

UHF power MOS transistor

BLF521

FEATURES

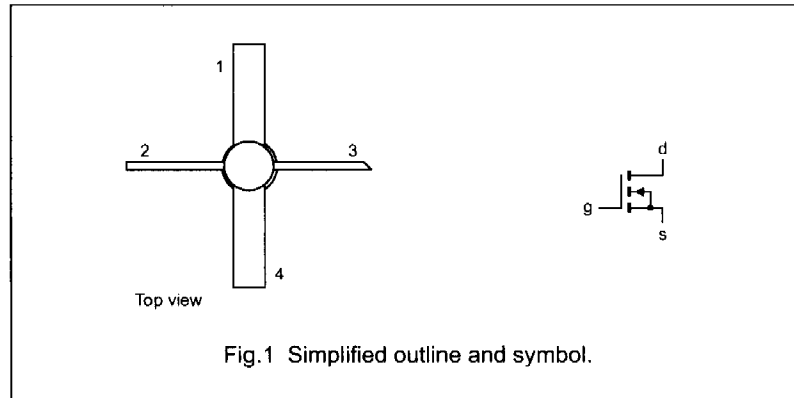
- High power gain
- Easy power control
- Gold metallization
- Good thermal stability
- Withstands full load mismatch
- Designed for broadband operation.

DESCRIPTION

Silicon N-channel enhancement mode vertical D-MOS transistor designed for communications transmitter applications in the UHF frequency range.

The transistor is encapsulated in a 4-lead, SOT172D studless package, with a ceramic cap. All leads are isolated from the mounting base.

PIN CONFIGURATION



CAUTION

This product is supplied in anti-static packing to prevent damage caused by electrostatic discharge during transport and handling.

PINNING - SOT172D

PIN	DESCRIPTION
1	source
2	gate
3	drain
4	source

WARNING

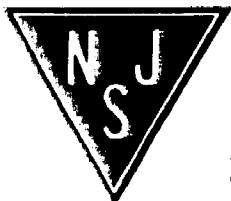
Product and environmental safety - toxic materials

This product contains beryllium oxide. The product is entirely safe provided that the BeO disc is not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with the general or domestic waste.

QUICK REFERENCE DATA

RF performance at $T_{amb} = 25^\circ\text{C}$ in a common source test circuit.

MODE OF OPERATION	f (MHz)	V_{DS} (V)	P_L (W)	G_p (dB)	η_D (%)
CW, class-B	500	12.5	2	>10	>50



LIMITING VALUES

In accordance with the Absolute Maximum System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DS}	drain-source voltage		–	40	V
V_{GS}	gate-source voltage		–	±20	V
I_D	drain current (DC)		–	1	A
P_{tot}	total power dissipation	$T_{mb} \leq 25\text{ °C}$	–	10	W
T_{stg}	storage temperature		–65	150	°C
T_j	junction temperature		–	200	°C

THERMAL CHARACTERISTICS

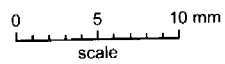
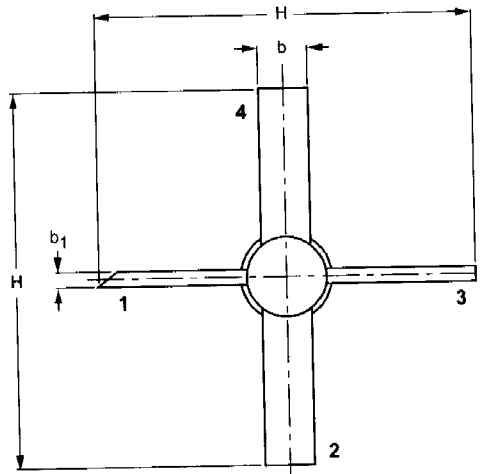
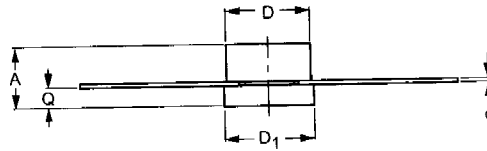
SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-mb}$	thermal resistance from junction to mounting base	17.5	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient; note 1	75	K/W

CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)DSS}$	drain-source breakdown voltage	$V_{GS} = 0; I_D = 3\text{ mA}$	40	–	–	V
I_{DSS}	drain-source leakage current	$V_{GS} = 0; V_{DS} = 12.5\text{ V}$	–	–	10	µA
I_{GSS}	gate-source leakage current	$V_{GS} = \pm 20\text{ V}; V_{DS} = 0$	–	–	1	µA
V_{GSth}	gate-source threshold voltage	$I_D = 3\text{ mA}; V_{DS} = 10\text{ V}$	2	–	4.5	V
g_{fs}	forward transconductance	$I_D = 0.3\text{ A}; V_{DS} = 10\text{ V}$	80	135	–	mS
R_{Dson}	drain-source on-state resistance	$I_D = 0.3\text{ A}; V_{GS} = 15\text{ V}$	–	3.5	4	Ω
I_{DSX}	on-state drain current	$V_{GS} = 15\text{ V}; V_{DS} = 10\text{ V}$	–	1.3	–	A
C_{is}	input capacitance	$V_{GS} = 0; V_{DS} = 12.5\text{ V}; f = 1\text{ MHz}$	–	5.3	–	pF
C_{os}	output capacitance	$V_{GS} = 0; V_{DS} = 12.5\text{ V}; f = 1\text{ MHz}$	–	7.8	–	pF
C_{rs}	feedback capacitance	$V_{GS} = 0; V_{DS} = 12.5\text{ V}; f = 1\text{ MHz}$	–	1.8	–	pF

 V_{GS} group indicator

GROUP	LIMITS (V)		GROUP	LIMITS (V)	
	MIN.	MAX.		MIN.	MAX.
A	2.0	2.1	O	3.3	3.4
B	2.1	2.2	P	3.4	3.5
C	2.2	2.3	Q	3.5	3.6
D	2.3	2.4	R	3.6	3.7
E	2.4	2.5	S	3.7	3.8
F	2.5	2.6	T	3.8	3.9
G	2.6	2.7	U	3.9	4.0
H	2.7	2.8	V	4.0	4.1
J	2.8	2.9	W	4.1	4.2
K	2.9	3.0	X	4.2	4.3
L	3.0	3.1	Y	4.3	4.4
M	3.1	3.2	Z	4.4	4.5
N	3.2	3.3			



DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)

UNIT	A	b	b ₁	c	D	D ₁	H	Q
mm	3.71 2.89	3.31 3.04	0.89 0.63	0.16 0.10	5.20 4.95	5.33 5.08	26.17 24.63	1.15 0.88
inches	0.146 0.114	0.13 0.12	0.035 0.025	0.006 0.004	0.205 0.195	0.210 0.200	1.03 0.97	0.045 0.035

OUTLINE VERSION	REFERENCES		
	IEC	JEDEC	EIAJ
SOT172D			