

Type JAE

Type JAE micro fuse is designed for circuit protection against excessive current in portable electronic equipment, electric circuit around battery, etc. because the demand for high capacity batteries is increasing. Wire material is adopted for fuse element, and the performance against rush current is increased in spite of compact design. Also, the ecology design of Type JAE is environmentally friendly because of complete lead-free.

FEATURES

1. Our original construction design has excellent fusing and cutting characteristics.
2. Especially, performance against rush current is excellent since wire material is used for fuse element.
3. Surface temperature rise is 75°C or less when applying rated current for fusing. This gives less influence to the peripheral units.
4. Resistance to soldering heat : Reflow or flow soldering 10 seconds at 260°C
5. Our original terminal construction makes almost no occurrence of Tombstone phenomenon.
6. Small size of 3216 (3.2 × 1.6 × 1.4 mm)
7. Suitable for automatic mounting
8. Precise dimensions allows high-density mounting and symmetrical construction of terminals provide "Self-Alignment".
9. Complete lead-free

RATING

Item	Rating
Category Temperature Range	-40 ~+125°C
Rated Current	0.4-0.5-0.63-0.8-1.0-1.25-1.6-2.0-2.5-3.15A
Rated Voltage	24VDC
Voltage Drop	Refer to CATALOG NUMBERS AND RATING
Insulation Resistance (between terminals and case)	1000 MΩ or more
Fusing Characteristics	Fusing within 2 minute if the current is 250% of rated current.
Clearing Characteristics	Breaking voltage : 24 V
	Breaking current : 50 A

ORDERING INFORMATION

Type	Code	RV	Code	Rated current	Code	Rated current	Code	Package type	Code	Case size
JAE	2402	24V	401	0.4 A	132	1.25A	NA	φ180 Reel	52	3.2×1.6
			501	0.5 A	162	1.6 A				
			631	0.63A	202	2.0 A				
			801	0.8 A	252	2.5 A				
			102	1.0 A	322	3.15A				

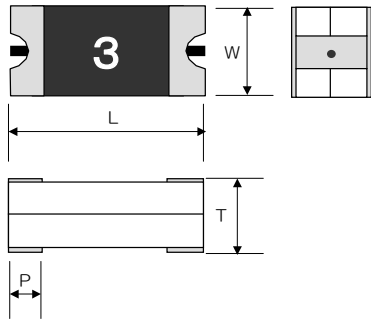
CATALOG NUMBERS AND RATING

November, 2010

Catalog number	Case size	Rated current A	Internal resistance mΩ (Typical)	Voltage drop mV (Max.)	Rated voltage VDC	Breaking current A
JAE 2402 401 □□52	3.2×1.6	0.4	310	220	24	50
JAE 2402 501 □□52	3.2×1.6	0.5	240	200		
JAE 2402 631 □□52	3.2×1.6	0.63	190	150		
JAE 2402 801 □□52	3.2×1.6	0.8	145	150		
JAE 2402 102 □□52	3.2×1.6	1.0	118	150		
JAE 2402 132 □□52	3.2×1.6	1.25	93	150		
JAE 2402 162 □□52	3.2×1.6	1.6	70	150		
JAE 2402 202 □□52	3.2×1.6	2.0	54	150		
JAE 2402 252 □□52	3.2×1.6	2.5	43	150		
JAE 2402 322 □□52	3.2×1.6	3.15	34	150		

For the taping type, the packing code "NA" will be entered in □□.
Catalog numbers are approved by UL and cUL. (File No.E170721)

DIMENSIONS



Main body : Glass epoxy
Terminal : Tin plating

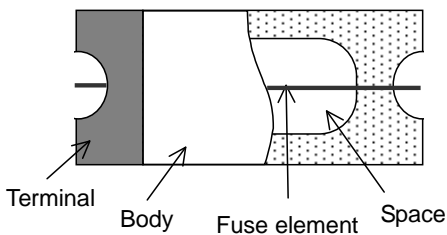
(mm)

Case size	Case code	L	W	T	P
3216	52	3.2 ±0.2	1.6 ±0.2	1.4 ±0.2	0.6 ±0.2

MARKING

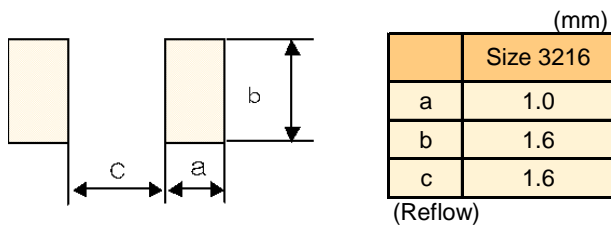
Code	Rated current	Code	Rated current
S	: 0.40A	W	: 1.25A
T	: 0.50A	X	: 1.60A
U	: 0.63A	2	: 2.00A
V	: 0.80A	Y	: 2.50A
1	: 1.00A	3	: 3.15A

