

MINIATURE BLADE TYPE ELECTRICAL FUSES

Foreword—This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. Scope—The fuses shown in Figure 1 are for use in motor vehicles, boats, and trailers to protect electrical wiring and equipment. This SAE Standard is for the construction shown and is not intended to restrict the design and use of other configurations and materials capable of meeting the vehicle requirements.

2. References

2.1 Applicable Publications

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J726—Air Cleaner Test Code

SAE J1034—Engine Coolant Concentrate—Ethylene-Glycol Type

2.1.2 ASTM PUBLICATIONS—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 117—Method of Salt Spray (Fog) Testing

3. Definitions

3.1 Fuse—A device designed to interrupt the electrical circuit when subjected to overcurrents. This action is to be nonreversible, and the fuse is intended to be replaced after the circuit malfunction has been corrected.

4. Part 1—Design Parameters

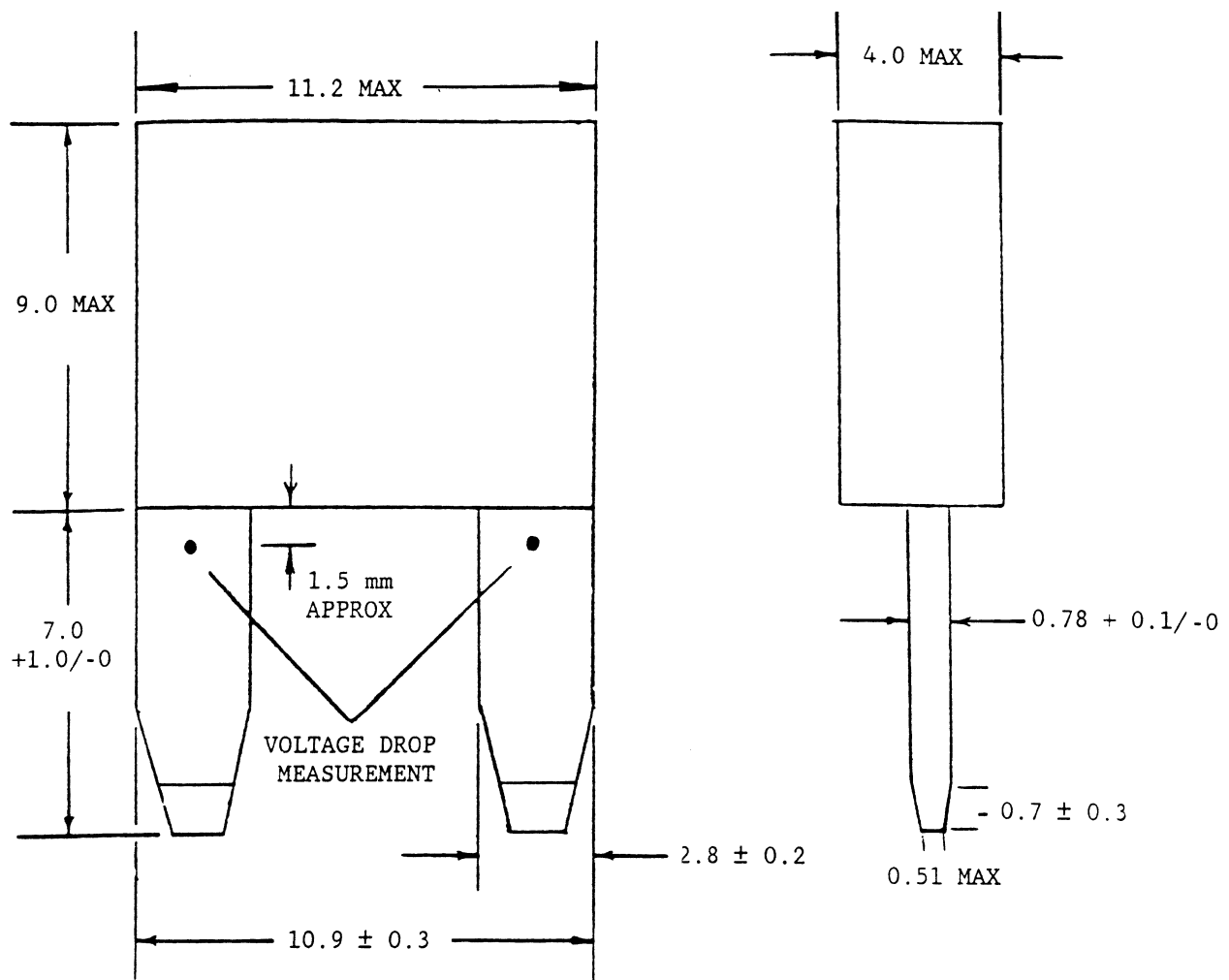
4.1 Materials—The fuses shall have nonconductive bodies capable of withstanding vehicle environmental conditions as set forth in this document. Terminals shall have a suitable finish which will assure corrosion protection and satisfactory mechanical and electrical properties.

