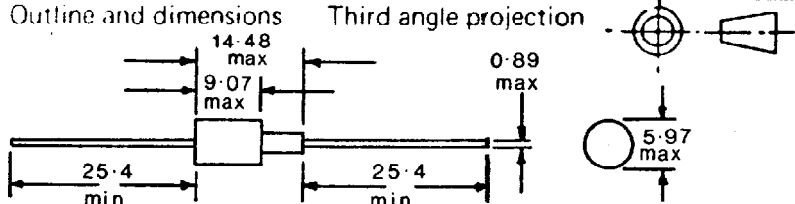


BRITISH STANDARDS INSTITUTION 2, PARK STREET, LONDON, W1A 2BS	BS CECC 50 005 012 Issue 1 September 1986 Page 1
Specification available from:- as shown in PD9002, CECC 00200 and Semitron Cricklade Limited Cricklade, Swindon Wilts Tel : 0793 751151 telex 44848	
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH BS CECC 50 000 : 1981	MANUFACTURER'S TYPE NUMBER 1N5907 1N5629 to 1N5665 1N5629A to 1N5665A see PD9002 & CECC 00200 For ordering information see Clause 7
Outline and dimensions Third angle projection  All dimensions are in mm Components may be supplied in bandoliered form to IEC286-1 : 1980 min. cropped length 21mm Outline to JEDEC DO13 BS3934 S0-101 For outline detail see appendix 1 Cathode connected to case Marking information see page 3	TRANSIENT ABSORPTION VOLTAGE REGULATOR DIODE AMBIENT RATED Silicon transient absorption zener diode Case: DO13 welded hermetically sealed metal and glass. Assessment Level E + additional tests

4 LIMITING VALUES (absolute maximum system)

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

Thermal ratings

		MIN	MAX	UNITS
4.1	T_{amb} Operating temperature range	-65	175	$^{\circ}C$
4.2	T_{stg} Storage temperature range	-65	175	$^{\circ}C$

4.3.1 Power Rating

P_{tot}	Reverse power dissipation at $T_{amb} = 25^{\circ}C$ For derating curve of reverse power dissipation against T_{amb} see fig. 1	1	W
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4.3.2	P_{RSM} Non-repetitive peak reverse power For curve of exponential current pulse ($t_p = 1ms$) see fig. 2	1500	W
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4.4	I_F Repetitive peak forward current	1	A
	I_{FRM} Repetitive peak forward current $t_p = 10ms$ $\frac{1}{2}$ sine wave, duty cycle 4 pulses per minute (max)	80	A

Refer to Qualified Products List PD 9002 and/or CECC 00200 for details of manufacturers approved to this specification.



Documents

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4.5.1 Maximum continuous reverse current I_Z

		Nominal V_Z	I_Z max at $T_{amb} = 25^\circ\text{C}$
		Volts	mA
1N5907		6.0	167
1N5629	1N5629A	6.8	147
1N5630	1N5630A	7.5	133
1N5631	1N5631A	8.2	122
1N5632	1N5632A	9.1	110
1N5633	1N5633A	10	100
1N5634	1N5634A	11	90.9
1N5635	1N5635A	12	83.3
1N5636	1N5636A	13	76.9
1N5637	1N5637A	15	66.7
1N5638	1N5638A	16	62.5
1N5639	1N5639A	18	55.6
1N5640	1N5640A	20	50.0
1N5641	1N5641A	22	45.5
1N5642	1N5642A	24	41.7
1N5643	1N5643A	27	37.0
1N5644	1N5644A	30	33.3
1N5645	1N5645A	33	30.3
1N5646	1N5646A	36	27.8
1N5647	1N5647A	39	25.6
1N5648	1N5648A	43	23.3

Maximum continuous reverse current I_Z (cont.)

		Nominal V_Z	I_Z max at $T_{amb} = 25^\circ C$
		Volts	mA
1N5644	1N5644A	30	33.3
1N5645	1N5645A	33	30.3
1N5646	1N5646A	36	27.8
1N5647	1N5647A	39	25.6
1N5648	1N5648A	43	23.3
1N5649	1N5649A	47	21.3
1N5650	1N5650A	51	19.6
1N5651	1N5651A	56	17.9
1N5652	1N5652A	62	16.1
1N5653	1N5653A	68	14.7
1N5654	1N5654A	75	13.3
1N5655	1N5655A	82	12.2
1N5656	1N5656A	91	11.0
1N5657	1N5657A	100	10.0
1N5658	1N5658A	110	9.09
1N5659	1N5659A	120	8.33
1N5660	1N5660A	130	7.69
1N5661	1N5661A	150	6.67
1N5662	1N5662A	160	6.25
1N5663	1N5663A	170	5.88
1N5664	1N5664A	180	5.56
1N5665	1N5665A	200	5.00

