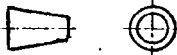
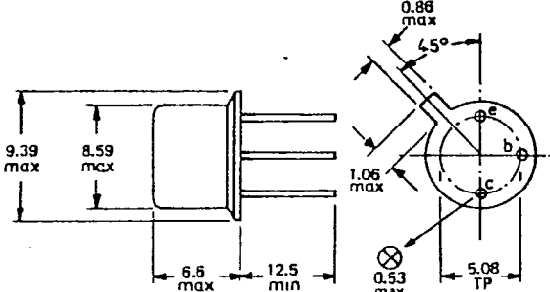


BRITISH STANDARDS INSTITUTION 2, PARK STREET, LONDON, W1A 2BS	BS CECC 50 004-096 CECC 50 004-096 Issue 1, April 1981 
Specification available from:- As shown in PD 9002 and/or CECC 00 200 and MULLARD LIMITED Mullard House, Torrington Place, London, WC1E 7HD Telephone: 01 580-6633 Telex: 264341	Page 1 of 15 pages
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH BS CECC 50 000 (1981)	MANUFACTURER'S TYPE NUMBER CV7725 CV7726 CV7727
Outline and dimensions Third angle projection  For detail dimensions see IEC 191-B4C and C4 Equivalent to BS 3934 SO-134A JEDEC TO-39  Marking information see clause 6 All dimensions in millimetres	For ordering information see Clause 7 Description: Semiconductor material: Silicon Encapsulation: Metal Application: Switching Polarity: N-P-N Power: (Ambient rated). 800mW ASSESSMENT LEVEL F PLUS ADDITIONAL TESTS

4. LIMITING VALUES (Absolute maximum system)
 (Over the operating temperature range unless otherwise stated)

Clause CECC 50 004		Value			
		Symbol	min	max	Unit
4.1.	Operating ambient temperature	T_{amb}	-65	200	$^{\circ}\text{C}$
4.2.	Storage temperature	T_{stg}	-65	200	$^{\circ}\text{C}$
4.3.	Collector-base continuous (direct) voltage CV7725 CV7726 CV7727	V_{CB0}		80	V
				60	V
				40	V
4.4.	Collector-emitter continuous (direct) voltage CV7725 CV7726 CV7727	V_{CEO}		35	V
				30	V
				20	V

Cont/d.....

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

4. LIMITING VALUES (Cont/d)

Clause CECC 50 004	Symbol	Value		Unit
		min	max	
4.5. Emitter-base continuous (direct) voltage	V_{EB0}		6.0	V
4.6. Continuous (direct) collector current	I_C		1.0	A
Peak repetitive collector current	I_{CM}		1.0	A
Continuous (direct) base current	I_B		0.1	A
4.7. Power dissipation at $T_{amb} \leq 25^{\circ}C^*$	P_{tot}		800	mW
Power dissipation at $T_{case} \leq 25^{\circ}C^*$	P_{tot}		3.0	W

(*See derating curves figs 1 and 2)

