SAE International™

SURFACE VEHICLE STANDARD

SAE J2223-1

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Connections for On-Board Road Vehicle Electrical Wiring Harnesses—Part 1: Single-Pole Connectors—Flat Blade Terminals—Dimensional Characteristics and Specific Requirements

This document is functionally equivalent to ISO 8092-1.

Foreword

SAE J2223 consists of the following parts:

SAE J2223-1—Connections for On-Board Road Vehicle Electrical Wiring Harnesses—Part 1: Single Pole Connectors—Flat Blade Terminals—Dimensional Characteristics and Specific Requirements
SAE J2223-2—Connections for On-Board Road Vehicle Electrical Wiring Harnesses—Part 2: Tests and General Performance Requirements
SAE J2223-3—Connections for On-Board Road Vehicle Electrical Wiring Harnesses—Part 3: Multipole Connectors—Flat Blade Terminals—Dimensional Characteristics and Specific Requirements

1. Scope

This SAE Standard specifies dimensional characteristics of flat blades of single-pole connectors and specific requirements for on-board electrical harnesses of road vehicles, which can be fitted into female connectors such as those given as in Appendix A.

This document applies to connectors designed to be disconnected after mounting in the vehicle in the case of repair and/or maintenance only.

1.1 Rationale

This document has been edited to agree with the update to SAE J2223-2 FEB2005. The previous issue of SAE J2223/2 FEB94 was technically equivalent to ISO 8092-2. The updated version of SAE J2223-2 FEB2005 was revised to list the tests and general performance requirements for connections used for on-board road vehicle electrical wiring harnesses used by major OEM's in the United States. SAE J2223-2 is no longer "technically equivalent." Therefore the beginning of this document has been reworded to state that it "is functionally equivalent to ISO 8092-1." Other minor differences between SAE J2223-1 and ISO 8092-1 remain the same. Editioral corrections were also made to specification numbers and Appendix A.

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2. References

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J2223-2—Connections for On-Board Road Vehicle Electrical Wiring Harnesses—Part 2: Tests and General Performance Requirements

SAE J2223-3-Connections for On-Board Road Vehicle Electrical Wiring Harnesses—Part 3: Multipole Connectors—Flat Blade Terminals—Dimensional Characteristics and Specific Requirements

2.1.2 ISO PUBLICATION

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 8092-1—Single pole connector tabs—Dimensions and specific requirements

3. Definitions

See SAE J2223-2, Section 3. For the purpose of SAE J2223-1, the following definition applies.

3.1 Positive Locking Female Terminal

Female terminal with automatic positive locking and manual unlocking device engaging the blade hole.

4. Dimensional Characteristics

Blades shall conform to dimensions given in Figure 1 and Table 1.

NOTE—Details not specified are left to the manufacturer's choice.

5. Specific Performance Requirements

Blades for single-pole connections shall be in conformity with the general performance requirements of SAE J2223-2, and shall meet the following specific requirements.

NOTE—A blade without a hole requires external means of retention to the mating part.

6. Connection Forces and Disconnection Forces

Single-pole connectors, tested as in SAE J2223-2 (see 5.4.2), shall meet the requirements as in Table 2.

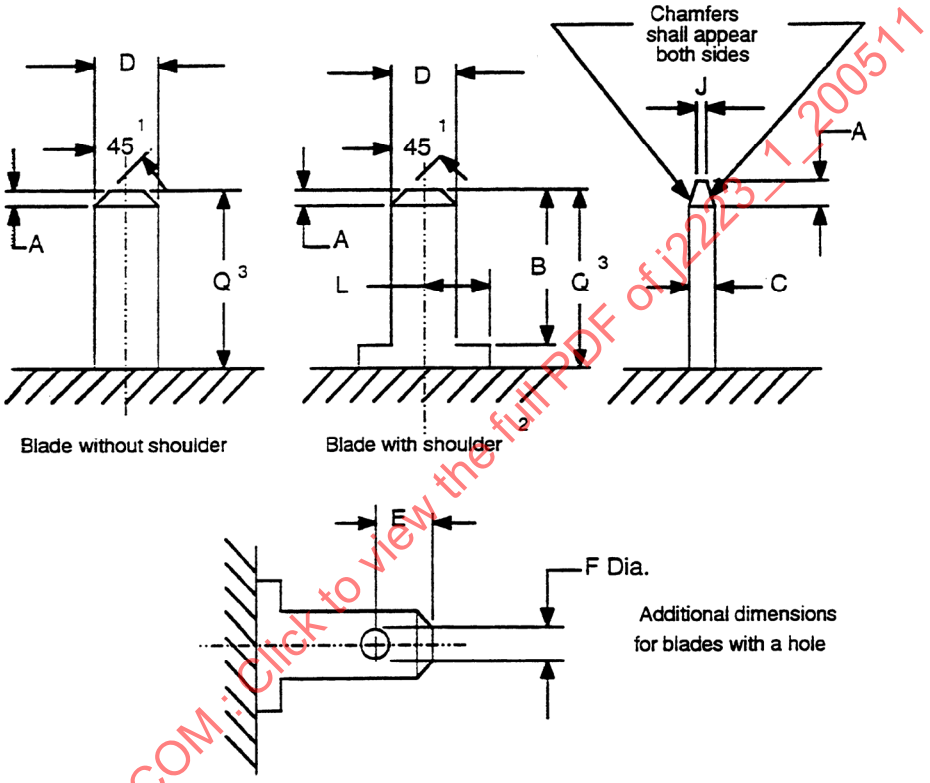
NOTE—Disconnection forces of positive locking connections shall be performed with the locks disengaged.

