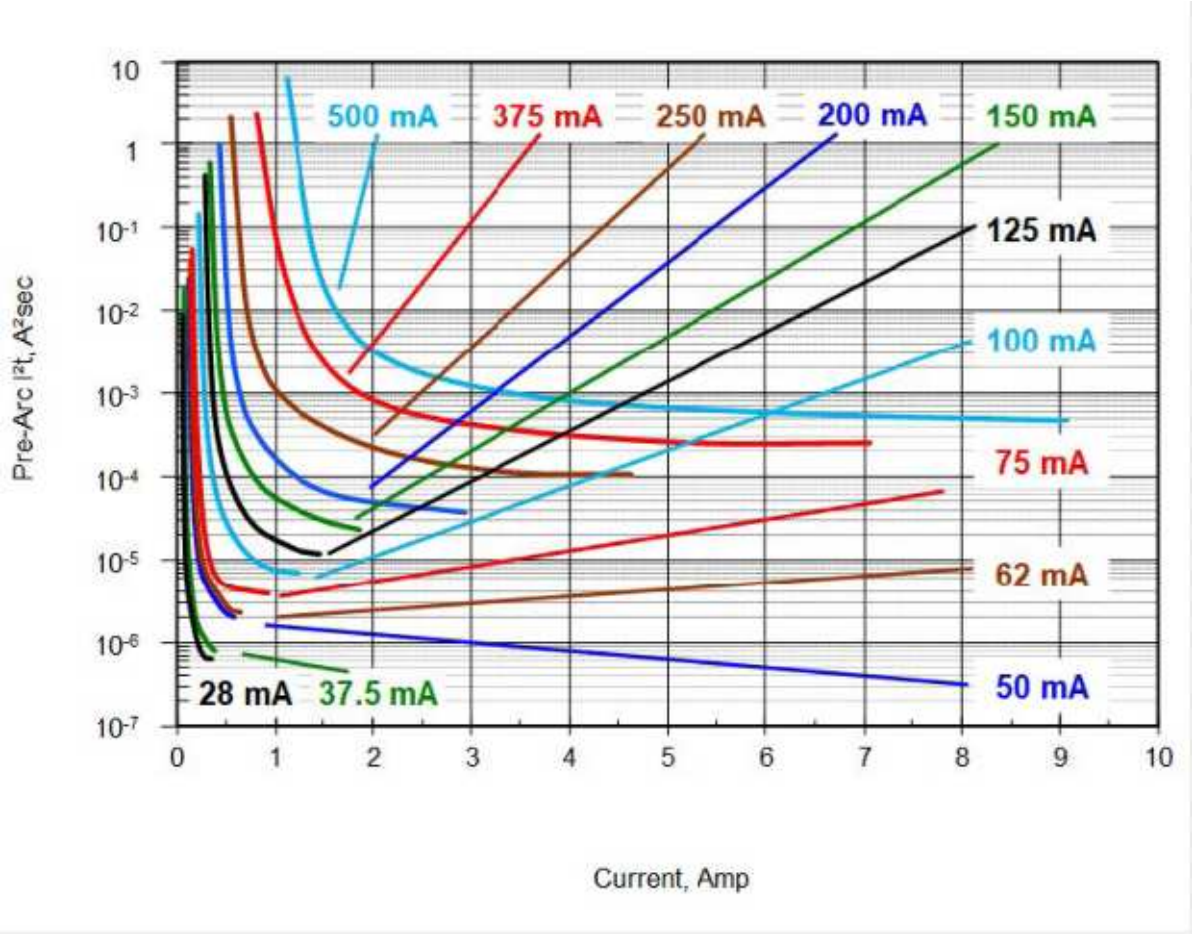
Test	Conditions	Required
Solderability	Components completely immersed in a solder bath at 245 ±5°C for 3 secs.	Total area of imperfections in solder coatup to 5% of the land suface area
Leach Resistance	Components completely immersed in a solder bath at 255 ±5°C for 60 secs.	Dissolution of termination ≤ 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 paralled to the sufstrate 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%

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FUSE TIME–CURRENT CHARACTERISTICS



FUSE PRE–ARC JOULE INTEGRALS VS CURRENT



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FUSE PRE–ARC JOULE INTEGRALS VS PRE–ARC TIME

