

NPN 9 GHz wideband transistor

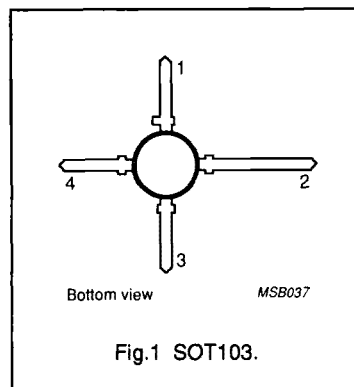
BFR541

FEATURES

- High power gain
- Low noise figure
- High transition frequency
- Gold metallization ensures excellent reliability.

PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	emitter
4	base



DESCRIPTION

The BFR541 is an NPN silicon planar epitaxial transistor, intended for wideband applications up to 3 GHz, such as MATV/CATV amplifiers, repeater amplifiers in fibre-optic systems and RF communications subscriber equipment.

The transistor is mounted in a plastic SOT103 envelope.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–	20	V
V_{CES}	collector-emitter voltage	$R_{BE} = 0$	–	–	15	V
I_C	DC collector current		–	–	120	mA
P_{tot}	total power dissipation	up to $T_s = 140\text{ °C}$ (note 1)	–	–	650	mW
h_{FE}	DC current gain	$V_{CE} = 8\text{ V}; I_C = 40\text{ mA}$	60	120	250	
C_{re}	feedback capacitance	$V_{CE} = 8\text{ V}; I_C = I_c = 0; f = 1\text{ MHz}$	–	0.5	–	pF
f_T	transition frequency	$V_{CE} = 8\text{ V}; I_C = 40\text{ mA}$	–	9	–	GHz
G_{UM}	maximum unilateral power gain	$V_{CE} = 8\text{ V}; I_C = 40\text{ mA}; f = 900\text{ MHz}$	–	18	–	dB
$ S_{21} ^2$	insertion power gain	$V_{CE} = 8\text{ V}; I_C = 40\text{ mA}; f = 900\text{ MHz}$	15	16	–	dB
F	noise figure	$V_{CE} = 8\text{ V}; I_C = 10\text{ mA}; f = 900\text{ MHz}$	–	1.3	1.8	dB
$R_{th\ j-s}$	thermal resistance from junction to soldering point	note 1	–	–	55	K/W
T_j	junction temperature		–	–	175	°C

Note

1. T_s is the temperature at the soldering point of the collector tab.