CONSTRUCTION

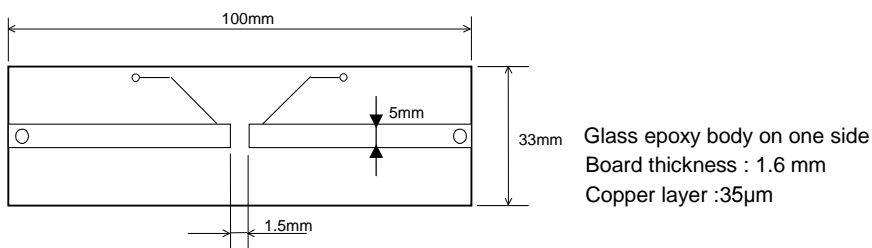


Name	Material, standard, and treatment
Fuse element	Lead-free alloy
Space	—
Terminal	Tin plating
Body	Glass epoxy

RECOMMENDED PAD DIMENSIONS



STANDARD TEST BODY



PERFORMANCE

No.	Item	Performance	Test method
1	Temperature rise	Temperature rise shall not exceed 75°C.	Apply rated current.
2	Current-carrying capacity	Shall not open within 1 hour.	Apply 100% of rated current.
3	Clearing characteristics	Arc shall not be continued. Marking shall be legible.	Breaking voltage : 24V Breaking current : 50 A
4	Voltage drop	Voltage drop is below the value specified in CATALOG NUMBERS AND RATING.	Apply rated current.
5	Fusing characteristics	Fusing within 2 min.	Apply 250% of rated current. (Ambient temperature : 10 ~ 30°C)
6	Insulation resistance	1000 MΩ or more	Insulation resistance between terminals and case
7	Electrode strength (Bending)	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Board supporting width : 90 mm Bending speed : Approx. 0.5 mm/sec. Duration : 5 sec. Bending : 3 mm
8	Shear test	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Applied force : 20 N (2.04 kgf) Duration : 10 sec. Tool : R0.5 Direction of the press : side face
9	Substrate bending test	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Supporting dimension : 1.6 mm Applied force : 20 N (2.04 kgf) Duration : 10 sec. Tool : R0.5 Direction of the press : thickness direction of product
10	Solderability (Solder Wetting time)	Solder Wetting time : within 3sec.	Solder : Sn-3Ag-0.5Cu Temperature : 245 \pm 3°C meniscograph method
			Solder : JISZ3282 H60A, H60S, H63A Temperature : 230 \pm 2°C meniscograph method
11	Solderability (new uniform coating of solder)	The dipping surface of the terminals shall be covered more than 95% with new solder.	Solder : Sn-3Ag-0.5Cu Temperature : 245 \pm 3°C Dipping : 3 sec.
			Solder : JISZ3282 H60A, H60S, H63A Temperature : 230 \pm 2°C Dipping : 3 sec.
12	Resistance to soldering heat	Marking shall be legible. No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Dipping (1 cycle) Preconditioning : 100 ~ 150°C, 30 \pm 5 sec. Temperature : 260 \pm 3°C, 5 $\frac{1}{2}$ sec. Reflow soldering (2 cycles) Preconditioning : 150~180°C, 90 \pm 30 sec. Peak : 250 $\frac{15}{10}$ °C Holding : 230°C or higher, 30 \pm 10 sec. Cooling : 3 ~ 6°C/sec or faster Manual soldering Temperature : 350 \pm 10°C Duration : 2 ~ 3 sec Measure after 1 hour left under room temperature and humidity.
13	Solvent resistance	Marking shall be legible. No mechanical damage. No significant irregularity in the appearance.	Dipping rinse Solvent : Isopropyl alcohol Duration : 90 sec.
14	Vibration	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Frequency range : 10 ~ 55 ~ 10 Hz/min Vibration amplitude : 1.5 mm Duration : 2 hours in each of XYZ directions (total : 6 hours)
15	Shock	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Peak value : 490 m/s ² (50G) Duration : 11 m sec. 6 aspects \times 3 times (total : 18 times)
16	Thermal shock	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	-55 \pm 3°C : 30 min. Room temperature : 2 ~ 3 min or less 125 \pm 2°C : 30 min. Room temperature : 2 ~ 3 min or less Repeat above step for 10 cycles
17	Moisture resistance	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Temperature : 85 \pm 3°C Humidity : 85 \pm 5% RH Duration : 1000 hours
18	Load life	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Temperature : 85 \pm 2°C Applied current : Rated current \times 100% Duration : 1000 hours
19	Moisture resistance load	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Temperature : 85 \pm 2°C Humidity : 85 \pm 5% RH Applied voltage : rated current \times 100% Duration : 1000 h
20	Stability	No mechanical damage. Resistance change after the test shall be within $\pm 20\%$.	Temperature : 125 \pm 2°C Duration : 1000 hours

