DEVELOPMENT DATA

This data sheet contains advance information and specifications are subject to change without notice.

86D 01064

BLF146

D T-39-13

R.F. POWER MOSFET

N-channel enhancement mode vertical D-MOS transistor intended for use in professional transmitters in the HF range.

The transistor has a 4-lead flange envelope with a ceramic cap (SOT-121). All leads are isolated from the flange.

QUICK REFERENCE DATA

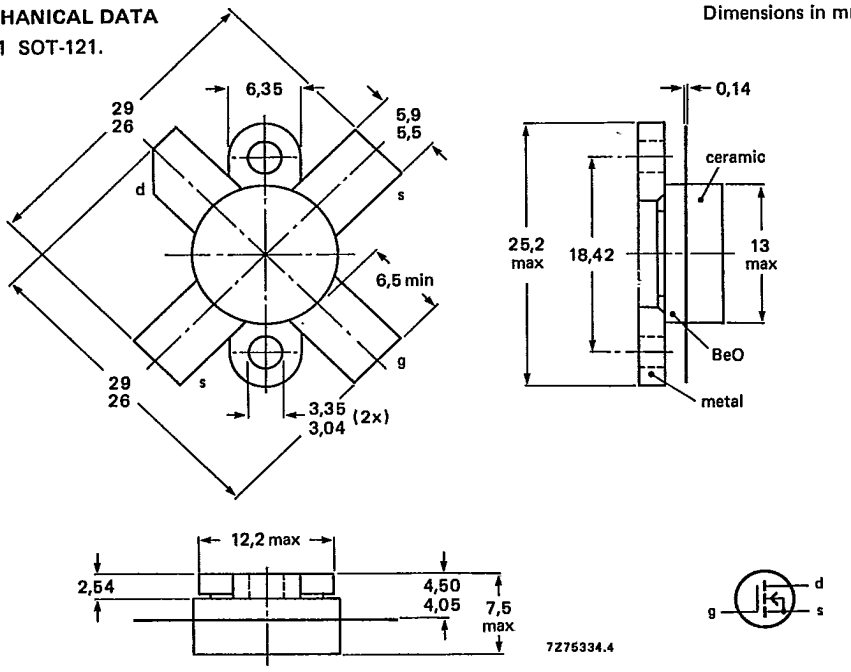
R.F. performance at T_h = 25 °C in common-source class-AB circuit.

mode of operation	f	V_{DS}	P_L (PEP)	G_p	η (2-tone)	d_3
	MHz	V	W	db	%	dB
S.S.B.	28	28	80	> 18	> 35	< −30

MECHANICAL DATA

Dimensions in mm

Fig. 1 SOT-121.



Note: Protect the gate-source input against static charge during transport or handling.

PRODUCT SAFETY This device incorporates beryllium oxide, the dust of which is toxic. The device is entirely safe provided that the BeO disc is not damaged.

RATINGS

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

Drain-source voltage	V_{DS}	max.	65 V
Gate-source voltage	$\pm V_{GS}$	max.	20 V
Drain current (D.C.)	I_D	max.	7 A
Total power dissipation T_{mb} = 25 °C	P_{tot}	max.	130 W
Storage temperature	T_{stg}		−65 to +150 °C
Operating junction temperature	T_j	max.	200 °C

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	max.	1;35 K/W
From mounting base to heatsink	$R_{th\ mb\text{-}h}$	max.	0,2 K/W

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Drain-source breakdown voltage I_D = 50 mA; V_{GS} = 0	$V_{(BR)DS}$	min.	65 V
Drain-source leakage current V_{DS} = 28 V; V_{GS} = 0	I_{DSS}	max.	2,5 mA
Gate-source leakage current $\pm V_{GS}$ = 20 V, V_{DS} = 0	I_{GSS}	max.	1 μA
Gate threshold voltage I_D = 50 mA; V_{DS} = 10 V	$V_{GS(th)}$		2 to 4,5 V
Forward tranconductance → I_D = 5 A; V_{DS} = 10 V	G_{fs}	min. typ.	3 S 3,8 S
Drain-source ON resistance I_D = 5 A; V_{GS} = 10 V	$R_{DS(on)}$	typ.	0,2 Ω
On-state drain current V_{DS} = 10 V; V_{GS} = 10 V	I_{DSX}	typ.	22 A
Input capacitance at f = 1 MHz V_{DS} = 28 V; V_{GS} = 0	C_{iss}	typ.	260 pF
Output capacitance at f = 1 MHz V_{DS} = 28 V; V_{GS} = 0 V	C_{oss}	typ.	180 pF
Feedback capacitance at f = 1 MHz V_{DS} = 28 V; V_{GS} = 0	C_{rss}	typ.	25 pF

APPLICATION INFORMATION

R.F. performance in SSB operation (common-source class-AB circuit)

f_1 = 28.000 MHz; f_2 = 28.001 MHz; T_h = 25 °C, I_{DQ} = 0,6 A; R_{GS} = 18 Ω

mode of operation	f	V_{DS}	P_L (PEP)	G_p	η (2-tone)	d_3
	MHz	V	W	db	%	dB
S.S.B.	28	28	80	> 18	> 35	< −30

Optimum load impedance: 3,3 + j 0,5 Ω

The intermodulation products are measured with respect to the level of one tone.

LOAD MISMATCH

The device is capable of withstanding a full load mismatch (VSWR = 50; all phases) at rated load power and supply voltage (T_h = 25 °C).

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