

**VHF push-pull power MOS transistor**

**BLF278**

**FEATURES**

- High power gain
- Easy power control
- Good thermal stability
- Gold metallization ensures excellent reliability.

**APPLICATIONS**

- Broadcast transmitters in the VHF frequency range.

**DESCRIPTION**

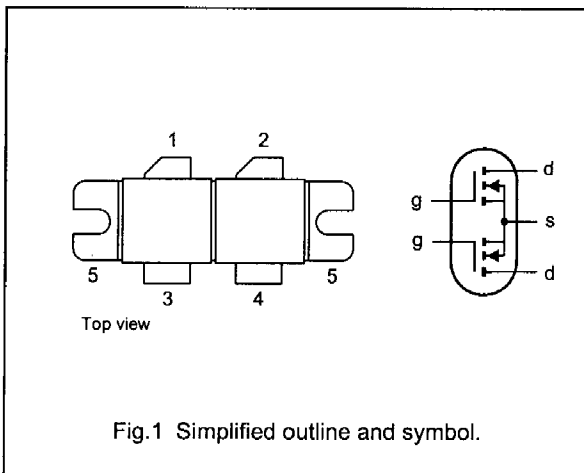
Dual push-pull silicon N-channel enhancement mode vertical D-MOS transistor encapsulated in a 4-lead, SOT262A1 balanced flange package with two ceramic caps. The mounting flange provides the common source connection for the transistors.

**PINNING - SOT262A1**

PIN	DESCRIPTION
1	drain 1
2	drain 2
3	gate 1
4	gate 2
5	source

**CAUTION**

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



**QUICK REFERENCE DATA**

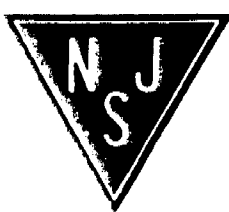
RF performance at  $T_h = 25^\circ\text{C}$  in a push-pull common source test circuit.

MODE OF OPERATION	f (MHz)	$V_{DS}$ (V)	$P_L$ (W)	$G_p$ (dB)	$\eta_D$ (%)
CW, class-B	108	50	300	>20	>60
CW, class-C	108	50	300	typ. 18	typ. 80
CW, class-AB	225	50	250	>14 typ. 16	>50 typ. 55

**WARNING**

**Product and environmental safety - toxic materials**

This product contains beryllium oxide. The product is entirely safe provided that the BeO discs are 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.



