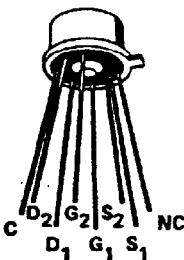


BRITISH STANDARDS INSTITUTION 2, PARK STREET, LONDON W1A 2BS	BS CECC 50 012-025 ISSUE 1 MAY 1988 Page 1 of 14 pages	
Specification available from: as shown in PD 9002, CECC 00200 and: SILICONIX LTD. MORRISTON SWANSEA SA6 6NE. Telephone (0792) 310100. Telex 48197	 DETAIL SPECIFICATION FOR U430 U431 DUAL SINGLE GATE JUNCTION F.E.T. For ordering information see clause 7 of this document	
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH BS CECC 50000: 1982.	1. MECHANICAL DESCRIPTION  For detail dimensions see Appendix II and IEC 191-2 B7C and C4 For marking information see clause 6.	
2. Semiconductor Material: Silicon Polarity: N-Channel Encapsulation: Hermetically sealed metal can Application: Low frequency amplifier applications Power: Ambient rated		3. LEVELS OF QUALITY ASSESSMENT E, F and L

4. LIMITING VALUES (Absolute maximum rating system)

These apply over the operating temperature range unless otherwise stated

CECC 50012 Section 1 Reference	These apply over the temperature range unless otherwise stated.	SYMBOL	VALUE		
			MIN.	MAX.	UNIT
4.1	Ambient operating temperature range	T_{amb}	-65	+150	$^{\circ}\text{C}$
4.2	Storage temperature range	T_{stg}	-65	+200	$^{\circ}\text{C}$
4.3	Drain-source voltage	V_{DSS}	-	25	V
4.4	Gate-source reverse voltage	$-V_{GSR}$	-	25	V
4.5	Gate-drain reverse voltage with source O/C	$-V_{GDO}$	-	25	V
4.6	Gate current	I_{GF}	-	10	mA
4.7	Drain current	I_D	-	10	mA
4.8.1	Total power dissipation ($T_{amb} = 25^{\circ}\text{C}$) (derate linearly at the rate of 4 mW/ $^{\circ}\text{C}$)	P_{tot}	-	500	mW

See the relevant Qualified Products List PD9002 and/or CECC 00200 for availability of
components made to this specification

5. CHARACTERISTICS

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

* indicates verified in inspection testing clause 9

CECC 50012 Section 1 Reference	PARAMETERS AND TEST CONDITIONS	VALUE			
		SYMBOL	MIN	MAX	UNIT
5.1*	Gate reverse current All types $V_{GSR} = 15.0V$ $V_{DS} = 0V$	$I_{GSS(1)}$	-	150	pA
5.2*	Gate reverse current All types $V_{GSR} = 15.0V$ $V_{DS} = 0V$ $T_{amb} = 150^{\circ}C$	$I_{GSS(2)}$	-	150	nA
5.3*	Gate-source cut-off voltage $V_{DS} = 10.0V$ $I_D = 1nA$ U430 U431	$-V_{GS(OFF)}$	1.0 2.0	4.0 6.0	V V
5.4*	Drain current (Note 1) $V_{DS} = 10.0V$ $V_{GS} = 0V$ U430 U431	I_{DSS}	12 24	30 60	mA mA
*	Drain current ratio (Notes 1,2) All types $V_{DS} = 10.0V$ $V_G = 0V$	$\frac{I_{DSS1}}{I_{DSS2}}$	0.9	1.0	
*	Gate-source cut-off voltage ratio (Note 2) $V_{DS} = 10.0V$ $I_D = 1nA$	$\frac{V_{GS(OFF)1}}{V_{GS(OFF)2}}$	0.9	1.0	
*	Transconductance ratio (Notes 1,2) All types $V_{DS} = 10.0V$ $I_D = 10.0mA$	$\frac{g_{21s1}}{g_{21s2}}$	0.9	1.0	

Note 1: Pulse test required, pulse width 300 μ s duty cycle $\leq$ 3%

Note 2: Assumes smaller value in numerator.

