

BLX97

U.H.F. LINEAR POWER TRANSISTOR

N-P-N multi-emitter silicon planar epitaxial transistor primarily for use in linear u.h.f. amplifiers for television transposers and transmitters.

Features:

- guaranteed low intermodulation figures;
- gold metallization ensures excellent reliability.

The transistor has a 1/2" capstan envelope with a moulded cap. All leads are isolated from the stud.

QUICK REFERENCE DATA

R.F. performance in linear amplifier

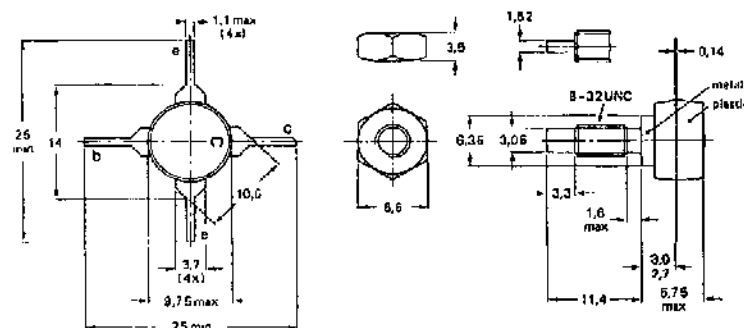
mode of operation	f_{vision} MHz	V_{CE} V	I_{C} mA	T_{h} °C	d_{im} dB	$P_{\text{o sync}}$ W	G_{p} dB
class A	880	25	500	25	-60	> 1,0	> 6,5
class-A	860	25	500	25	-60	typ. 1,1	typ. 6,5

* Three-tone test method (vision carrier -8 dB, sound carrier -7 dB, sideband signal -15 dB), zero dB corresponds to peak sync level.

MECHANICAL DATA

Dimensions in mm

Fig. 1 SOT-48/3.



Torque on nut: min. 0,75 Nm
(7,5 kg cm)
max. 0,85 Nm
(8,5 kg cm)

Diameter of clearance hole in heatsink: max. 4,2 mm.
Mounting hole to have no burrs at either end.
De-burring must leave surface flat; do not chamfer or countersink either end of hole.

When locking is required an adhesive is preferred instead of a lock washer.

PRODUCT SAFETY This device incorporates beryllium oxide, the dust of which is toxic. The device is entirely safe provided that the BeO disc is not damaged.



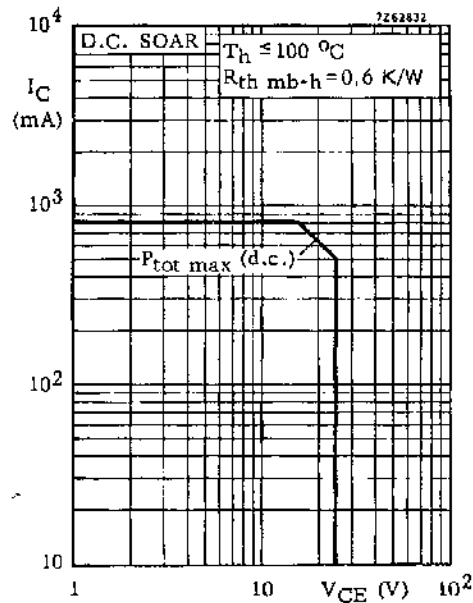
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Quality Semi-Conductors

BLX97

RATINGS Limiting values in accordance with the Absolute Maximum System (IEC134)

Collector-base voltage (open emitter; peak value)	V_{CBOM}	max.	40	V
Collector-emitter voltage ($R_{BE} = 10 \Omega$; peak value)	V_{CERM}	max.	40	V
Collector-emitter voltage (open base)	V_{CEO}	max.	27	V
Emitter-base voltage (open collector)	V_{EBO}	max.	3,5	V
Collector current (d.c.)	I_C	max.	0,8	A
Collector current (peak value) $f > 1$ MHz	I_{CM}	max.	2	A
Total power dissipation up to $T_h = 100^\circ\text{C}$	P_{tot}	max.	12,5	W



Storage temperature	T_{stg}	-65 to +200	$^\circ\text{C}$
Junction temperature	T_j	max. 200	$^\circ\text{C}$

THERMAL RESISTANCE

From junction to mounting base	$R_{th j-mb}$	=	7,5	K/W
From mounting base to heatsink	$R_{th mb-h}$	=	0,6	K/W

BLX97

CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

Collector cut-off current

$$I_E = 0; V_{CB} = 20\text{ V}$$

$$I_{CBO} < 200\text{ }\mu\text{A}$$

Breakdown voltages

Collector-base voltage

$$\text{open emitter; } I_C = 2\text{ mA}$$

$$V_{(BR)CBO} > 40\text{ V}$$

Collector-emitter voltage

$$R_{BE} = 10\text{ }\Omega; I_C = 10\text{ mA}$$

$$V_{(BR)CER} > 40\text{ V}$$

$$\text{open base; } I_C = 10\text{ mA}$$

$$V_{(BR)CEO} > 27\text{ V}$$

Emitter-base voltage

$$\text{open collector; } I_E = 2\text{ mA}$$

$$V_{(BR)EBO} > 3,5\text{ V}$$

Saturation voltage

$$I_C = 400\text{ mA; } I_B = 40\text{ mA}$$

$$V_{CEsat} < 0,75\text{ V}$$

D.C. current gain

$$I_C = 400\text{ mA; } V_{CE} = 20\text{ V}$$

$$h_{FE} > 30$$

$$I_C = 800\text{ mA; } V_{CE} = 20\text{ V}$$

$$h_{FE} > 20$$

Transition frequency

$$I_C = 400\text{ mA; } V_{CE} = 20\text{ V}$$

$$f_T > 1,2\text{ GHz}$$

$$I_C = 700\text{ mA; } V_{CE} = 20\text{ V}$$

$$f_T > 1,0\text{ GHz}$$

Collector capacitance at $f = 1\text{ MHz}$

$$I_E = I_C = 0; V_{CB} = 20\text{ V}$$

$$C_c < 20\text{ pF}$$

Feedback capacitance at $f = 1\text{ MHz}$

$$I_C = 20\text{ mA; } V_{CE} = 20\text{ V; } T_{mb} = 25\text{ }^{\circ}\text{C}$$

$$C_{re} \text{ typ. } 7\text{ pF}$$

Collector-stud capacitance

$$C_{cs} \text{ typ. } 2\text{ pF}$$