

SMT Chip Fuse

Subminiature Surface Mount Fuses

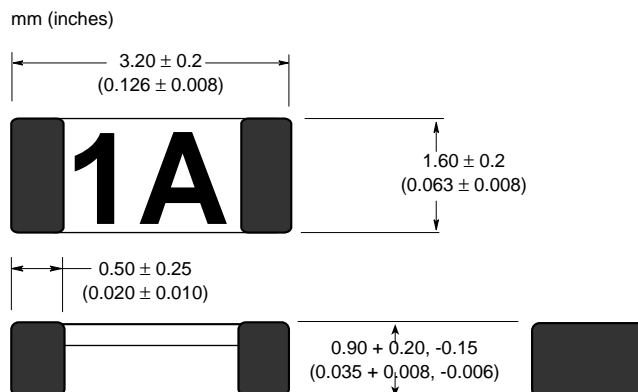
3216FF



CATALOG SYMBOL: 3216FF
VOLTAGE RATING: 32 VOLT AC, 63 VOLT DC (250mA - 3A)
 32 VOLT AC, 32 VOLT DC (4 - 5A)
INTERRUPTING RATING: 50 AMP AC/DC
PHYSICAL SIZE: EIA SOCM-3216AC
 (EQUIVALENT TO 1206)
 3.2 X 1.6 X 0.90 mm
 0.126 X 0.063 X 0.035 IN.

AGENCY APPROVALS:
 UL RECOGNIZED
 ALL RATINGS - (FILE E19180, GUIDE # JDYX2)
 CSA CERTIFIED
 1.5 - 3A - (FILE 53787, CLASS 1422-01)
 CSA COMPONENT ACCEPTANCE
 250-750MA, 1A, 4 - 5A - (FILE 53787, CLASS 1422-30)

Dimensional Data



- **Bussmann SMT Chip Fuses** utilize metal film and ultra-sonic wire bond technologies for superior fusing action and enhanced reliability.
- The fuse element is bonded to a ceramic substrate and encapsulated with glass, providing excellent short circuit performance and environmental integrity.
- Substrate and coating thermal expansion coefficients are closely matched to that of FR-4 epoxy-glass circuit board for superior joint reliability. Predicated reliability of the 3216FF chip fuse is 30 times greater than that of the typical chip capacitor (consult Bussmann for details).
- The end terminations are over-plated with nickel and tin-lead.

Time Current Characteristics

- Fast acting fuse: Will carry 100% of rated current for a minimum of 4 hours, and will open within 5 seconds at 250% of rated current (250mA - 3A).
- The 4-5A fuses will open within 1 second at 350% of rated current.

Electrical Characteristics

Part Number (XX=Package Code)	Current Rating (Ampere)	Mark Appearing On Part	Typical Melting Integral @ 50A (A ² * sec)		Typical Total Clearing Integral @ 50A (A ² * sec)		Typ. Resistance @ ≤ 10% Rated Current (Ohms)	Typ. Voltage Drop @ Rated Current (Volts)
			AC	DC	AC	DC		
XX/3216FF-250mA	.250	.25	.00016	.000084	.00017	.0001	4.50	1.4
XX/3216FF-375mA	.375	White Dot	.001	.0002	.0010	.0009	1.80	.73
XX/3216FF-500mA	.500	0.5	.0014	.0019	.0016	.0026	1.15	.66
XX/3216FF-750mA	.750	.75	.0033	.00095	.0033	.0042	.75	.63
XX/3216FF-1A	1	1	.012	.007	.014	.009	.168	.20
XX/3216FF-1.5A	1.5	1.5	.047	.029	.048	.034	.098	.18
XX/3216FF-2A	2	2	.116	.081	.136	.092	.063	.16
XX/3216FF-2.5A	2.5	2.5	.208	.171	.210	.198	.046	.14
XX/3216FF-3A	3	3	.426	.359	.507	.369	.037	.13
XX/3216FF-4A	4	4	.187	.164	.208	.168	.019	.11
XX/3216FF-4.5A	4.5	4.5	.546	.463	.550	.47	.014	.10
XX/3216FF-5A	5	5	.663	.619	.668	.623	.013	.09

NOTE:

1. AC interrupting rating, melting integral and total clearing integral measured at 32V, unity power factor.
2. DC interrupting rating, melting integral and total clearing integral measured at 63V(250mA - 3A) and 32V (4 - 5A), with a battery source.
3. Voltage drop measured at 23 ± 3°C ambient temperature with the device mounted on a suitable circuit board trace.
4. It is recommended that fuses be mounted with ceramic (white) side facing up.
5. Device is designed to carry rated current for four hours minimum. An operating current of 80% or less of rated current is recommended, with further derating required at elevated ambient temperatures.
6. Contact Bussmann if higher ampere ratings are needed.

