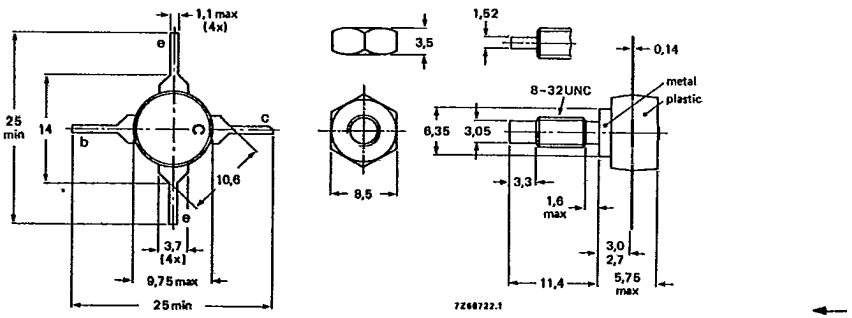
SILICON PLANAR EPITAXIAL TRANSISTOR

N-P-N silicon planar epitaxial transistor primarily designed for use in fast-switching wide-band video amplifiers for driving the cathode of a picture tube.

The transistor has a common-base pin configuration and is sealed in a capstan envelope with a moulded cap. All the leads are isolated from the stud.

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 holes 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.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Collector-emitter voltage (peak value); $V_{BE} = 0$ open base	V_{CESM}	max.	65 V
	V_{CEO}	max.	33 V
Emitter-base voltage (open collector)	V_{EBO}	max.	4 V
Collector current d.c.	I_C	max.	400 mA
(peak value); $f > 1$ MHz	I_{CM}	max.	800 mA
D.C. power dissipation up to $T_h = 70$ °C (see D.C. SOAR in Fig. 2)	$P_{d.c.}$	max.	4 W
Storage temperature	T_{stg}		−65 to + 150 °C
Operating junction temperature	T_j	max.	200 °C

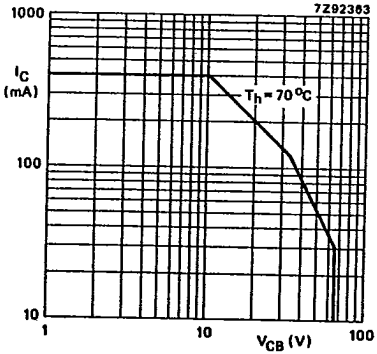


Fig. 2 D.C. SOAR.

THERMAL RESISTANCE

From junction to mounting base (d.c.)	$R_{th\ j\text{-}mb}$	=	32,5 K/W
From mounting base to heatsink	$R_{th\ mb\text{-}h}$	=	0,6 K/W

Silicon planar epitaxial transistor

BLX91CB

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Collector-emitter breakdown voltage V_{BE} = 0; I_C = 10 mA	$V_{(BR)CES}$	> 65 V
I_C = 25 mA; I_B = 0	$V_{(BR)CEO}$	> 33 V
Emitter-base breakdown voltage I_E = 1 mA; I_C = 0	$V_{(BR)EBO}$	> 4 V
Collector-base leakage current V_{CB} = 20 V; I_E = 0	I_{CBO}	< 1 mA
D.C. current gain I_C = 100 mA; V_{CE} = 5 V	h_{FE}	10 to 160 typ. 50
Transition frequency I_C = 50 mA; V_{CE} = 5 V	f_T	typ. 1,0 GHz
Collector capacitance at f = 1 MHz $I_E = i_e$ = 0; V_{CB} = 10 V	C_c	typ. 3,5 pF
Emitter capacitance at f = 1 MHz $I_C = i_c$ = 0; V_{EB} = 0,5 V	C_e	typ. 11 pF
Feedback capacitance at f = 1 MHz I_C = 5 mA; V_{CE} = 10 V	C_{re}	typ. 2,5 pF
Collector-stud capacitance	C_{cs}	typ. 2 pF

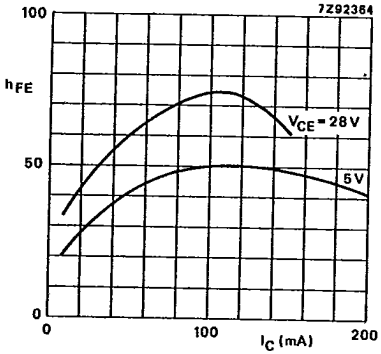


Fig. 3 Current gain (d.c.) versus collector current.

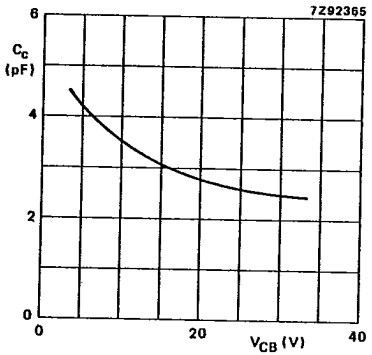


Fig. 4 Collector capacitance versus V_{CB}; $I_E = i_e$ = 0; f = 1 MHz.

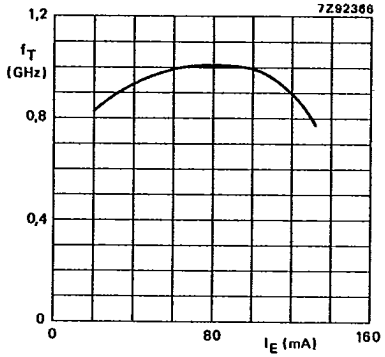


Fig. 5 Transition frequency versus emitter current; V_{CB} = 28 V.