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

BLX91A

U.H.F. POWER TRANSISTOR

N-P-N silicon planar epitaxial transistor intended for transmitting applications in class-A, B or C with a supply voltage up to 28 V. The transistor is resistance stabilized and is guaranteed to withstand severe load mismatch conditions. Gold metallization ensures extremely high reliability.

It has a capstan envelope with a moulded cap. All leads are isolated from the stud.

QUICK REFERENCE DATA

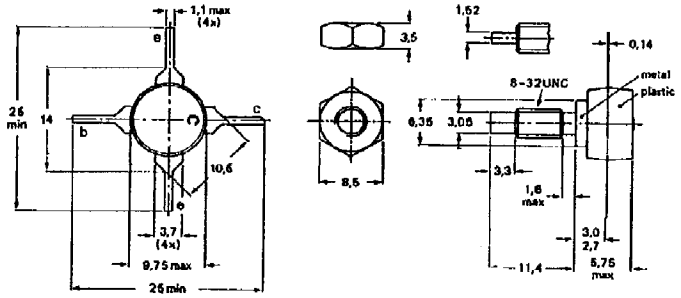
R.F. performance up to T_h = 25 °C in an unneutralized common-emitter class-B circuit

mode of operation	V_{CE} V	f MHz	P_S mW	P_L W	I_C mA	G_p dB	η %	$\overline{z_i}$ Ω	$\overline{Y_L}$ mS
c.w.	24	470	typ. 50	0,85	typ. 67	typ. 12,3	typ. 53	–	–
c.w.	28	470	< 80	1,0	< 71	> 11,0	> 50	–	–
c.w.	28	470	typ. 80	1,45	typ. 86	typ. 12,6	typ. 60	2,5 + j0,2	3,4 – j16
c.w.	28	1000	typ. 400	1,4	typ.100	typ. 5,4	typ. 50	–	–

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.

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

Voltages				
Collector-base voltage (open emitter) peak value	V_{CBOM}	max.	65	V
Collector-emitter voltage (V_{BE} = 0) peak value	V_{CESM}	max.	65	V
Collector-emitter voltage (open base)	V_{CEO}	max.	33	V
Emitter-base voltage (open collector)	V_{EBO}	max.	4,0	V
Currents				
Collector current (d.c.)	I_C	max.	400	mA
Collector current (peak value); f ≥ 10 MHz	I_{CM}	max.	800	mA
Power dissipation				
Total power dissipation up to T_h = 70 °C f ≥ 10 MHz	P_{tot}	max.	4,0	W
Temperatures				
Storage temperature	T_{stg}	−65 to +150		°C
Operating junction temperature	T_j	max.	200	°C

THERMAL RESISTANCE

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

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Breakdown voltages				
Collector-base voltage open emitter, I_C = 10 mA	$V_{(BR)CBO}$	>	65	V
Collector-emitter voltage V_{BE} = 0, I_C = 10 mA	$V_{(BR)CES}$	>	65	V
Collector-emitter voltage open base, I_C = 25 mA	$V_{(BR)CEO}$	>	33	V
Emitter-base voltage open collector, I_E = 1,0 mA	$V_{(BR)EBO}$	>	4,0	V
D.C. current gain				
I_C = 100 mA; V_{CE} = 5,0 V	h_{FE}	>	10	
		typ.	35	
Transition frequency				
I_C = 50 mA; V_{CE} = 5,0 V	f_T	typ.	1,2	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	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.	2,0	pF