

BLW79

U.H.F. POWER TRANSISTOR

N-P-N silicon planar epitaxial transistor intended for transmitting applications in class-A, B or C in the u.h.f. and v.h.f. range for nominal supply voltages up to 13,5 V. The resistance stabilization of the transistor provides protection against device damage at severe load mismatch conditions. The transistor is housed in a 1/4" capstan envelope with a ceramic cap.

QUICK REFERENCE DATA

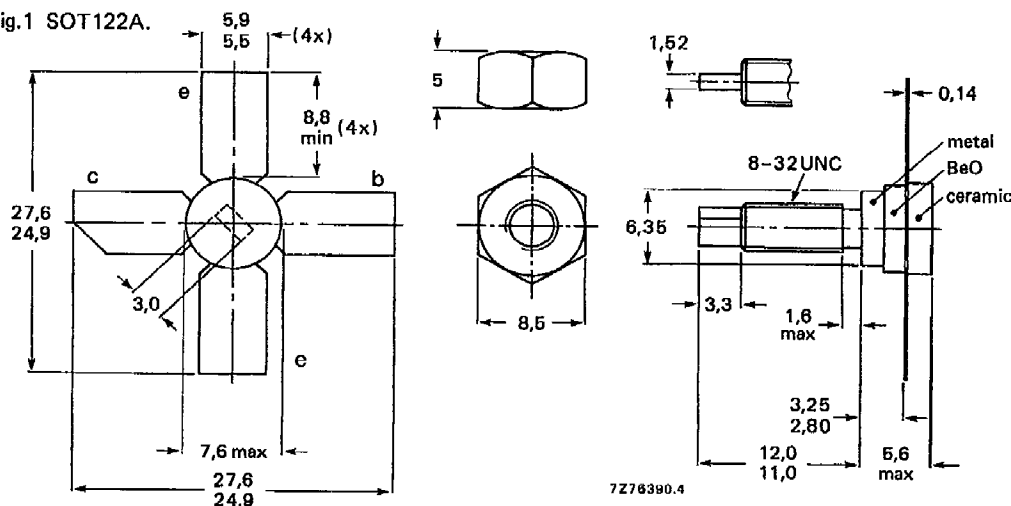
R.F. performance up to $T_h = 25^\circ\text{C}$ in an unneutralized common-emitter class-B circuit

mode of operation	V_{CE} V	f MHz	P_L W	G_p dB	η %	$\bar{Z}_i$ Ω	$\bar{Y}_L$ mS
c.w.	12,5	470	2	$> 9,0$	> 60	$3,5 + j0,4$	$28 - j38$
c.w.	12,5	175	2	typ. 13,5	typ. 60	$4,2 - j3,4$	$25 - j24$

MECHANICAL DATA

Dimensions in mm

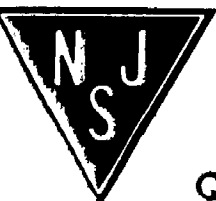
Fig.1 SOT122A.



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.



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RATINGS

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

Collector-emitter voltage ($V_{BE} = 0$)

peak value

V_{CESM} max 36 V

Collector-emitter voltage (open base)

V_{CEO} max 17 V

Emitter-base voltage (open collector)

V_{EBO} max 4 V

Collector current (d.c.)

I_C max 0,5 A

Collector current (peak value); $f > 1$ MHz

I_{CM} max 1,5 A

Total power dissipation (d.c. and r.f.) up to $T_h = 70^\circ\text{C}$

P_{tot} max 8,5 W

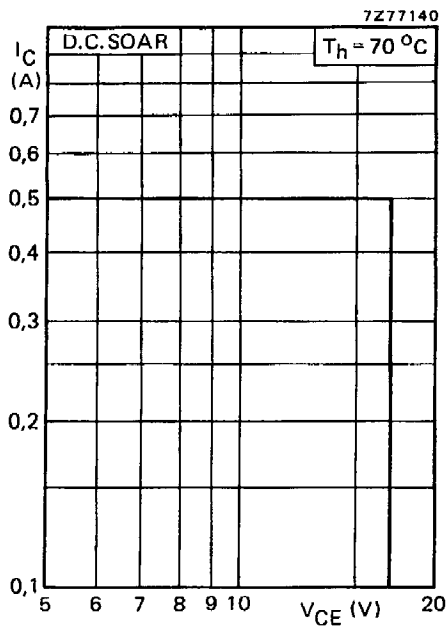


Fig.2.

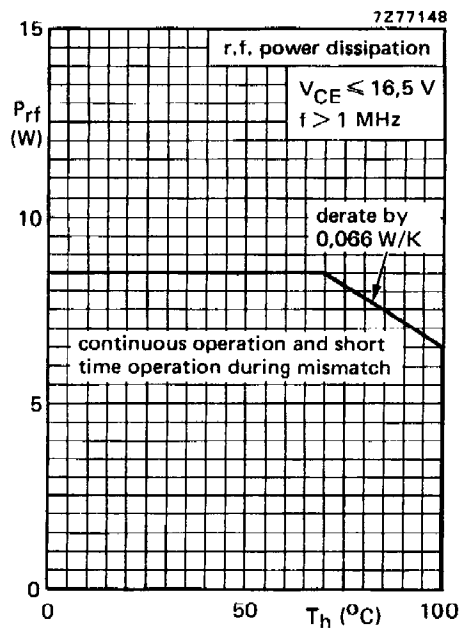


Fig.3.

Storage temperature

T_{stg} -65 to $+150^\circ\text{C}$

Operating junction temperature

T_j max 200 $^\circ\text{C}$

THERMAL RESISTANCE

From junction to mounting base

$R_{th j-mb}$ = 14,5 K/W

From mounting base to heatsink

$R_{th mb-h}$ = 0,6 K/W

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CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$

Breakdown voltages

Collector-emitter voltage

$V_{BE} = 0; I_C = 5\text{ mA}$

$V_{(BR)CES} > 36\text{ V}$

Collector-emitter voltage

open base; $I_C = 25\text{ mA}$

$V_{(BR)CEO} > 17\text{ V}$

Emitter-base voltage

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

$V_{(BR)EBO} > 4\text{ V}$

Collector cut-off current

$V_{BE} = 0; V_{CE} = 17\text{ V}$

$I_{CES} < 2\text{ mA}$

D.C. current gain *

$I_C = 250\text{ mA}; V_{CE} = 5\text{ V}$

$h_{FE} > \begin{matrix} 10 \\ \text{typ} \\ 35 \end{matrix}$

Collector-emitter saturation voltage *

$I_C = 750\text{ mA}; I_B = 150\text{ mA}$

$V_{CEsat} \text{ typ } 0,6\text{ V}$

Transition frequency at $f = 500\text{ MHz}$ *

$I_C = 250\text{ mA}; V_{CE} = 12,5\text{ V}$

$f_T \text{ typ } 1,5\text{ GHz}$

$I_C = 750\text{ mA}; V_{CE} = 12,5\text{ V}$

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

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

$I_E = I_B = 0; V_{CB} = 12,5\text{ V}$

$C_C \text{ typ } 8\text{ pF}$

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

$I_C = 20\text{ mA}; V_{CE} = 12,5\text{ V}$

$C_{re} \text{ typ } 3,6\text{ pF}$

Collector-stud capacitance

$C_{cs} \text{ typ } 1,2\text{ pF}$