

CONFIRMED  
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# Electronic parts of assessed quality —

Silicon coaxial resistive switching  
diode

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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**Summary of pages**

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

**Amendments issued since publication**

| Amd. No. | Date | Comments |
|----------|------|----------|
|          |      |          |
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1. Specification CV 7534 Issue 1 dated 7 May 1964 with its existing amendments which are reproduced below is hereby adopted as BS 9300 C534.
2. Devices inspected, released and supplied to this specification shall be marked CV 7534 and where applicable, with the letters KB.
3. The references to "Military specification". "Commercial equivalents". "Reliability assurance provisions" or requirements and "Preparation for delivery" shall be disregarded.
4. In the Groups A, B and C inspection tables the references in the "K1007/NATO Ref" column shall be superseded by the appropriate reference given in BS 9300 Appendix C (Table 1 to Table 5 inclusive).
5. Additional requirements not covered by BS 9300 Appendix C are:
  - Page 2.* Delete "Joint Services Catalogue Number" and substitute "NATO stock number";  
Delete "5960" and substitute "5961".
  - Page 4.* Group B. Subgroup 2. Moisture resistance. The test shall be performed at temperature =  $35 \pm 2$  °C and at AQL 6.5 %.
  - Page 4.* Group B. Subgroup 7. The requirement for high temperature life shall not be deleted but shall be performed as specified.  
Group B. Subgroup 8. The operation life test shall be performed at inspection level S-4, AQL 6.5 %, for 160 hours under the conditions specified.  
Add Group C. Subgroup 5, Operation life, as in Group B, subgroup 8, but at inspection level S-3 for 2 000 hours.
  - Page 6.* Group D. Delete all requirements.
6. Published amendments (consolidated).
  - Page 3.* Group A. Subgroup 4.  
Minimum v.s.w.r.
    - Test (1) position. Amend max. limit to read 1.99.
    - Test (2) position. Amend max. limit to read 1.19.

# Military specification

## CV 7534

### Semi-conductor devices, diode

**Description:** This Specification covers the detail requirements for a Silicon Coaxial Resistive Switching Diode and is in accordance with K1007 except where otherwise stated.

**Mechanical Dimensions and Outline:** See Page 8 (Also Note A)

**Polarity:** Red mark on body indicates positive polarity of pin for forward bias.

#### Absolute Maximum Ratings:

| Device  | Rating | $T_{amb}$ | $T_{stg}$ | $V_R$ | $I_R$ | $I_F$ | $P_{tot}$ | $P_{pk}$ | Shock | Vib |
|---------|--------|-----------|-----------|-------|-------|-------|-----------|----------|-------|-----|
|         | Unit   | °C        | °C        | V     | mA    | mA    | W         | W        | g     | g   |
| CV 7534 | Min.   | —         | — 55      | —     | —     | —     | —         | —        | —     | —   |
|         | Max.   | 100       | 120       | — 50  | — 5   | 75    | 1         | 50       | 100   | 10  |
| Note    |        |           |           |       |       |       | B         | C        |       |     |

- NOTES: A. When plugged into a holder contact is made to the open face shown in plane AA of the diode outline drawing Page 8.
- B. The maximum value quoted is the total power dissipation inclusive of that contributed by the d.c. switching.
- C. The quoted value is the maximum value of incident power which may be applied to the diode when the mismatch in the coaxial mount presents a v.s.w.r. greater than 10 : 1 and when the r.f. pulse width does not exceed 10  $\mu$ secs. It is recommended that a small negative bias of about 5 volts be applied to the diode when it is used to switch power values which approach the maximum in order to reduce the effect of possible admittance changes. Where the mismatch provides a v.s.w.r. less than 10 : 1 the maximum power value or pulse width must be reduced, for example, should the diode present a matched condition the pulse width must not exceed 4  $\mu$ secs for an incident power level of 50 watts.

#### Primary Electrical Characteristics:—

| Characteristic | $I_F$ | $V_R$ | $I_R$ | $V_F$ | Freq. Range | $t_p$   | v.s.w.r. | v.s.w.r. |
|----------------|-------|-------|-------|-------|-------------|---------|----------|----------|
| Unit           | mA    | V     | mA    | V     | Mc/s        | $\mu$ s | Ratio    | Ratio    |
| Min            | —     | —     | —     | —     | 1 000       | —       | —        | —        |
| Max            | 75    | — 50  | — 5   | 1.2   | 11,000      | 0.5     | 0.1      | 0.1      |
| Note           |       |       |       | D.    | E.          | F.      | G,H      | G,J      |

- NOTE D. At 50 mA. (A typical value at 50 mA forward current is 0.85 volts.)
- E. The actual frequency band over which the diode operates will depend on the design of the mount used. With a suitable mount, switching discrimination greater than 20 dB may be obtained. Typical operating characteristics are given on page 7.
- F. The switching time quoted is that obtained when switching over 15 dB range with diode set up in a suitable holder.
- G. As measured in a coaxial-type holder previously adjusted for unity v.s.w.r. when terminated by a matched 67 Ohms coaxial load.
- H. At zero bias.
- J. At 50 mA  $I_F$ .

#### Reliability Assurance Requirements:— Under discussion

#### Requirements

**Marking** The device shall be marked first with the CV number and a polarity marking. The date code shall appear on multiple packs of 100 or more and the manufacturers code on individual packs. Additional marking as K1007, Issue 3, Section B, 1.3.4 shall be on the packing.