

**UHF linear push-pull power transistor**

**BLV859**

**FEATURES**

- Double internal input and output matching for an optimum wideband capability and high gain
- Polysilicon emitter ballasting resistors for an optimum temperature profile
- Gold metallization ensures excellent reliability.

**APPLICATION**

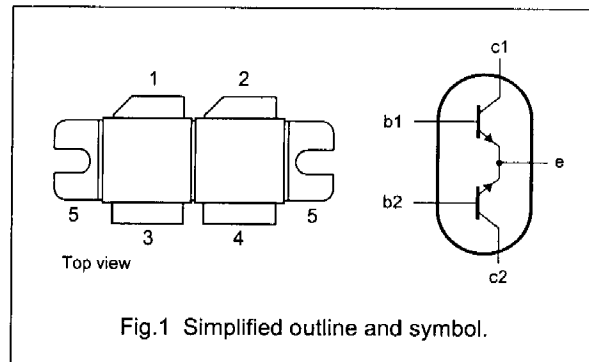
- Common emitter class-A operation in linear transposers/transmitters (television) in the 470 to 860 MHz frequency band.

**DESCRIPTION**

NPN silicon planar transistor with two sections in push-pull configuration. The device is encapsulated in a SOT262B 4-lead rectangular flange package, with two ceramic caps. It delivers a  $P_{o\ sync} = 20\text{ W}$  in class-A operation at 860 MHz and a supply voltage of 25 V.

**PINNING SOT262B**

PIN	SYMBOL	DESCRIPTION
1	c1	collector 1
2	c2	collector 2
3	b1	base 1
4	b2	base 2
5	e	emitter



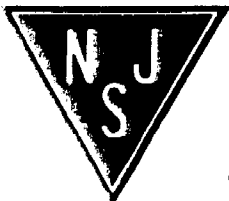
**QUICK REFERENCE DATA**

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

MODE OF OPERATION	f (MHz)	$V_{CE}$ (V)	$I_{CQ}$ (A)	$P_{o\ sync}$ (W)	$G_p$ (dB)
CW class-A	860	25	$2 \times 2.25$	$\geq 20^{(1)}$	$\geq 10^{(1)}$

**Note**

1. Three-tone test signal (-8, -16 and -10 dB);  $d_{im} = -54\text{ dB}$ .



**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 134).

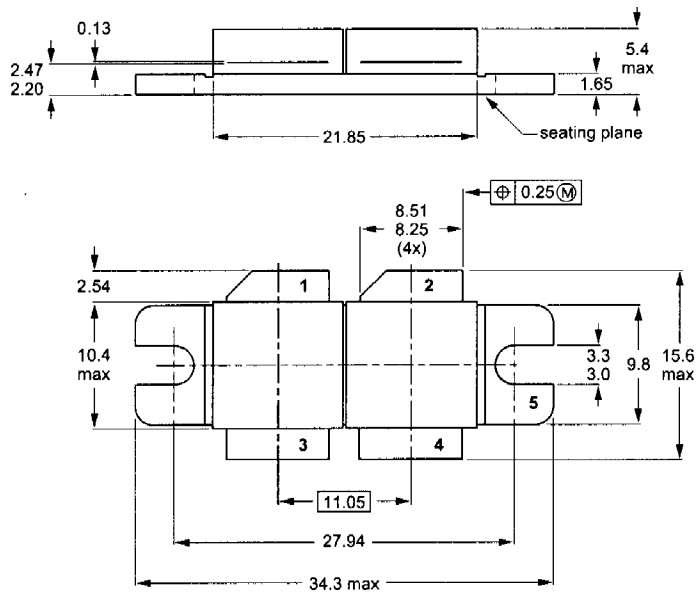
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	–	60	V
$V_{CEO}$	collector-emitter voltage	open base	–	28	V
$V_{EBO}$	emitter-base voltage	open collector	–	2.5	V
$I_C$	collector current (DC)		–	15	A
$I_{C(AV)}$	average collector current		–	15	A
$P_{tot}$	total power dissipation	$T_{mb} = 70\text{ °C}$ ; note 1	–	145	W
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	operating junction temperature		–	200	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-mb}$	thermal resistance from junction to mounting-base	$P_{tot} = 145\text{ W}$ ; $T_{mb} = 70\text{ °C}$ note 1	0.9	K/W
$R_{th\ mb-h}$	thermal resistance from mounting-base to heatsink	note 1	0.15	K/W

**CHARACTERISTICS**Values apply to either transistor section;  $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	$I_C = 30\text{ mA}$ ; $I_E = 0$	60	–	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	$I_C = 60\text{ mA}$ ; $I_B = 0$	28	–	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	$I_E = 1.2\text{ mA}$ ; $I_C = 0$	2.5	–	–	V
$I_{CBO}$	collector-base leakage current	$V_{CB} = 27\text{ V}$ ; $V_{BE} = 0$	–	–	3	mA
$I_{CEO}$	collector-emitter leakage current	$V_{CE} = 20\text{ V}$	–	–	6	mA
$h_{FE}$	DC current gain	$V_{CE} = 25\text{ V}$ ; $I_C = 2.25\text{ A}$	30	–	140	
$C_c$	collector capacitance	$V_{CB} = 25\text{ V}$ ; $I_E = I_e = 0$ ; $f = 1\text{ MHz}$	–	36 <sup>(1)</sup>	–	pF
$C_{re}$	feedback capacitance	$V_{CE} = 25\text{ V}$ ; $I_B = 0$ ; $f = 1\text{ MHz}$	–	22	–	pF



Dimensions in mm.

Torque on screw: min. 0.6 Nm; max. 0.75 Nm.

Recommended screw: cheese-head 4-40 UNC/2A.

Heatsink compound must be applied sparingly and evenly distributed.