

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

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

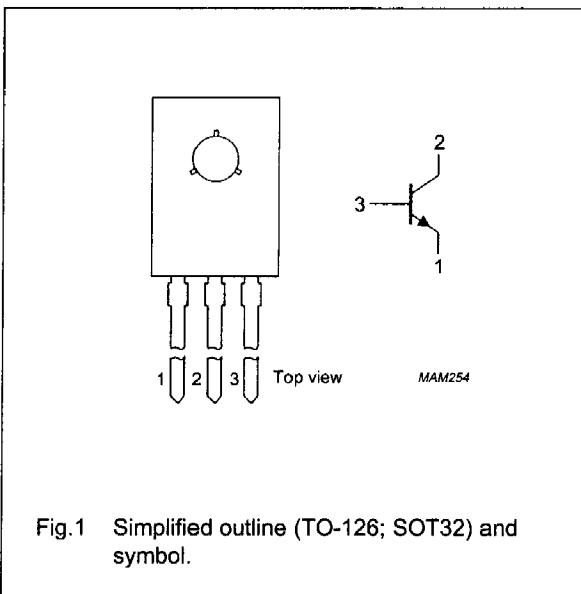
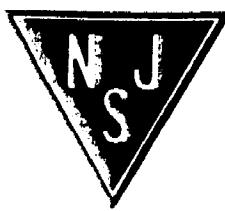


Fig.1 Simplified outline (TO-126; SOT32) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage BF469 BF471	open emitter	-	250	V
V_{CEO}	collector-emitter voltage BF469 BF471	open base	-	250	V
I_{CM}	peak collector current		-	100	mA
P_{tot}	total power dissipation	$T_{mb} \leq 114^\circ\text{C}$	-	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



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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage BF469 BF471	open emitter	—	250	V
			—	300	V
V_{CEO}	collector-emitter voltage BF469 BF471	open base	—	250	V
			—	300	V
V_{EBO}	emitter-base voltage	open collector	—	5	V
I_C	collector current (DC)		—	50	mA
I_{CM}	peak collector current		—	100	mA
I_{BM}	peak base current		—	50	mA
P_{tot}	total power dissipation	$T_{mb} \leq 114^\circ\text{C}$	—	1.8	W
T_{stg}	storage temperature		—65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		—65	+150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th,j-a}$	thermal resistance from junction to ambient	in free air; note 1	100	K/W
$R_{th,j-mb}$	thermal resistance from junction to mounting base		20	K/W

Note

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

CHARACTERISTICS

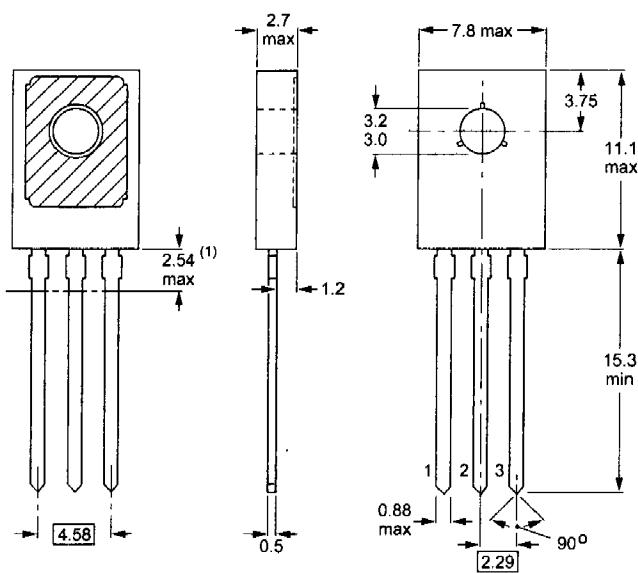
$T_j = 25^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 200\text{ V}$	—	10	nA
		$I_E = 0; V_{CB} = 200\text{ V}; T_j = 150^\circ\text{C}$	—	10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	—	50	nA
h_{FE}	DC current gain	$I_C = 25\text{ mA}; V_{CE} = 20\text{ V}$	50	—	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 30\text{ mA}; I_B = 5\text{ mA}$	—	0.6	V
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

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PACKAGE OUTLINE



Dimensions in mm.

(1) Terminal dimensions within this zone are uncontrolled.

Fig.2 TO-126; SOT32.