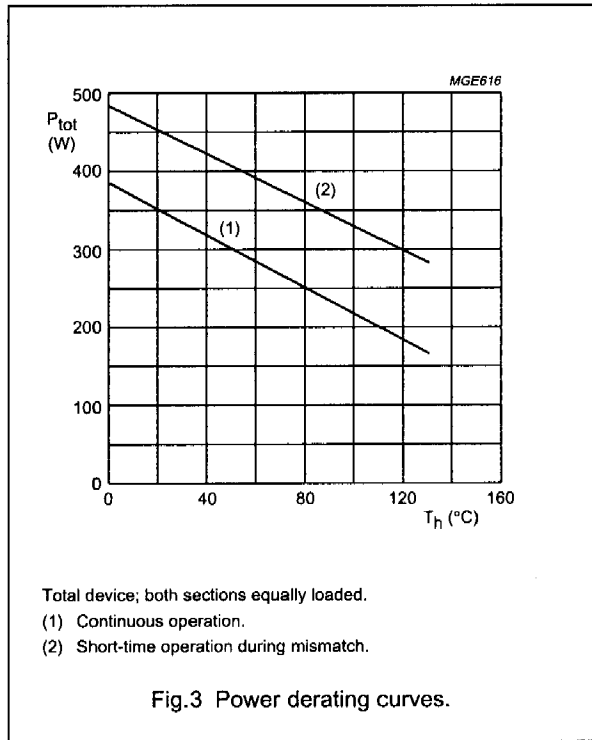
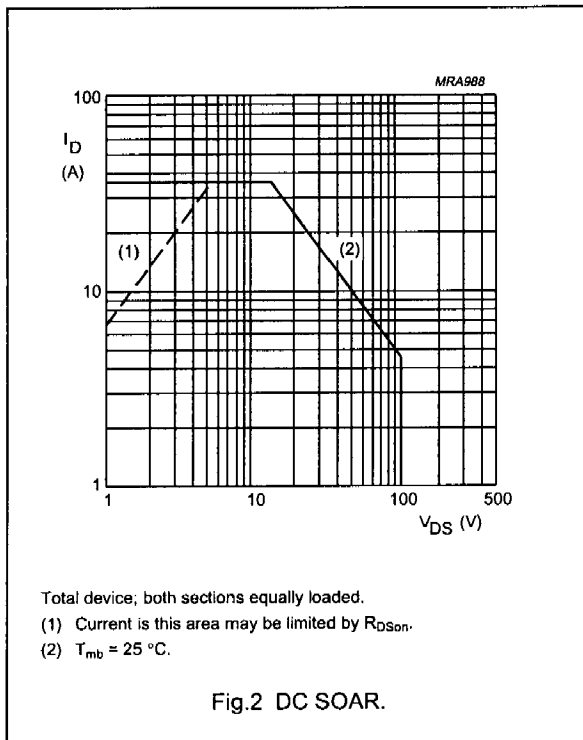
**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per transistor section</b>					
$V_{DS}$	drain-source voltage		-	125	V
$V_{GS}$	gate-source voltage		-	±20	V
$I_D$	drain current (DC)		-	18	A
$P_{tot}$	total power dissipation	$T_{mb} \leq 25\text{ °C}$ ; total device; both sections equally loaded	-	500	W
$T_{stg}$	storage temperature		-65	150	°C
$T_j$	junction temperature		-	200	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-mb}$	thermal resistance from junction to mounting base	total device; both sections equally loaded.	max. 0.35	K/W
$R_{th\ mb-h}$	thermal resistance from mounting base to heatsink	total device; both sections equally loaded.	max. 0.15	K/W



**CHARACTERISTICS**T<sub>j</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
<b>Per transistor section</b>						
V <sub>(BR)DSS</sub>	drain-source breakdown voltage	V <sub>GS</sub> = 0; I <sub>D</sub> = 100 mA	125	–	–	V
I <sub>DSS</sub>	drain-source leakage current	V <sub>GS</sub> = 0; V <sub>DS</sub> = 50 V	–	–	2.5	mA
I <sub>GSS</sub>	gate-source leakage current	V <sub>GS</sub> = ±20 V; V <sub>DS</sub> = 0	–	–	1	μA
V <sub>GStH</sub>	gate-source threshold voltage	V <sub>DS</sub> = 10 V; I <sub>D</sub> = 50 mA	2	–	4.5	V
ΔV <sub>GS</sub>	gate-source voltage difference of both sections	V <sub>DS</sub> = 10 V; I <sub>D</sub> = 50 mA	–	–	100	mV
g <sub>fs</sub>	forward transconductance	V <sub>DS</sub> = 10 V; I <sub>D</sub> = 5 A	4.5	6.2	–	S
g <sub>fs1</sub> /g <sub>fs2</sub>	forward transconductance ratio of both sections	V <sub>DS</sub> = 10 V; I <sub>D</sub> = 5 A	0.9	–	1.1	
R <sub>DSon</sub>	drain-source on-state resistance	V <sub>GS</sub> = 10 V; I <sub>D</sub> = 5 A	–	0.2	0.3	Ω
I <sub>DSX</sub>	drain cut-off current	V <sub>GS</sub> = 10 V; V <sub>DS</sub> = 10 V	–	25	–	A
C <sub>is</sub>	input capacitance	V <sub>GS</sub> = 0; V <sub>DS</sub> = 50 V; f = 1 MHz	–	480	–	pF
C <sub>os</sub>	output capacitance	V <sub>GS</sub> = 0; V <sub>DS</sub> = 50 V; f = 1 MHz	–	190	–	pF
C <sub>fs</sub>	feedback capacitance	V <sub>GS</sub> = 0; V <sub>DS</sub> = 50 V; f = 1 MHz	–	14	–	pF
C <sub>d-f</sub>	drain-flange capacitance		–	5.4	–	pF

**V<sub>GS</sub> 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			