

**NPN high-voltage transistors**

**BF469; BF471**

**FEATURES**

- Low feedback capacitance.

**APPLICATIONS**

- Intended for class-B video output stages in television receivers and for high-voltage IF output stages.

**DESCRIPTION**

NPN transistors in a TO-126; SOT32 plastic package.  
 PNP complements: BF470 and BF472.

**PINNING**

PIN	DESCRIPTION
1	emitter
2	collector, connected to mounting base
3	base

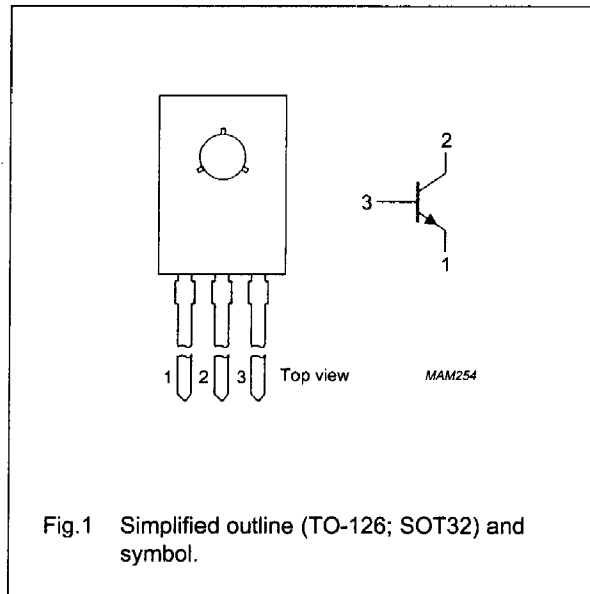


Fig.1 Simplified outline (TO-126; SOT32) and symbol.

**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter			
	BF469		-	250	V
	BF471		-	300	V
$V_{CEO}$	collector-emitter voltage	open base			
	BF469		-	250	V
	BF471		-	300	V
$I_{CM}$	peak collector current		-	100	mA
$P_{tot}$	total power dissipation	$T_{mb} \leq 114^\circ C$	-	1.8	W
$h_{FE}$	DC current gain	$I_C = 25\text{ mA}; V_{CE} = 20\text{ V}$	50	-	
$C_{re}$	feedback capacitance	$I_C = I_c = 0; V_{CE} = 30\text{ V}; f = 1\text{ MHz}$	-	1.8	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	60	-	MHz



# NPN high-voltage transistors

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## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CB0</sub>	collector-base voltage	open emitter	-	250	V
	BF469			300	V
V <sub>CEO</sub>	collector-emitter voltage	open base	-	250	V
	BF471			300	V
V <sub>EBO</sub>	emitter-base voltage	open collector	-	5	V
I <sub>C</sub>	collector current (DC)		-	50	mA
I <sub>CM</sub>	peak collector current		-	100	mA
I <sub>BM</sub>	peak base current		-	50	mA
P <sub>tot</sub>	total power dissipation	T <sub>mb</sub> ≤ 114 °C	-	1.8	W
T <sub>stg</sub>	storage temperature		-65	+150	°C
T <sub>j</sub>	junction temperature		-	150	°C
T <sub>amb</sub>	operating ambient temperature		-65	+150	°C

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	in free air; note 1	100	K/W
R <sub>th j-mb</sub>	thermal resistance from junction to mounting base		20	K/W

### Note

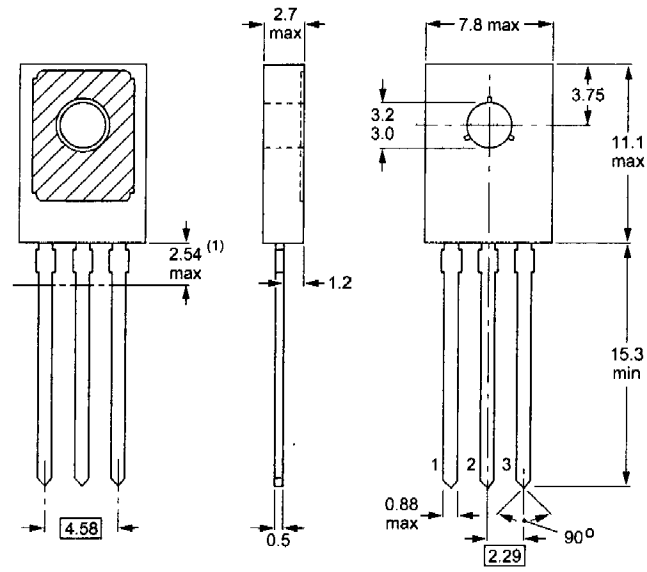
1. Transistor mounted on a printed-circuit board, maximum lead length 4 mm, mounting pad for collector lead minimum 10 × 10 mm.

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = 200 V	-	10	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = 200 V; T <sub>j</sub> = 150 °C	-	10	μA
I <sub>EBO</sub>	emitter cut-off current	I <sub>C</sub> = 0; V <sub>EB</sub> = 5 V	-	50	nA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> = 25 mA; V <sub>CE</sub> = 20 V	50	-	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 30 mA; I <sub>B</sub> = 5 mA	-	0.6	V
C <sub>re</sub>	feedback capacitance	I <sub>C</sub> = I <sub>E</sub> = 0; V <sub>CE</sub> = 30 V; f = 1 MHz	-	1.8	pF
f <sub>T</sub>	transition frequency	I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 10 V; f = 100 MHz	60	-	MHz

PACKAGE OUTLINE



Dimensions in mm.

(1) Terminal dimensions within this zone are uncontrolled.

Fig.2 TO-126; SOT32.