

BFS22A

V.H.F. POWER TRANSISTOR

N-P-N epitaxial planar transistor intended for use in class-A, B and C operated mobile, industrial and military transmitters with a supply voltage of 13,5 V. The transistor is resistance stabilized. Every transistor is tested under severe load mismatch conditions with a supply over-voltage to 16,5 V.

It has a TO-39 metal envelope with the collector connected to the case.

QUICK REFERENCE DATA

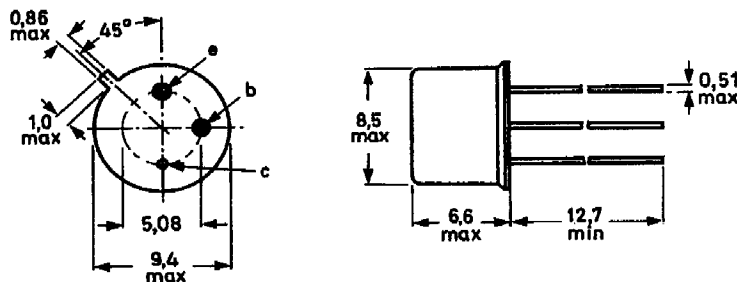
R.F. performance up to $T_{mb} = 25\text{ }^{\circ}\text{C}$ in an unneutralized common-emitter class-B circuit

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.	13,5	175	4	> 8	> 60	$3,9 + j2,2$	$37 - j22$
c.w.	12,5	175	4	typ. 8	typ. 60	-	-

MECHANICAL DATA

Dimensions in mm

Fig.1 TO-39/1; collector connected to case.



Maximum lead diameter is guaranteed only for 12,7 mm.
 Accessories: 56245 (distance disc).



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CHARACTERISTICS

$T_j = 25^\circ\text{C}$ unless otherwise specified

Collector cut-off current

$I_B = 0; V_{CE} = 14\text{ V}$

$I_{CEO} < 5\text{ mA}$

Breakdown voltages

Collector-base voltage

open emitter, $I_C = 1\text{ mA}$

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

Collector-emitter voltage

open base, $I_C = 10\text{ mA}$

$V_{(BR)CEO} > 18\text{ V}$

Emitter-base voltage

open collector, $I_E = 1\text{ mA}$

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

Transient energy

$L = 25\text{ mH}; f = 50\text{ Hz}$

open base

$-V_{BE} = 1.5\text{ V}; R_{BE} = 33\ \Omega$

$E > 0.5\text{ mS}$

$E > 0.5\text{ mS}$

D. C. current gain

$I_C = 500\text{ mA}; V_{CE} = 5\text{ V}$

$h_{FE} > 5$

Transition frequency

$I_C = 350\text{ mA}; V_{CE} = 10\text{ V}$

f_T typ. 700 MHz

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

$I_E = I_C = 0; V_{CB} = 15\text{ V}$

C_c typ. 15 pF
< 20 pF

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

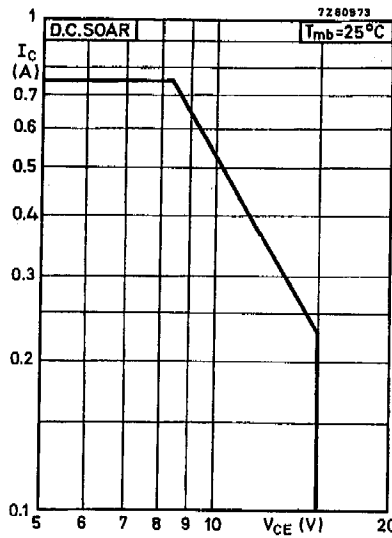
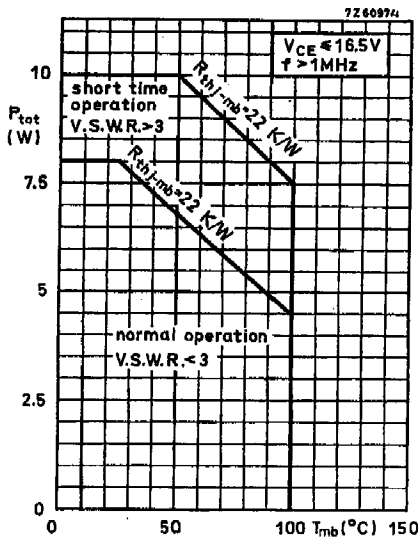
$I_C = 50\text{ mA}; V_{CE} = 15\text{ V}$

$-C_{re}$ typ. 11 pF

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

Collector-base voltage (open emitter) peak value	V_{CBOM}	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.	0.75	A
Collector current (peak value) $f > 1$ MHz	I_{CM}	max.	2.25	A
Total power dissipation up to $T_{mb} = 25^\circ\text{C}$ $f > 1$ MHz	P_{tot}	max.	8	W



Storage temperature
Operating junction temperature

T_{stg}	-65 to +200	$^\circ\text{C}$
T_j	max. 200	$^\circ\text{C}$

THERMAL RESISTANCE

From junction to mounting base
From mounting base to heatsink
with a boron nitride washer
for electrical insulation

$R_{th\ j-mb}$	=	22	K/W
$R_{th\ mb-h}$	=	2.5	K/W