

VHF power transistor

BLY87C

DESCRIPTION

N-P-N silicon planar epitaxial transistor intended for use in class-A, B and C operated mobile, h.f. and v.h.f. transmitters with a nominal supply voltage of 13,5 V. The transistor is resistance stabilized and is guaranteed to withstand severe load mismatch conditions with a supply over-voltage 16,5 V.

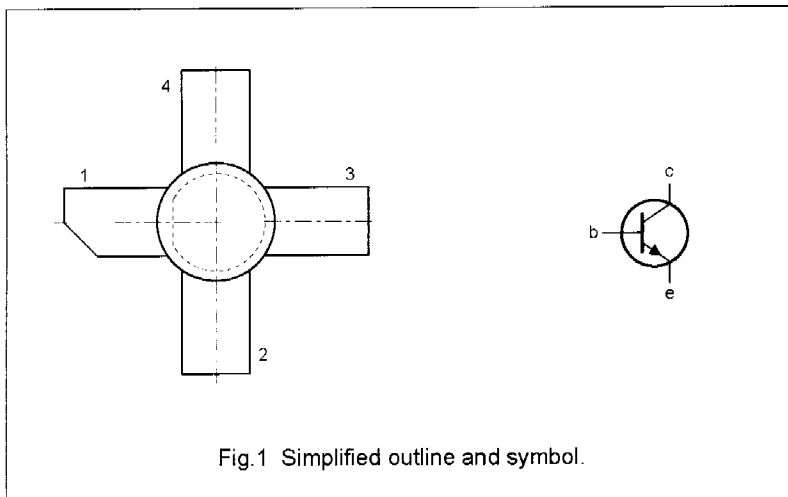
It has a 3/8" capstan envelope with a ceramic cap. All leads are isolated from the stud.

QUICK REFERENCE DATA

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

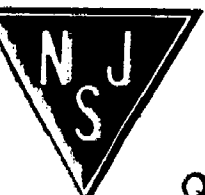
MODE OF OPERATION	V_{CE} V	f MHz	P_L W	G_p dB	η %	Z_i Ω	\bar{Y}_L mS
c.w.	13,5	175	8	> 12,0	> 60	2,2 + j0,4	96 - j28
c.w.	12,5	175	8	typ. 11,5	typ. 65	-	-

PIN CONFIGURATION



PINNING - SOT120

PIN	DESCRIPTION
1	collector
2	emitter
3	base
4	emitter



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RATINGS

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

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

peak value

V_{CESM} max. 36 V

Collector-emitter voltage (open base)

V_{CEO} max. 18 V

Emitter-base voltage (open collector)

V_{EBO} max. 4 V

Collector current (average)

