

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

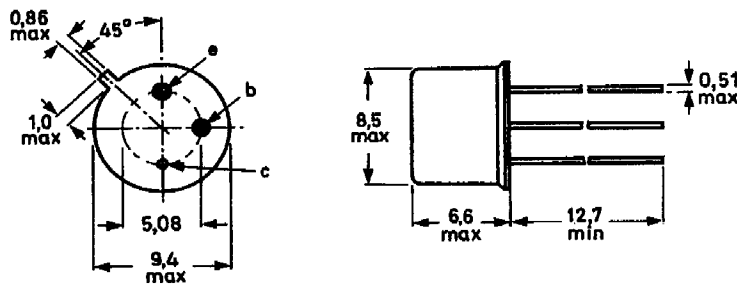
R.F. performance up to  $T_{mb} = 25\text{ }^{\circ}\text{C}$  in an unneutralized common-emitter class-B circuit

mode of operation	$V_{CE}$ V	f MHz	$P_L$ W	$G_p$ dB	$\eta$ %	$\bar{z}_i$ $\Omega$	$\bar{Y}_L$ 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  $f = 1\text{ MHz}$

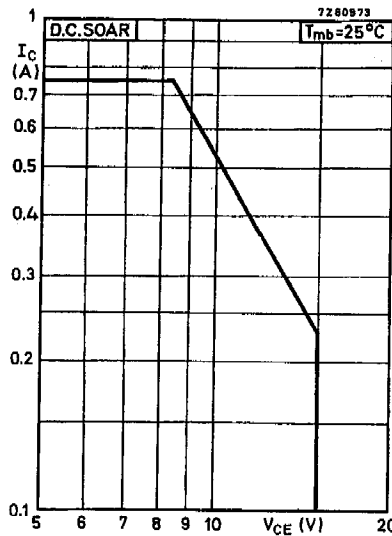
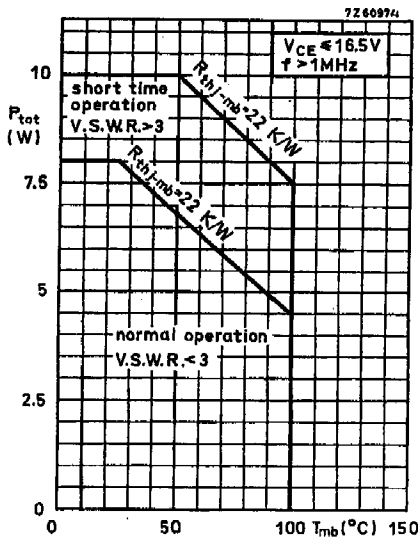
$I_C = 50\text{ mA}; V_{CE} = 15\text{ V}$

$-C_{re}$  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

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