New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

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 ¼" capstan envelope with a ceramic cap.

QUICK REFERENCE DATA

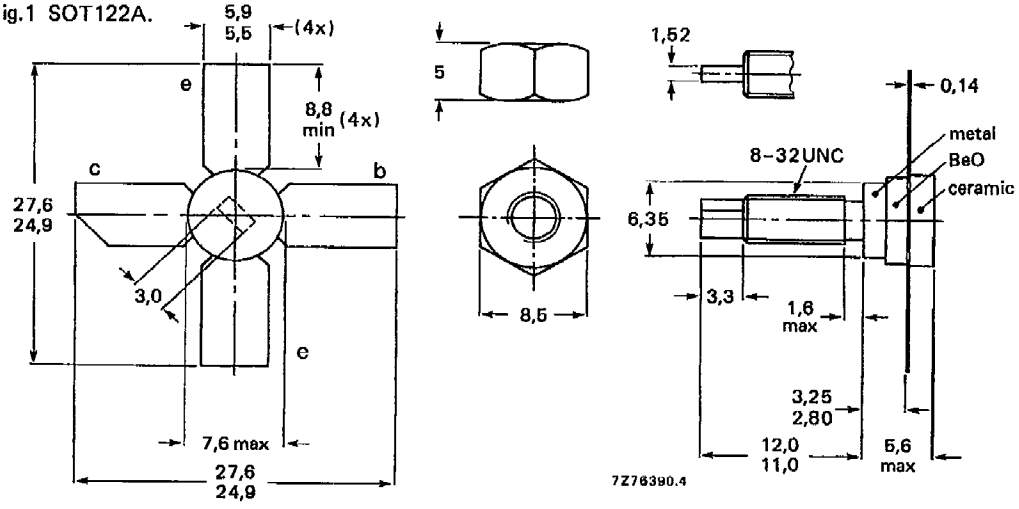
R.F. performance up to T_h = 25 °C in an unneutralized common-emitter class-B circuit

mode of operation	V_{CE} V	f MHz	P_L W	G_p dB	η %	$\overline{z_i}$ Ω	$\overline{Y_L}$ 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.

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 °C	P_{tot}	max	8,5 W

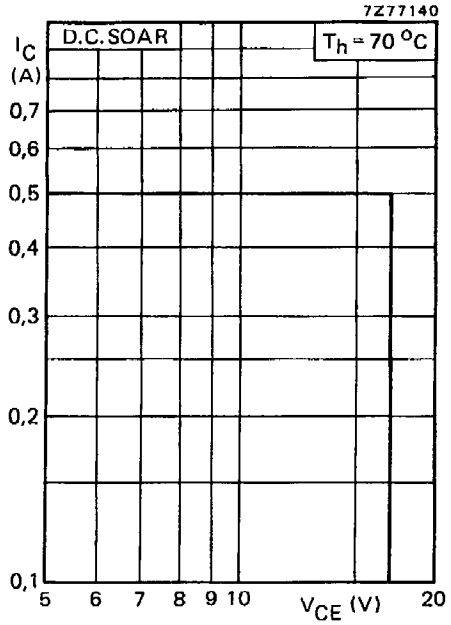


Fig.2.

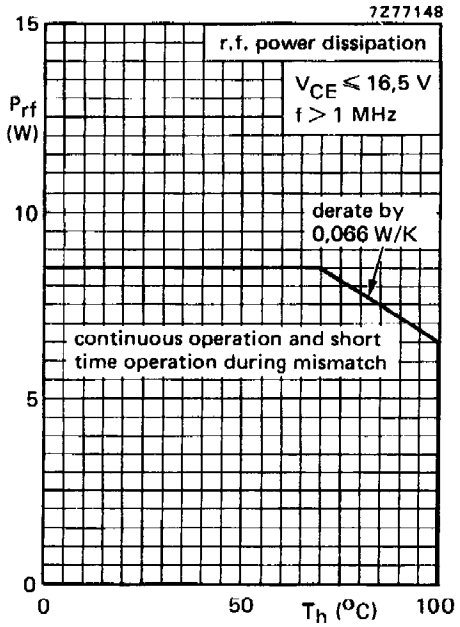


Fig.3.

Storage temperature	T_{stg}		−65 to +150 °C
Operating junction temperature	T_j	max	200 °C

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	=	14,5 K/W
From mounting base to heatsink	$R_{th\ mb\text{-}h}$	=	0,6 K/W

CHARACTERISTICS

T_j = 25 °C

Breakdown voltages			
Collector-emitter voltage V_{BE} = 0; I_C = 5 mA	$V_{(BR)CES}$	>	36 V
Collector-emitter voltage open base; I_C = 25 mA	$V_{(BR)CEO}$	>	17 V
Emitter-base voltage open collector; I_E = 2 mA	$V_{(BR)EBO}$	>	4 V
Collector cut-off current			
V_{BE} = 0; V_{CE} = 17 V	I_{CES}	<	2 mA
D.C. current gain *			
I_C = 250 mA; V_{CE} = 5 V	h_{FE}	>	10
		typ	35
Collector-emitter saturation voltage *			
I_C = 750 mA; I_B = 150 mA	V_{CEsat}	typ	0,6 V
Transition frequency at f = 500 MHz *			
I_C = 250 mA; V_{CE} = 12,5 V	f_T	typ	1,5 GHz
I_C = 750 mA; V_{CE} = 12,5 V	f_T	typ	1,0 GHz
Collector capacitance at f = 1 MHz			
$I_E = I_e$ = 0; V_{CB} = 12,5 V	C_c	typ	8 pF
Feedback capacitance at f = 1 MHz			
I_C = 20 mA; V_{CE} = 12,5 V	C_{re}	typ	3,6 pF
Collector-stud capacitance	C_{cs}	typ	1,2 pF