5. CHARACTERISTICS

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

* indicates verified in inspection testing clause 9

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CECC 50012 Section 1 Reference	PARAMETERS AND TEST CONDITIONS	VALUE			
		SYMBOL	MIN	MAX	UNIT
*	Gate-source breakdown voltage All types $V_{DS} = 0V$ $-I_G = 1\mu A$	$-B_{VGSS}$	25	-	V
*	Gate-source forward voltage All types $V_{GS} = 0V$ $I_D = 10.0mA$	$V_{gs(f)}$	-	1.0	V
5.7*	Short-circuit input capacitance All types $V_{DS} = 0V$ $V_{GSR} = 10.0V$ $f = 1MHz$	C_{11ss}	-	5	pF
5.8*	Short-circuit output conductance All types $f = 1KHz$ $V_{DS} = 10.0V$ $I_D = 10.0mA$	g_{22ss}	-	250	μmho
5.9*	Short-circuit forward transconductance All types $f = 1KHz$ $V_{DS} = 10.0V$ $I_D = 10.0mA$	g_{21s}	10	-	mmho

Note 1: Pulse test required, pulse width 300 μs duty cycle $\leq 3\%$.

Note 2: Assumes smaller in numerator.

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6. MARKING

- (1) Each transistor shall bear the following marking:
 - (a) The manufacturer's type number (see Table 1)
 - (b) The factory identification code
 - (c) The date code
- (2) Each package containing one or more of these transistors shall bear all of the above markings except (b) and in addition:
 - (d) the detail specification number (see Table 1).
- (3) Interpretation of marking information: XXXXXX X Y

Device type number _____

Quality Assessment Level _____

Screening sequence _____

KEY:

Quality Assessment Level

(CECC 50 000 ISSUE 111 APPENDIX 11A)

E

F

L

Screening Sequence

(CECC 50 000 ISSUE 111 APPENDIX VI)

BLANK

A

B

C

D

No Screening

Sequence A

Sequence B

Sequence C

Sequence D

7. 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 11A of CECC 50 000, and, if required, screening sequence as defined in appendix VI of CECC 50 000.
- Any other particulars.

TABLE 1

ORDER TYPE	SPECIFICATION NUMBER	MARKING
BS U430X - Y to	BS CECC 50 012-025 Issue 1 dated May 1988	U430X - Y
BS U431X - Y to	BS CECC 50 012-025 Issue 1 dated May 1988	U431X - Y

8. RELATED DOCUMENTS

BS6001	Sampling procedures and tables for inspection by attributes.
BSE 9000	General requirements for electronic components of assessed quality.
BS CECC 50 000	Generic specification for discrete semiconductor devices.
CECC 00200	Qualified products list.
IEC 147	Essential ratings and characteristics of semiconductor devices and general principles of measuring methods.
IEC 191-2	Mechanical standardisation of semiconductor device - Dimensions.
PD 9002	BS 9000 Component selection guide.

9. TEST CONDITIONS AND INSPECTION REQUIREMENTS

These are given in the following tables, where the values and exact test conditions to be used should be specified as required for a given type, and as required by the relevant text in CECC 50 000.



Documents

Document Sharing Hub

GROUP A
LOT BY LOT

All tests are non-destructive (3.5.6 of CECC 50 000)

Clause numbers are made with respect to CECC 50 000 unless otherwise stated.

EXAMINATION OR TEST AND REFERENCE	CONDITIONS $T_{amb} = 25^{\circ}C$ unless otherwise stated	INSPECTION REQUIREMENTS						
		LIMITS			LEVELS			
		Min.	Max.	Unit	E		F + L	
					IL	AQL	IL	AQL
SUBGROUP A1 Visual Inspection (4.2.1)	4.2.1				I	0.65%	I	0.65%
SUBGROUP A2a Non-operatives (4.3.4 T.071) $I_{GSS(1)}$ - $V_{GSS(OFF)}$ (4.3.4 T.074)	$V_{GS} = -15V$ $V_{DS} = 0V$ All Types $V_{DS} = 10V$ $I_D = 1mA$ U430 U431	-	1.5	nA	II	0.15%	II	0.15%
SUBGROUP A2b Gate reverse current (4.3.4 T.071) $I_{GSS(1)}$ Drain current (4.3.4 T.072) I_{DSS} Gate source breakdown voltage B_{VGSS} (4.3.4 T.071) Gate source cut-off voltage - $V_{GSS(OFF)}$ (4.3.4 T.074)	$V_{GS} = -15V$ $V_{DS} = 0V$ All types $V_{DS} = 10V$ $V_{GS} = 0V$ U430 U431 $V_{DS} = 0V$ $I_G = -1\mu A$ All types $V_{DS} = 10V$ $I_D = 1nA$ U430 U431	-	150	pA	II	0.4%	II	1.0%
		12	30	mA				
		24	60	mA				
		25	-	V				
		1.0	4.0	V				
		2.0	6.0	V				