

BRITISH STANDARDS INSTITUTION
2, PARK STREET, LONDON, W1A 2BS

BS CECC 500 13 -003
ISSUE 1 JUNE 1987
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Specifications available from:-
AS SHOWN IN PD9002, CECC 00200

SILICONIX LTD.,
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TELEPHONE (0792) 310100 TELEX 48917

ELECTRONIC COMPONENTS OF ASSESSED QUALITY
DETAIL SPECIFICATION IN ACCORDANCE WITH
BS CECC 50 000: 1982

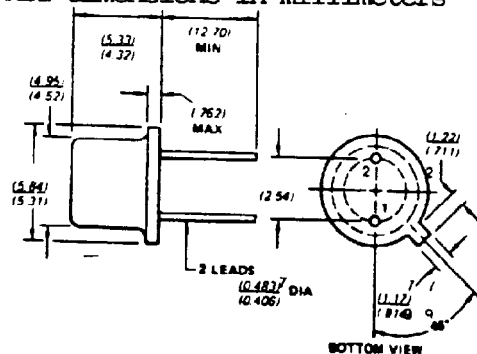
DETAIL SPECIFICATION FOR:

CR 160 CR 180 CR 200 CR 220 CR 240
CR 270 CR 300 CR 330 CR 360 CR 390
CR 430 CR 470 CR 530

ORDERING INFORMATION:
See clause 7 of this document

1. MECHANICAL DESCRIPTION

All dimensions in millimeters



TO-18
(2 PIN)

IEC 191-2 CODE (B10-C7) BS 3934:
SO-124, SB2-3

2. DESCRIPTION

CASE RATED
CURRENT REGULATING
DIODE IN HERMETIC GLASS/METAL
ENCAPSULATION

3. LEVEL OF QUALITY ASSESSMENT LEVEL E Plus additional tests

4. LIMITING VALUES (Absolute maximum rating systems)

These apply over the operating temperature range unless otherwise stated.

CECC 500 13 Section 3 Reference		SYMBOL	VALUE		
			MIN.	MAX.	UNIT
4.1	Operating temperature range	T_{case}	-55	150	°C
4.2	Storage temperature range	T_{stg}	-55	200	°C
4.3.1	Power dissipation at $T_{case} = 25\text{ °C}$ De-rating factor θ_{jc} 100°C/Watt	P_{tot}	-	75	mW
4.4	Maximum value of reverse current	I_R	-	50	mA
4.5	Maximum value of forward voltage	V_{S2}	-	100	V

See the relevant Qualified Products List of availability of components made to this specification.



Documents

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CHARACTERISTICS

$T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated.

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+ indicates verified in inspection testing clause 9.

CECC 500 13 CLAUSE REFERENCE	PARAMETER AND TEST CONDITIONS		SYMBOL	MIN.	MAX.	UNITS
5.1 +	Regulator Current $V_S = 25\text{V}$	CR 160	I_{S1}	1.44	1.76	mA
		CR 180		1.62	1.98	
		CR 200		1.80	2.20	
		CR 220		1.98	2.42	
		CR 240		2.16	2.64	
		CR 270		2.43	2.97	
		CR 300		2.70	3.30	
		CR 330		2.97	3.63	
		CR 360		3.24	3.96	
		CR 390		3.51	4.92	
		CR 430		3.87	4.73	
		CR 470		4.23	5.17	
		CR 530		4.77	5.83	
5.2 +	Regulator Current $V_S = 100\text{V}$	CR 160	I_{S2}	-	1.93	mA
		CR 180		-	2.17	
		CR 200		-	2.42	
		CR 220		-	2.66	
		CR 240		-	2.90	
		CR 270		-	3.26	
		CR 300		-	3.63	
		CR 330		-	3.99	
		CR 360		-	4.35	
		CR 390		-	4.72	
		CR 430		-	5.20	
		CR 470		-	5.68	
		CR 530		-	6.41	
5.3 +	Regulator Current $V_S = 100\text{V}$ $T_{\text{case}} = +125^{\circ}\text{C}$	CR 160	I_{S3}	-	1.94	mA
		CR 180		-	2.18	
		CR 200		-	2.42	
		CR 220		-	2.66	
		CR 240		-	2.90	
		CR 270		-	3.27	
		CR 300		-	3.63	
		CR 330		-	4.00	
		CR 360		-	4.36	
		CR 390		-	4.72	
		CR 430		-	5.20	
		CR 470		-	5.69	
		CR 530		-	6.42	

