

T-33-05

NPN 7 GHz wideband transistor

BFQ741

PHILIPS INTERNATIONAL

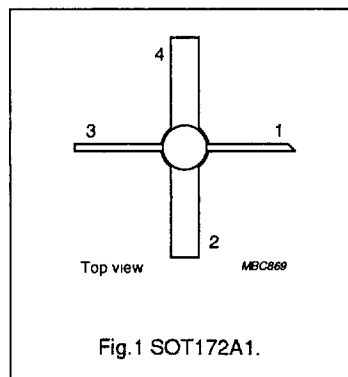
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FEATURES

- Low distortion
- Gold metallization ensures excellent reliability
- SOT172 ceramic envelope
- High output voltage
- Integrated emitter-ballasting resistors.

PINNING

PIN	DESCRIPTION
1	collector
2	emitter
3	base
4	emitter



DESCRIPTION

NPN silicon planar epitaxial transistor, mounted in a 4-lead dual-emitter SOT172A1 envelope with a ceramic cap. It is primarily intended for use in MATV and CATV amplifiers.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	—	25	V
V_{CEO}	collector-emitter voltage	open base	—	19	V
I_C	DC collector current		—	300	mA
P_{tot}	total power dissipation	up to $T_{mb} = 120\text{ }^{\circ}\text{C}$	—	4	W
h_{FE}	DC current gain	$I_C = 200\text{ mA}$; $V_{CE} = 18\text{ V}$	120	—	
f_T	transition frequency	$I_C = 200\text{ mA}$; $V_{CE} = 18\text{ V}$; $f = 500\text{ MHz}$	7	—	GHz
C_{re}	feedback capacitance	$I_C = 0$; $V_{CE} = 18\text{ V}$; $f = 1\text{ MHz}$	1.8	—	pF
G_{UM}	maximum unilateral power gain	$I_C = 200\text{ mA}$; $V_{CE} = 18\text{ V}$; $f = 800\text{ MHz}$; $T_{amb} = 25\text{ }^{\circ}\text{C}$	14	—	dB
V_O	output voltage	note 1	1.6	—	V
T_j	junction temperature		—	200	$^{\circ}\text{C}$

Note

- $d_{im} = -60\text{ dB}$ (3-tone); $I_C = 240\text{ mA}$; $V_{CE} = 18\text{ V}$; $R_L = 75\text{ }\Omega$;
 $V_p = V_O$; $V_q = V_r = V_O - 6\text{ dB}$;
 $f_p = 795.25\text{ MHz}$; $f_q = 803.25\text{ MHz}$; $f_r = 805.25\text{ MHz}$; measured at $f = 793.25\text{ MHz}$.

THERMAL RESISTANCE

SYMBOL	PARAMETER	THERMAL RESISTANCE
$R_{th, j-mb}$	thermal resistance from junction to mounting base	20 K/W