5.0 CHARACTERISTICS AT $T_{amb} = 25^{\circ}C$ unless otherwise stated

5.1	V_Z	Nom. working voltage at I_Z	= Tbl 1 col 5	Tbl 1 col 2
5.1	V_Z	Min. working voltage at I_Z	= Tbl 1 col 5	Tbl 1 col 3
5.1	V_Z	Max. working voltage at I_Z	= Tbl 1 col 5	Tbl 1 col 4
5.2	I_{R1}	Max. reverse current at V_R	= Tbl 1 col 5	Tbl 1 col 7
5.3	I_{R2}	Max. reverse current at $T_{amb} = 100^{\circ}C$ & V_R	= Tbl 1 col 6	Tbl 1 col 8
	V_{CL}	Max. clamping voltage at I_{ZSM}	= Tbl 1 col 10	Tbl 1 col 9
5.4	r_{ZT}	Max. differential resistance at I_Z	= Tbl 1 col 5	Tbl 1 col 11
5.7	αV_Z	Min. temperature coefficient of V_Z over temperature range T_{amb} $= 25^{\circ}C$ to $T_{amb} = 75^{\circ}C$ at I_Z	= Tbl 1 col 5	Tbl 1 col 12
5.7	αV_Z	Max. temperature coefficient of V_Z over temperature range T_{amb} $= 25^{\circ}C$ to $T_{amb} = 75^{\circ}C$ at I_Z	= Tbl 1 col 5	Tbl 1 col 13
5.9	C_{tot}	Max. capacitance at V_R	=	Tbl 1 col 14
	V_{FM}	Max. peak forward voltage at $I_F = 1A$	$V_{FM} = 2.4v$ maximum	

Marking and Terminal Identification

Each diode shall bear the following markings:

- (a) The cathode terminal shall be identified by a band round the cathode end of the body;
- (b) The body shall be marked with the type number, Manufacturer's logo and date code;

Each package containing one or more diodes shall be marked with:

- (c) Diode type number;
- (d) Factory identification code : SEQ;
- (e) Manufacturer's batch code;
- (f) The number of this specification;
- (g) Mark of conformity, unless a Certificate of Conformity is used.
- (h) The quantity of diodes contained in the package.

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Related Documents

- CECC 00 006 : Environmental test procedures.
- CECC 00 007 : Sampling plans and procedures for inspection by attributes.
- CECC 00 107 : Quality Assessment Procedures.
- CECC 50 000 : Harmonized system of quality assessment for electronic components.
- PD 9002 : Qualified Products list for electronic components of assessed quality.
- CECC 00200 : Qualified Products List

7. Ordering Information

Orders for diodes to this specification shall contain the following information:

- (a) Diode type number;
- (b) Quantity required;
- (c) Conformity to specification BS CECC 50 005 012 Issue 1.
If required screening sequence from Appendix VI of BS CECC 50 000.

8. Test Conditions and Quality Assessment

All references to paragraphs made in this specification refer to CECC 50 000 unless otherwise stated.

The test conditions are given in Groups A, B & C

The marking of diodes must withstand all tests which could cause change or damage, and must remain legible.

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Table No. 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14
TYPE	V _Z	V _Z	V _Z	I _Z	V _R	I _{R1}	I _{R2}	V _{CL}	I _{ZSM}	r _{ZT}	cV _Z	cV _Z	C _{tot}
No.	nom	min	max			max	max	max		max	min	max	
	v	v	v	mA	v	uA	uA	v	A	ohm	%/°C	%/°C	pf
1N5907	6.5	6.00	7.00	1	5.00	300	10000	8.5	120	1500	.003	.057	7000
1N5629A	6.8	6.45	7.14	10	5.80	1000	10000	10.5	143	500	.003	.057	6000
1N5630A	7.5	7.13	7.88	10	6.40	500	5000	11.3	132	500	.007	.061	5000
1N5631A	8.2	7.79	8.61	10	7.02	200	2000	12.1	124	500	.010	.065	4000
1N5632A	9.1	8.65	9.55	1	7.78	50	500	13.4	112	500	.015	.068	3700
1N5633A	10	9.50	10.5	1	8.55	10	100	14.5	103	500	.015	.073	3400
1N5634A	11	10.5	11.6	1	9.40	5	50	15.6	96	700	.020	.075	3100
1N5635A	12	11.4	12.6	1	10.2	5	50	16.7	90	700	.020	.078	2800
1N5636A	13	12.4	13.7	1	11.1	5	50	18.2	82	700	.030	.081	2500
1N5637A	15	14.3	15.8	1	12.8	5	50	21.2	71	700	.030	.084	2200
1N5638A	16	15.2	16.8	1	13.6	5	50	22.5	67	700	.030	.086	1900
1N5639A	18	17.1	18.9	1	15.3	5	50	25.2	59.5	700	.030	.088	1700
1N5640A	20	19.0	21.0	1	17.1	5	50	27.7	54	700	.035	.090	1500
1N5641A	22	20.9	23.1	1	18.8	5	50	30.6	49	800	.035	.092	1300
1N5642A	24	22.8	25.2	1	20.5	5	50	33.2	45	800	.035	.094	1100
1N5643A	27	25.7	28.4	1	23.1	5	50	37.5	40	800	.040	.096	950
1N5644A	30	28.5	31.5	1	25.6	5	50	41.4	36	800	.040	.097	850
1N5645A	33	31.4	34.7	1	28.2	5	50	45.7	33	800	.045	.098	750
1N5646A	36	34.2	37.8	1	30.8	5	50	49.9	30	800	.045	.099	650

