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Mullard Limited, Mullard House
Torrington Place, London WC1E 7HD

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NL - CECC 50 007-007
Issue 2
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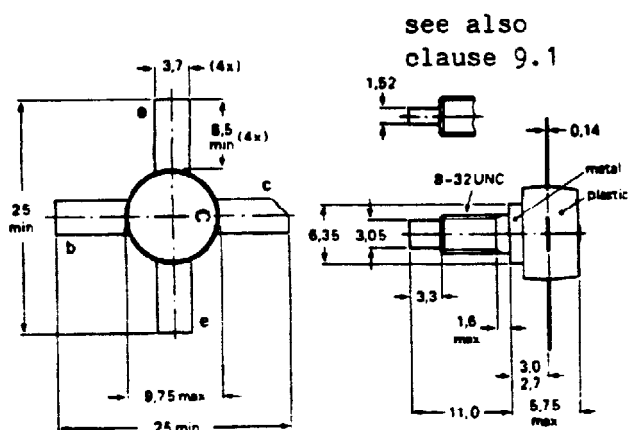


QUALITY IN ACCORDANCE WITH:
NEN - CECC 50 000

Bipolar transistor
Type number BLY91A

Ordering information:
see clause 7

1. MECHANICAL DESCRIPTION First angle projection



see also
clause 9.1

2. SHORT DESCRIPTION

Semiconductor material: Si
Polarity: NPN
Case material: plastic
Power: Case rated
Frequency: VHF
Use: Power transistor for
Intermittent Trans
mitting Applications

3. LEVELS OF QUALITY ASSESSMENT

F and L

4. LIMITING VALUES (absolute maximum system)

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

Clause CECC 50 007		Symbol	Value		Unit
			min.	max.	
4.1	Operating case temperature	T_{case}	-30	+150	°C
4.2	Storage temperature	T_{stg}	-30	+200	°C
4.3	Collector-to-base continuous (direct) voltage	V_{CBO}		65	V
4.4	Collector-to-emitter continuous (direct) voltage	V_{CEO}		36	V
4.5	Emitter-to-base continuous (direct) voltage	V_{EBO}		4	V

CAUTION: This device incorporates beryllium oxide in its assembly
(see 9.2)

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

Clause CECC 50 007		Symbol	Value		Unit
			min.	max.	
4.6	Collector current (DC or average)	I_C		0.75	A
4.7	Peak collector current ($f > 1\text{MHz}$)	I_{CM}		2.25	A
4.8	Base current (DC or average)	I_B		0.15	A
4.9	Total power dissipation as a function of heatsinktemperature	see clause 9.3, fig.2			
4.10	Area of safe operation	see clause 9.3, fig.3			
4.11	Endurance to mismatch under specified conditions	see clause 9.3, fig.4			

5. CHARACTERISTICS See clause 8 of this document for inspection requirements.

Clause CECC 50 007	Specified at $T_{case} = 25^\circ\text{C}$, unless otherwise stated	Conditions	Symbol	Value		Unit
				min.	max.	
5.1	Common-emitter forward current transfer ratio	$V_{CE} = 5\text{V}$ $I_C = 500\text{mA}$	h_{21E}	5	100	
5.3	Transition frequency	$V_{CE} = 20\text{V}$ $I_C = 400\text{mA}$ $f = 100\text{MHz}$	f_T	300		MHz
5.4.4	Collector-emitter cut-off current with the base open-circuited	$V_{CE} = 28\text{V}$ $I_B = 0$	I_{CEO}		5	mA
5.4.1	Collector-base cut-off current (1)	$V_{CB} = 65\text{V}$ $I_E = 0$	$I_{CB0(1)}$		1.0	mA
5.5.1	Collector-base cut-off current (2)	$V_{CB} = 65\text{V}$ $I_E = 0$ $T_{amb} = 200^\circ\text{C}$	$I_{CB0(2)}$		5.0	mA
5.6	Collector-emitter saturation voltage	$I_B = 0.1\text{A}$ $I_C = 0.5\text{A}$	$V_{CE\text{ sat}}$		500	mV
5.7	Power gain	$P_{out} = 8\text{W}$ $V_{CE} = 28\text{V}$ $f = 175\text{MHz}$	G_p	12		dB

Clause CECC 50 007	Specified at $T_{case} = 25^{\circ}C$, unless otherwise stated	Conditions	Symbol	Value		Unit
				min.	max.	
5.8	Collector efficiency	as for 5.7 see note	η_c	65		%
5.9	Output capacitance	$V_{CB} = 30V$ $I_E = 0$ $f = 1MHz$	C_{22b}		15	pF
5.11	Thermal resistance, junction to case	$V_{CE} = 20V$ $I_C = 450mA$	$R_{th(j-case)}$		12.6	k/w

Note: (to 5.8) $\eta_c = \frac{P_{out}}{(V_{CE} \cdot I_C)}$.

6. MARKING

6.1. Each device shall bear the following marking:

- a. Terminal identification
- b. Type number BLY91A
- c. Date code
- d. Manufacturer's identification code (H)

6.2. Each package containing one or more of these devices shall bear the above marking (except a) and in addition the detail specification reference NL-CECC 50 007-007 and assessment level and shall be closed with the CECC seal.

7. ORDERING INFORMATION

Orders for these devices shall contain the following minimum information:

(Qty) Transistor type BLY91A to assessment level F of NL-CECC 50 007-007, issue 2, dated July 1987.

or

(Qty) Transistor type BLY91A to assessment level L of NL-CECC 50 007-007, issue 2, dated July 1987.

8. TEST CONDITIONS AND INSPECTION REQUIREMENTS

These are given in the following tables in which the values and exact test conditions have been specified in line with the indications given in CECC 50 000.

All references to clause numbers refer to CECC 50 000 unless otherwise specified.

Devices subject to tests marked "D" shall not be accepted for release.

GROUP A - Lot by lot								
All tests are non-destructive (3.5.6. of CECC 50 000)						AQL: given in %		
EXAMINATION or TEST	REF.	CONDITIONS at $T_{case} = 25^{\circ}$ unless otherwise stated	INSPECTION REQUIREMENTS					
			LIMITS		LEVELS			
			min.	max.	F		L	
					IL	AQL	IL	AQL
<u>SUB-GROUP A1</u> Visual Inspection	4.2.1	4.2.1	4.2.1		I	1.5	I	1.5
<u>SUB-GROUP A2a</u> non-operatives Short circuit Collector-base cut-off current $I_{CBO} (1)$ Open circuit Static value of common emitter forward current transfer ratio $h_{21E} (1)$	4.3.4 T 001 4.3.4 T 006	$V_{CB} = 65V$ $I_E = 0$ $V_{CE} = 5V$ $I_C = 500mA$ Note 1		30mA 2	II	0.15	II	0.15
<u>SUB-GROUP A2b</u> Collector-base cut-off current $I_{CBO} (1)$ Collector-emitter cut-off current I_{CEO} I_{EBO} Static value of common emitter forward current transfer ratio $h_{21E} (1)$	4.3.4 T 001 4.3.4 T 009 4.3.4 T 006	$V_{CB} = 65V$ $I_E = 0$ $V_{CE} = 36V$ $I_B = 0$ $V_{BE} = 4V; I_C = 0$ $V_{CE} = 5V$ $I_C = 500mA$ Note 1		1.0mA 10mA 1mA 100	II	0.65	II	0.65