4.2 Construction—The fuse shall consist of a terminal and element combination securely attached to a nonconductive fuse body. Fuse terminals shall be exposed through the top portion of the fuse body to allow for inspection of the electrical continuity of the fuse while it is engaged in a fuseblock or fuseholder. Fuse elements shall be visible through the body. Typical overall dimensions are shown in Figure 1.

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NOTE: ALL DIMENSIONS IN MILLIMETERS

FIGURE 1—OVERALL FUSE DIMENSIONS

- 4.3 Marking (Initially and After Environmental Exposure)**—Fuses shall be marked on the fuse body with the amperage, voltage rating, and manufacturer's name or trademark. In addition, the fuses shall be color coded as shown in Table 1. Markings shall be legible at the conclusion of all tests set forth in this document.

**TABLE 1—PREFERRED AMPERE RATINGS AND
FUSE COLOR CODE**

Ampere Rating	Color
2	Grey
3	Violet
4	Pink
5	Tan
7-1/2	Brown
10	Red
15	Blue
20	Yellow
25	Natural (White)
30	Green

5. Part 2—Performance Requirements

5.1 Ampere Rating—This document covers ampere ratings up to and including 30 A. Preferred ampere ratings are shown in Table 1. These ratings were determined at 24 °C ambient temperature using a test procedure as detailed in 6.1 of this document. The specific ampere capacity of the fuses is a function of the particular electrical system being utilized. To aid in determining the actual capacity change, several factors should be considered by the application engineer.

5.1.1 WIRE—Figure 2B represents the approximate ampere capacity change due to cable sizes other than 5 mm².

5.1.2 TEMPERATURE—Figure 2A represents the approximate capacity change with respect to ambient temperature. The use of fuses in ambient temperature beyond the limits shown is not recommended.

5.1.3 LOADING—It is recommended that the fuses not be loaded above 80% of their rated ampere capacity based on ambient temperatures and the use of cable sizes other than 5 mm². In addition, it is further recommended that actual performance be verified through testing experimentally in the vehicle.

NOTE—The specific ampere capacity of a fuse is a function of the particular electrical system being utilized. To aid in determining the actual capacity change several factors should be considered by the application engineer. These factors include ambient temperature, wire size, insulating material, and connecting clips.

5.2 Voltage Rating—Fuses shall be capable of interrupting at any voltage up to and including 32 V.

5.3 Maximum Voltage Drop—The maximum voltage drop (in millivolts) at rated current across the fuse only shall be as shown in Table 2.

5.4 Performance—Tests shall be conducted within a temperature range of 24 °C ± 5, which is considered room ambient within this specification.

5.4.1 AMPERE RATING TESTS—Fuses shall carry 110% of rated current continuously for a minimum of 100 h; shall open in not less than 0.75 s or more than 1800 s at 135% of rated current; shall open in not less than 0.15 s or more than 5 s at 200% of rated current; shall not open in less than 0.080 s or more than 0.50 s at 350% of rated current, and shall open in not less than 0.03 s or more than 0.10 s at 600% of rated current.

