This Specification contains a small amount of data which may not be legible. It has been acquired directly from the manufacturer or standards organization and Technical Indexes/IHS have not been able to obtain a better copy.

If the quality of this Specification is not fit for your intended purpose, please contact the relevant manufacturer or standards organization to clarify the details you require.

Coca-Cola Coca-Cola Coke Coke Coke Coca-Cola Cola Coca-Cola Coca-
AVA Documents
Document Sharing Hub
Full document details: CECC 50009-035 ISSUE 1 0

BRITISH STANDARDS INSTITUTION 2 PARK STREET, LONDON W1A 2BS	page: 1 of: 11	BS CECC 50 009-035 CECC 50 009-035 Issue: 1 Date: JUNE 1982
Specification avaliable from: MULLARD LIMITED, Mullard House, Torrington Place, London WC1E 7HD		
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH BS CECC 50 000:1981		

DETAIL SPECIFICATION FOR CASE-RATED RECTIFIER DIODES

Type number(s) : 1N3899 to 1N3903 and 1N3909 to 1N3913

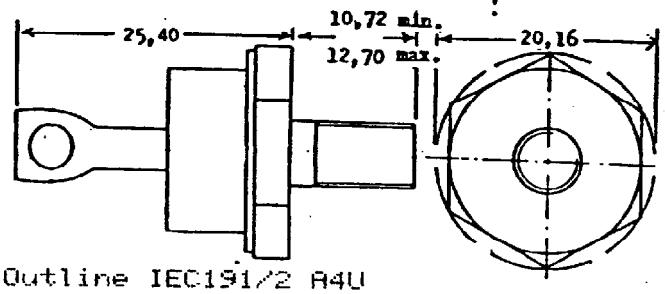
Construction

Semiconductor material : Silicon

Encapsulation material : Glass to metal hermetically sealed

1. MECHANICAL DESCRIPTION

Third angle projection



Outline IEC191/2 A4U

Marking information see page 3

All dimensions in millimetres

2. ELECTRICAL APPLICATION

FAST SOFT RECOVERY CASE RATED RECTIFIER DIODES.
THE 1N3899 SERIES UPTO 20A
THE 1N3909 SERIES UPTO 30A
BOTH AT 50/100/200/300 AND 400 VOLTS
NORMAL AND REVERSE POLARITY

3. ASSESSMENT LEVELS

F AND L

4. LIMITING VALUES (Absolute Maximum System)

These apply over the operating temperature range, unless otherwise stated.

4.1 Voltage :

4.1.1 Crest working reverse voltage V_{RWM}

4.1.2 Repetitive peak reverse voltage V_{RRM}

4.1.3 Non-repetitive peak reverse voltage V_{RSM}

4.1.4 Continuous (DC) reverse voltage V_R

See Table 1

TABLE 1- VOLTAGE RATINGS

Type number	V_{RSM}	V_R V_{RRM} and V_{RWM}
1N3899 and 1N3909	75	50
1N3900 and 1N3910	200	100
1N3901 and 1N3911	300	200
1N3902 and 1N3912	400	300
1N3903 and 1N3913	500	400

Note: Normal polarity (stud cathode)
Reverse polarity (stud anode)

Refer to Qualified Products List PD9002 and/or CECC 00200 for details of manufacturers approved to this specification.

Coca-Cola Coke Coke Coke Coke Coke Cola Coca-Cola
AVA Documents Document Sharing Hub
Full document details: CECC 50009-035 ISSUE 1 0

4.2 Current:

4.2.1 Forward current at the breakpoint temperature (see figure 1) sinusoidal T_{case}=100°C ... $I_{F(AV)max}$ 20A / 30A *

4.2.2 Repetitive peak forward ..... I_{FRM} 100A / 125A *

4.2.3 Contiuous (direct) forward current ..... I_F 30A / 45A *

4.2.4 Surge (non-repetitive) forward current:
1) With and without reapplication of revese voltage ..... I_{FSM} 200A / 275A *

4.3 Temperature

4.3.1 Case temperature
Maximum value for which the voltage ratings are specified in 4.1 ..... $T_{CASE\ max}$ 150°C

4.3.2 Virtual junction temperature
Minimum and maximum values of the junction temperature for which the voltage and current ratings in 4.1 and 4.2 apply ..... $T_{(vj)min}$ -55°C
max 150°C

4.3.3 Storage temperature ..... T_{stg} min -55°C
max 175°C

Mechanical
Maximum permissible torque on nut 2.5Nm
Minimum permissible torque for good thermal contact 1.7Nm

5. ELECTRICAL CHARACTERISTICS
The following characteristics are given at T_{case} = 25°C,unless otherwise stated.

5.1 Forward voltage :

5.1.1 Maximum peak forward voltage at I_{FM} = 60A / 100A * corresponding to $I_{F(AV)}$ = 20A / 30A * ..... V_{FM} 1.8V

5.2 Reverse current :
Maximum value of the peak reverse current I_{RM} at the rated repetitive reverse voltage V_{RRM}:

5.2.1 Without forward dissipation ..... I_{RM1} 100uA

5.2.2 At T_{case}=150°C without forward dissipation I_{RM2} 20mA

5.3 Total power dissipation :
Maximum total power dissipation graphs as a function of the mean forward current and conduction angle ..... P_{tot} See fig 1 and 2 / 3 and 4 *

* Denotes 1N3909 series and unless otherwise stated ratings apply to both series.

Documents
Document Sharing Hub
Full document details: CECC 50009-035 ISSUE 1 0

5.4 Recovery :

5.4.1 Recovered charge
Maximum value when switched from
I_F=2A to V_R=30V $-dI_F/dt$=20A/us ..... Q_r 250nC

5.4.2 Reverse recovery current
Maximum value when switched from
I_F=1A to V_R=30V $-dI_F/dt$=35A/us ..... I_{rr} 200ns

5.5 Thermal resistance :
Junction to reference point,maximum value
for d.c. current ..... R_{th} 1.5°C/W
1.0°C/W *

7.0 ORDERING INFORMATION
The following minimum information is necessary to order a specific device, unless otherwise specified :
- precise type number
- CECC reference of detail specification with issue number and/or date when relevant
- level of quality assessment as defined in appendix II A of CECC 50 000, and,if required, screening sequence as defined in appendix VI of CECC 50 000
- any other particulars.

8. TEST CONDITIONS AND INSPECTION REQUIREMENTS
All clause references are made with respect to CECC 50 000, unless otherwise stated. samples submitted to tests marked(D) shall not be accepted for release (see clause 3.5.6 of CECC 50 000). All tests shall be made at T_{case} = 25 ± 5°C unless otherwise stated. Marking must withstand all tests of this specification which might change or damage it and must remain legible.

* Denotes 1N3909 series and unless otherwise stated ratings apply to both series.

Documents
Document Sharing Hub
Full document details: CECC 50009-035 ISSUE 1 0