6.1 Connection Resistance

Single-pole connectors, tested as in SAE J2223-2 (see 5.3.1), shall meet the requirements as in Table 3.

7. Designation

Blades in accordance with this document may be designated as follows in Figure 2.



1. Bevel A x 45° need not be a straight line but shall not be a concave curve if it is within the confines shown; it may be a radius of A.
2. Blades with one shoulder are optional.
3. Functional length of the blade. Retention features of the blade must not be within this length.

NOTE—Q is the blade length required for engaging the female connector (functional area of blade).

FIGURE 1—FLAT BLADE DIMENSIONS

TABLE 1—BLADE DIMENSIONS
Dimensions in millimeters

Dimension	Dimension	Size 2.8 x 0.5[1]	Size 2.8 x 0.8	Size 4.8 x 0.5[1]	Size 4.8 x 0.8	Size 6.3 x 0.8	Size 9.5 x 1.2
D	max	2.9	2.9	4.9	4.9	6.4	9.6
D	min	2.7	2.7	4.7	4.7	6.2	9.4
C	max	0.54	0.84	0.54	0.84	0.84	1.23
C	min	0.47	0.77	0.47	0.77	0.77	1.17
B	max	7.3	7.3	6.5	6.5	8.1	12.5
B	min	7.0	7.0	6.2	6.2	7.8	12.0
Q	max	—	—	—	—	—	—
Q	min	8.1	8.1	8.0	8.0	10.1	14.5
A	max	0.6	0.6	0.9	0.9	1.0	1.3
A	min	0.3	0.3	0.6	0.6	0.5	0.7
J	max	0.3	0.5	0.3	0.5	0.5	0.7
J	min	0.1	0.3	0.1	0.3	0.3	0.5
L	max	2.3	2.3	3.5	3.5	4.7	6.5
L	min	2.0	2.0	3.0	3.0	4.0	5.5
E[2]	max	1.8	1.8	3.4	3.4	4.7	5.5
E[2]	min	1.3	1.3	3.0	3.0	4.0	4.5
F[2]	max	1.3	1.3	1.5	1.5	2.0	2.0
F[2]	min	1.1	1.1	1.3	1.3	1.6	1.7

1. Non-preferred blade thickness.
2. For blades with hole only.

TABLE 2—PERFORMANCE REQUIREMENTS FOR CONNECTION AND DISCONNECTION FORCES OF SINGLE-POLE CONNECTIONS[1][2]

Connection and Disconnection	Force (N) Blade Size 2.8 P	Force (N) Blade Size 2.8 F	Force (N) Blade Size 4.8 P	Force (N) Blade Size 4.8 F	Force (N) Blade Size 6.3 P	Force (N) Blade Size 6.3 F	Force (N) Blade Size 9.5 F
1st connection force, max	27	53	30	67	45	80	100
1st disconnection force, max	27	53	30	67	45	80	100
10th disconnection force, min	4	6	7	15	9	18	30

1. P refers to positive locking female terminals.
2. F refers to female terminals (without positive locking), e.g., detents or nibs.

TABLE 3—MAXIMUM PERMITTED CONNECTION RESISTANCES

Connection Resistances Initial Permitted	Connection Resistances After Endurance	Connection Resistances After Endurance
	1[1]	2[1]
milliohms	milliohms	% of initial measured value
maximum	maximum	maximum
5	10	150

1. 1 and/or 2 to be selected by supplier and user.

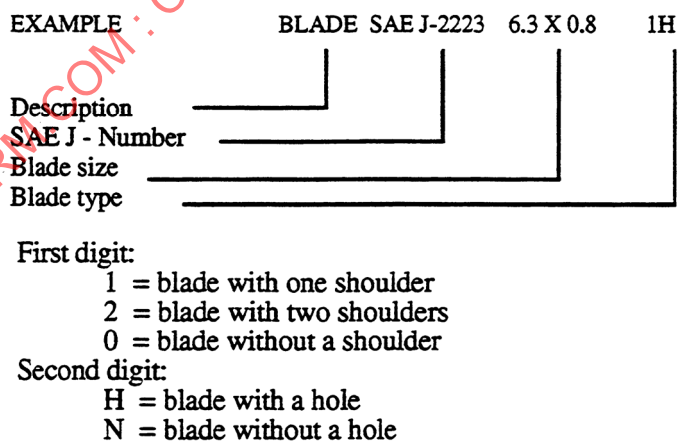


FIGURE 2—BLADE DESIGNATION