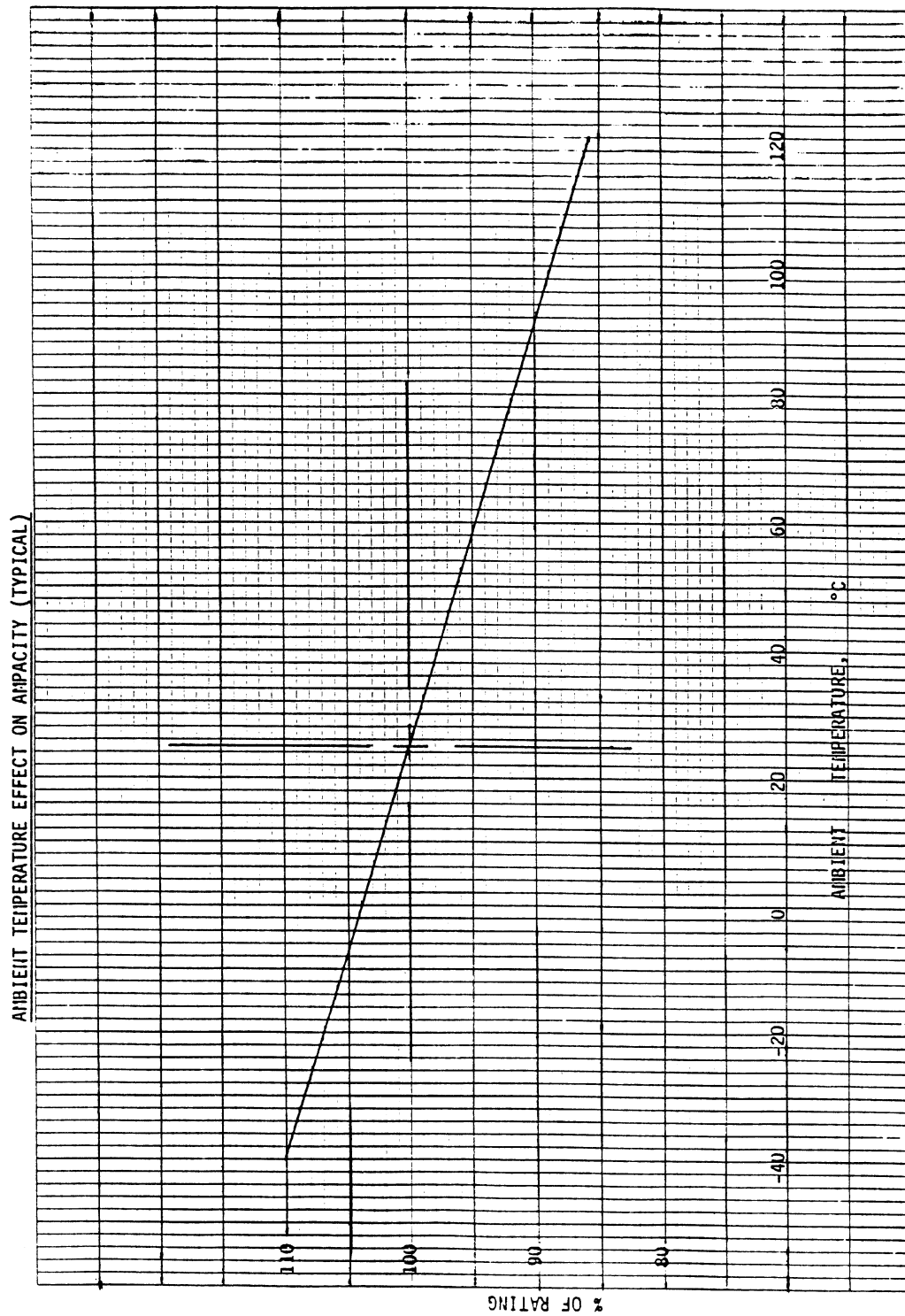


FIGURE 2A—AMBIENT TEMPERATURE EFFECT ON AMPACITY (TYPICAL)