Table No. 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14
TYPE	V _Z	V _Z	V _Z	I _Z	V _R	I _{R1}	I _{R2}	V _{CL}	I _{ZSM}	r _{ZT}	cV _Z	cV _Z	C _{tot}
No.	nom	min	max			max	max	max		max	min	max	
	v	v	v	mA	v	uA	uA	v	A	ohm	%/°C	%/°C	pf
1N5647A	39	37.1	41.0	1	33.3	5	50	53.9	28	900	.045	.100	580
1N5648A	43	40.9	45.2	1	36.8	5	50	59.3	25.3	900	0.50	.101	510
1N5649A	47	44.7	49.4	1	40.2	5	50	64.8	23.2	900	.050	.101	450
1N5650A	51	48.5	53.6	1	43.6	5	50	70.1	21.4	900	.050	.102	400
1N5651A	56	53.2	58.8	1	47.8	5	50	77.0	19.5	900	.050	.103	350
1N5652A	62	58.9	65.1	1	53.0	5	50	85.0	17.7	900	.055	.104	300
1N5653A	68	64.6	71.4	1	58.1	5	50	92.0	16.3	1000	.055	.104	270
1N5654A	75	71.3	78.8	1	64.1	5	50	103	14.6	1000	.055	.105	240
1N5655A	82	77.9	86.1	1	70.1	5	50	113	13.3	1000	.055	.105	210
1N5656A	91	86.5	95.5	1	77.8	5	50	125	12.0	1000	.055	.106	190
1N5657A	100	95.0	105	1	85.5	5	50	137	11.0	1000	.055	.106	175
1N5658A	110	105	116	1	94.0	5	50	152	9.9	1000	.060	.107	160
1N5659A	120	114	126	1	102	5	50	165	9.1	1000	.060	.107	145
1N5660A	130	124	137	1	111	5	50	179	8.4	2000	.060	.107	130
1N5661A	150	143	158	1	128	5	50	207	7.2	2000	.060	.107	115
1N5662A	160	152	168	1	136	5	50	219	6.8	2000	.060	.108	100
1N5663A	170	162	179	1	145	5	50	234	6.4	2000	.060	.108	85
1N5664A	180	171	189	1	154	5	50	246	6.1	2000	.060	.108	75
1N5665A	200	190	210	1	171	5	50	274	5.5	2000	.060	.108	65

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Table No. 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14
TYPE	V_Z	V_Z	V_Z	I_Z	V_R	I_{R1}	I_{R2}	V_{CL}	I_{ZSM}	r_{ZT}	cV_Z	cV_Z	C_{tot}
No.	nom	min	max			max	max	max		max	min	max	
	v	v	v	mA	v	uA	uA	v	A	ohm	%/°C	%/°C	pf
1N5629	6.8	6.12	7.48	10	5.50	1000	10000	10.8	139	500	.003	.057	6000
1N5630	7.5	6.75	8.25	10	6.05	500	5000	11.7	128	500	.007	.061	5000
1N5631	8.2	7.38	9.02	10	6.63	200	2000	12.5	120	500	.010	.065	4000
1N5632	9.1	8.19	10.0	1	7.37	50	500	13.8	109	500	.015	.068	3700
1N5633	10	9.00	11.0	1	8.10	10	100	15.0	100	500	.015	.073	3400
1N5634	11	9.90	12.1	1	8.92	5	50	16.2	93	700	.020	.075	3100
1N5635	12	10.8	13.2	1	9.72	5	50	17.3	87	700	.020	.078	2800
1N5636	13	11.7	14.3	1	10.5	5	50	19.0	79	700	.030	.081	2500
1N5637	15	13.5	16.5	1	12.1	5	50	22.0	68	700	.030	.084	2200
1N5638	16	14.4	17.6	1	12.9	5	50	23.5	64	700	.030	.086	1900
1N5639	18	16.2	19.8	1	14.5	5	50	26.5	56.5	700	.030	.088	1700
1N5640	20	18.0	22.0	1	16.2	5	50	29.1	51.5	700	.035	.090	1500
1N5641	22	19.8	24.2	1	17.8	5	50	31.9	47	800	.035	.092	1300
1N5642	24	21.6	26.4	1	19.4	5	50	34.7	43	800	.035	.094	1100
1N5643	27	24.3	29.7	1	21.8	5	50	39.1	38.5	800	.040	.096	950
1N5644	30	27.0	33.0	1	24.3	5	50	43.5	34.5	800	.040	.097	850
1N5645	33	29.7	36.3	1	26.8	5	50	47.7	31.5	800	.045	.098	750
1N5646	36	32.4	39.6	1	29.1	5	50	52.0	29	800	.045	.099	650
1N5647	39	35.1	42.9	1	31.6	5	50	56.4	26.5	900	.045	.100	500