$I_{C(AV)}$ max. 1,5 A

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

I_{CM} max. 4,0 A

R.F. power dissipation ($f > 1$ MHz); $T_{mb} = 25$ °C

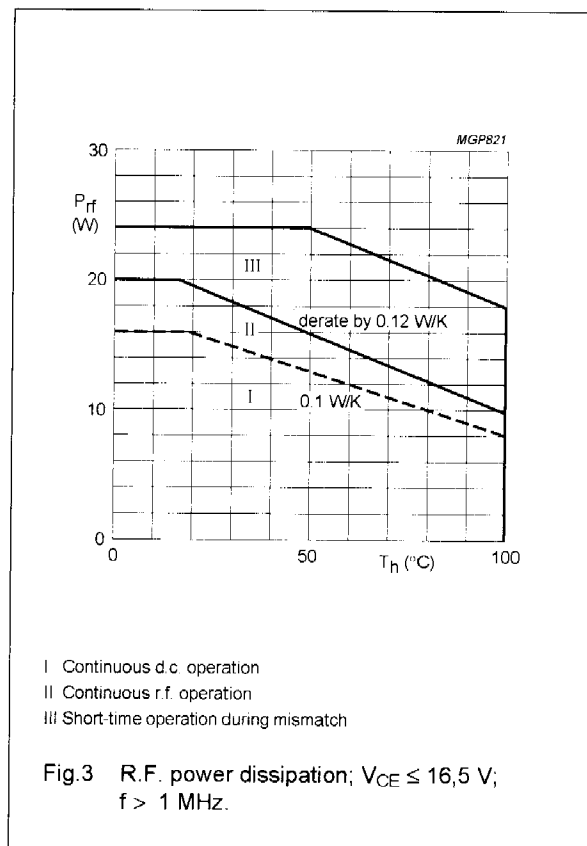
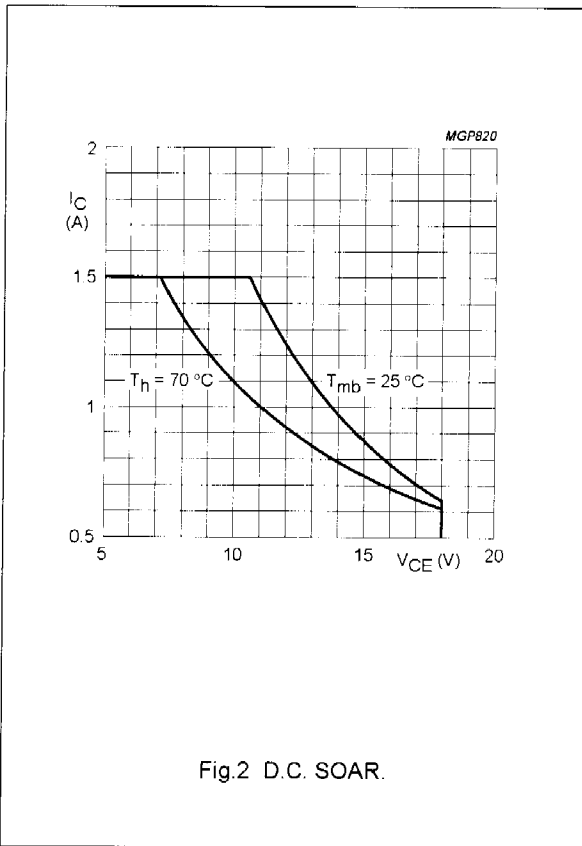
P_{rf} max. 20 W

Storage temperature

T_{stg} -65 to + 150 °C

Operating junction temperature

T_j max. 200 °C



THERMAL RESISTANCE

(dissipation = 8 W; $T_{mb} = 73,5$ °C, i.e. $T_h = 70$ °C)

From junction to mounting base (d.c. dissipation)

$R_{th\ j-mb(dc)}$ = 10,7 K/W

From junction to mounting base (r.f. dissipation)