5. ELECTRICAL CHARACTERISTICS

Clause CECC 50 004	Measured	Characteristics and conditions at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated	Symbol	Value min	max	Unit
5.1	+	Static forward current transfer ratio $V_{CE} = 0.5\text{V}$ $I_C = 150\text{mA}^*$	CV7725 CV7726 CV7727	$h_{21E}(1)$	30 35 50	-
	+	$V_{CE} = 2.0\text{V}$ $I_C = 1.0\text{A}^*$	All	$h_{21E}(2)$	10	-
	+	$V_{CE} = 0.5\text{V}$ $I_C = 10\text{mA}$	CV7725 CV7726, CV7727	$h_{21E}(3)$	20 25	-
5.2	+	Collector-emitter saturation voltage $I_C = 1.0\text{A}$ $I_B = 0.1\text{A}^*$	All	$V_{CEsat}(1)$	-	1.6 V
5.4	+	Base-emitter saturation voltage $I_C = 1.0\text{A}$ $I_B = 0.1\text{A}^*$	All	$V_{BEsat}(1)$	-	2.0 V
	+	$I_C = 150\text{mA}$ $I_B = 15\text{mA}^*$	All	$V_{BEsat}(2)$	-	1.2 V
	+	$I_C = 10\text{mA}$ $I_B = 1\text{mA}$	All	$V_{BEsat}(3)$	-	0.8 V
5.5	+	Collector cut-off current with emitter open circuit $I_C = 0$ $V_{CB} = 60\text{V}$ $= 40\text{V}$ $= 30\text{V}$	CV7725 CV7726 CV7727	$I_{CBO}(1)$	-	50 nA 50 nA 50 nA
5.6	+	$I_E = 0$ $V_{CB} = 60\text{V}$ $T_{amb} = 125^{\circ}\text{C}$ 40V 30V	CV7725 CV7726 CV7727	$I_{CBO}(2)$	-	10 μA 10 μA 10 μA
	+	Collector cut-off current with base open circuit $I_C = 0$ $V_{CB} = 35\text{V}$ $T_{amb} = 100^{\circ}\text{C}$ 30V 20V	CV7725 CV7726 CV7727	$I_{CEO}(2)$	-	80 μA 80 μA 80 μA
	+	Emitter-base leakage current $I_C = 0$ $V_{EB} = 5\text{V}$	All	I_{EBO}	-	50 nA

*Pulsed $t_p = 300 \mu\text{s}$, $\delta \leq 2\%$

Cont/d....

5. ELECTRICAL CHARACTERISTICS (Cont/d)

Clause CECC 50 004	Measured	Characteristics and conditions at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated	Symbol	Value		Unit
				min	max	
	+	Collector-emitter sustaining voltage $I_B = 0$ $I_C = 30\text{mA}$	$V_{CE0sust}$	35	—	V
		CV7725		30	—	V
		CV7726		20	—	V
	+	Collector-base breakdown voltage $I_E = 0$ $I_C = 0.1\text{mA}$	$V_{(BR)CBO}$	80	—	V
		CV7725		60	—	V
		CV7726		40	—	V
	+	Emitter-base breakdown voltage $I_C = 0$ $I_E = 0.1\text{mA}$	$V_{(BR)EBO}$	6	—	V
		All				
5.7.1	+	Rise time $I_C = 150\text{mA}$ $I_B = 15\text{mA}$	t_r	—	75	ns
	+	Storage time	t_s	—	350	ns
		Fall time				
5.7.1	+	$I_C = 150\text{mA}$ $I_{B1} = I_{B2} = 15\text{mA}$	t_f	—	90	ns
5.7.2	+	Transition frequency $I_C = 50\text{mA}$ $V_{CE} = 6\text{V}$ $F = 35\text{MHz}$	f_T	60	—	MHz
		CV7725, CV7726, CV7727		50	—	MHz
5.8	+	Output capacitance $I_E = 0$ $V_{CB} = 10\text{V}$ $f = 1\text{MHz}$	C_{22b}	—	12	pF
5.9		Thermal resistance junction to ambient	$R_{th(j-amb)}$	—	218	$^{\circ}\text{C/W}$

6. MARKING

Each device shall bear the following markings:

- (a) Type number
- (b) Date code e.g. 8001
- (c) Manufacturer's trade mark or factory identification code, QDG

Each package containing one or more of these transistors shall bear the above marking and in addition, this detail specification number CECC 50 004-096.

7. ORDERING INFORMATION

Orders for this transistor should include the following minimum information:

Transistor type

This specification number, issue and date and, if required, screening sequence as defined in Appendix VI of CECC 50 000.

RELATED DOCUMENTS

BSE 9000	General requirements for electronic components of assessed quality
CECC 50 000	Generic specification for discrete semiconductor devices
PD 9002	
CECC 00-200	Qualified products list
BS3011	
IEC 68	Methods for the environmental testing of electronic components
BS3934	
IEC 191-2	Dimensions of semiconductor devices