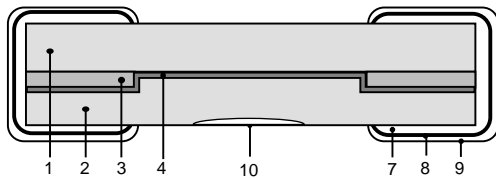
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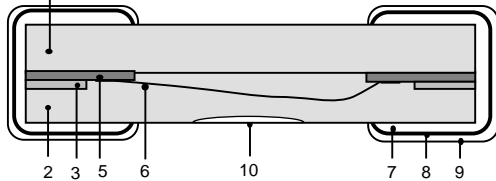
3216FF



Construction



Construction A:
Metal Film Fusible
Element
(250mA - 750mA
and 4 - 5A)
Alt. Construction
(1A - 3A)

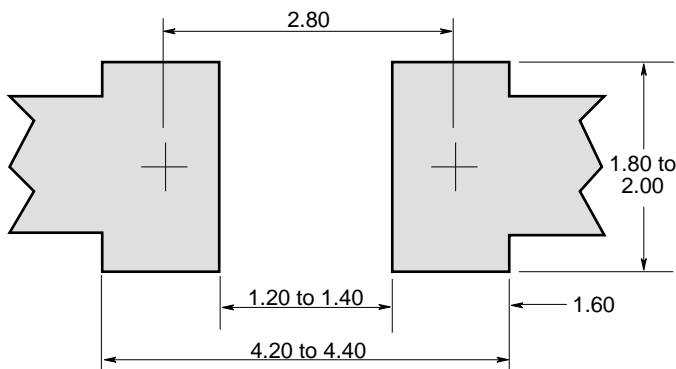


Construction B:
Gold Wire Bond
Element
(1A - 3A)

- 1. Ceramic Substrate
- 2. Glass Cover
- 3. Termination Pad
- 4. Metal Film Element
- 5. Wire Bond Pad
- 6. Wire Element
- 7. Silver End Termination
- 8. Nickel Barrier (5.1 - 11.03 μm)
- 9. 90/10 Tin-lead Plating (7.6 - 12.7 μm)
- 10. Marking

Drawing is not to scale.

Recommended Land Pattern - mm

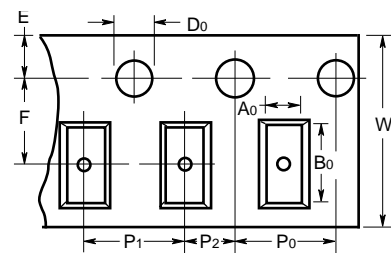


NOTE: Trace geometry may affect fuse performance (time-current characteristics \leq 300% of rated current and voltage drop at rated current).

Packaging Information

- Tape and Reel: Standard 8mm tape, in compliance with EIA-RS481 (equivalent to IEC 286, Part 3).
- Fuses are orientated in embossed pockets with ceramic side facing up to facilitate proper mounting (see "Electrical Characteristics", Note 4).
- Code: **TR** = 3,000 pieces in tape on a 178mm reel.
SP = 50 pieces on tape in a plastic box.
TR1 = 15,000 pieces in tape on a 330mm reel.

Contact Bussmann if other packaging quantities are required.



Carrier Dimensions - mm

W	8.0 + 0.3 / -0.1
F	3.5 ± 0.05
E	1.75 ± 0.1
P ₂	2.0 ± 0.05
P ₀	4.0 ± 0.1
P ₁	4.0 ± 0.1
A ₀	1.73 ± 0.2
B ₀	3.56 ± 0.2
D ₀	1.5 + 0.1 / -0.0