$R_{th\ j-mb(rf)}$ = 8,6 K/W

From mounting base to heatsink

$R_{th\ mb-h}$ = 0,45 K/W

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

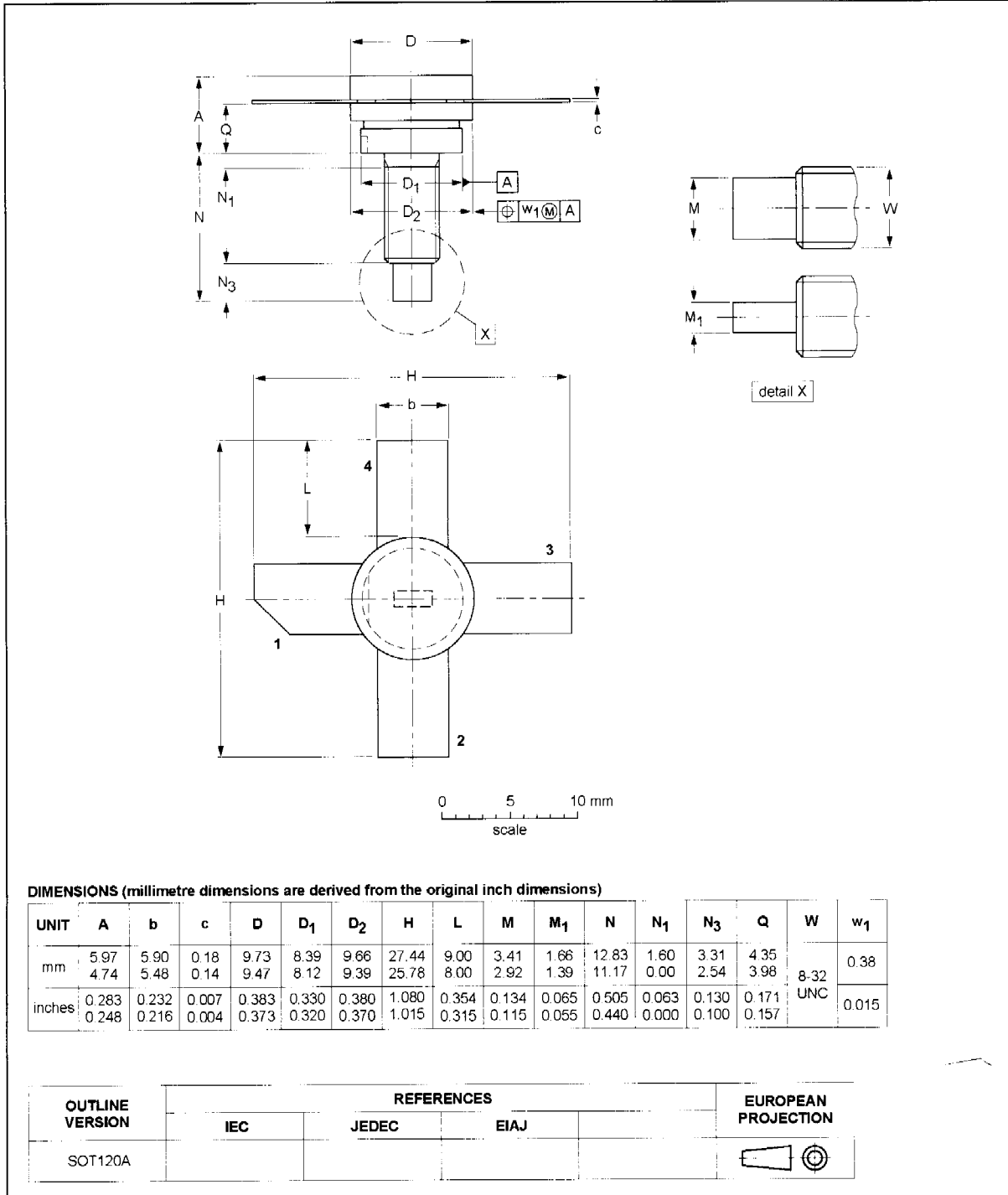
Collector-emitter breakdown voltage $V_{BE} = 0; I_C = 5\text{ mA}$	$V_{(BR)CES}$	>	36 V
Collector-emitter breakdown voltage open base; $I_C = 25\text{ mA}$	$V_{(BR)CEO}$	>	18 V
Emitter-base breakdown voltage open collector; $I_E = 1\text{ mA}$	$V_{(BR)EBO}$	>	4 V
Collector cut-off current $V_{BE} = 0; V_{CE} = 18\text{ V}$	I_{CES}	<	2 mA
Second breakdown energy; $L = 25\text{ mH}; f = 50\text{ Hz}$ open base	E_{SBO}	>	0,5 mJ
$R_{BE} = 10\ \Omega$	E_{SBR}	>	0,5 mJ
D.C. current gain ⁽¹⁾ $I_C = 0,75\text{ A}; V_{CE} = 5\text{ V}$	h_{FE}	typ.	40 10 to 100
Collector-emitter saturation voltage ⁽¹⁾ $I_C = 2\text{ A}; I_B = 0,4\text{ A}$	V_{CEsat}	typ.	0,85 V
Transition frequency at $f = 100\text{ MHz}$ ⁽¹⁾ $-I_E = 0,75\text{ A}; V_{CB} = 13,5\text{ V}$	f_T	typ.	950 MHz
$-I_E = 2\text{ A}; V_{CB} = 13,5\text{ V}$	f_T	typ.	850 MHz
Collector capacitance at $f = 1\text{ MHz}$ $I_E = I_e = 0; V_{CB} = 13,5\text{ V}$	C_C	typ.	16,5 pF
Feedback capacitance at $f = 1\text{ MHz}$ $I_C = 100\text{ mA}; V_{CE} = 13,5\text{ V}$	C_{re}	typ.	12 pF
Collector-stud capacitance	C_{cs}	typ.	2 pF

Note1. Measured under pulse conditions: $t_p \leq 200\ \mu\text{s}; \delta \leq 0,02$.

PACKAGE OUTLINE

Studded ceramic package; 4 leads

SOT120A



OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION
	IEC	JEDEC	EIAJ	
SOT120A				