CHARACTERISTICS

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CECC 500 13 CLAUSE REFERENCE	PARAMETER AND TEST CONDITIONS	SYMBOL	MIN.	MAX.	UNITS
5.4 +	Regulator Current Variation $V_S = 20\text{V} \text{ \& } 30\text{V}$	ΔI_S	-	21.0	μA
			-	23.8	
			-	25.3	
			-	27.0	
			-	29.0	
			-	31.3	
			-	33.3	
			-	35.7	
			-	37.7	
			-	39.2	
			-	40.8	
			-	42.6	
			-	45.6	
			-	45.6	
			-	45.6	
5.5 +	Small Signal Regulator conductance $V_S = 25\text{V}$ Frequency = 1kHz	g_S	-	2.105	μmho
			-	2.381	
			-	2.532	
			-	2.703	
			-	2.899	
			-	3.125	
			-	3.333	
			-	3.572	
			-	3.774	
			-	3.992	
			-	4.082	
			-	4.225	
			-	4.545	
			-	4.545	
			-	4.545	
5.6 +	Knee Conductance $V_S = 6\text{V}$ Frequency = 1kHz	g_{K}	-	10.87	μmho
			-	13.51	
			-	16.39	
			-	19.23	
			-	22.73	
			-	28.57	
			-	34.48	
			-	41.67	
			-	50.00	
			-	58.82	
			-	71.43	
			-	83.33	
			-	100.00	
			-	100.00	

CHARACTERISTICS

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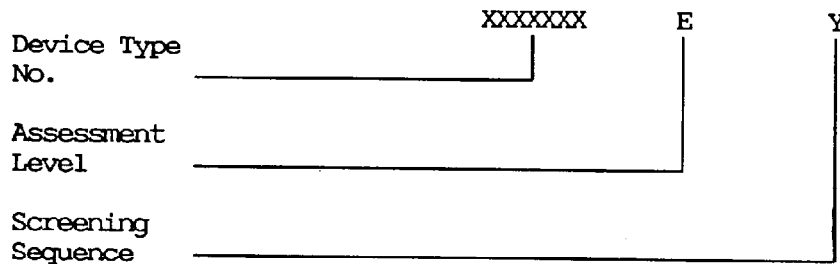
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CECC 500 13 CLAUSE REFERENCE	PARAMETER AND TEST CONDITIONS	SYMBOL	MIN.	MAX.	UNITS
5.7 +	Limiting Voltage $I_L = 1.15\text{mA} = \text{CR } 160$ $1.30\text{mA} = \text{CR } 180$ $1.44\text{mA} = \text{CR } 200$ $1.58\text{mA} = \text{CR } 220$ $1.73\text{mA} = \text{CR } 240$ $1.94\text{mA} = \text{CR } 270$ $2.16\text{mA} = \text{CR } 300$ $2.38\text{mA} = \text{CR } 330$ $2.59\text{mA} = \text{CR } 360$ $2.80\text{mA} = \text{CR } 390$ $3.10\text{mA} = \text{CR } 430$ $3.38\text{mA} = \text{CR } 470$ $3.82\text{mA} = \text{CR } 530$	V_L	-	1.65	V
5.8 +	Temperature Coefficient $V_S = 25\text{V}$ $-55^{\circ}\text{C} \leq T_{\text{amb}} \leq +125^{\circ}\text{C}$	αI_S	0.00	+0.10	%/ $^{\circ}\text{C}$
5.9	Thermal resistance, junction to case $R_{H(\text{case})}$ All devices	R_{th} (j-case)	-	100	$^{\circ}\text{C/W}$

6. MARKING

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1. Each diodes shall bear the following marking:
 - a. The manufacturer's type number (See Table 1).
 - b. The factory identification code.
 - c. The date code.
 - d. Mark of conformity unless a Certificate of Conformity is used.
2. Each package containing one or more of these diodes shall bear all the above markings and in addition
 - d. This detail specification number (See Table 1).
3. Interpretation of marking information



KEY:

Quality Assessment Level
(CECC 50 000 ISSUE III APPENDIX IIA)

E

Screening Sequence
(CECC 50 000 ISSUE III APPENDIX VI)

BLANK

No Screening

A

Sequence A

B

Sequence B

C

Sequence C

D

Sequence D

7. ORDERING INFORMATION

The following minimum information is necessary to order a specific device, unless otherwise stated.

- 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