

NPN high-voltage transistors BF420; BF422

Features

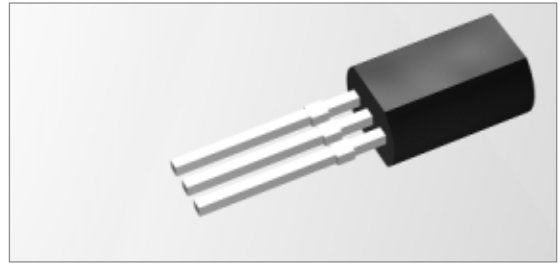
- Low feedback capacitance.

Applications

- Class-B video output stages in colour television and professional monitor equipment.

Description

- NPN transistor in a TO-92 plastic package
- PNP complements: BF421 and BF423.



Pinning

Pin	Description
1	base
2	collector
3	emitter

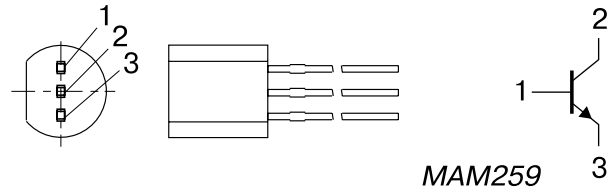


Fig.1 Simplified outline (TO-92) and symbol.

Quick Reference Data

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_{CBO}	collector-base voltage	open emitter			
	BF420		—	300	V
	BF422		—	250	V
V_{CEO}	collector-emitter voltage	open base			
	BF420		—	300	V
	BF422		—	250	V
I_{CM}	peak collector current		—	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	—	830	mW
h_{FE}	DC current gain	$I_C = 25\text{ mA}; V_{CE} = 20\text{ V}$	50	—	
C_{re}	feedback capacitance	$I_C = i_c = 0; V_{CE} = 30\text{ V}; f = 1\text{ MHz}$	—	1.6	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	60	—	MHz

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			
	BF420		—	300	V
	BF422		—	250	V
V_{CEO}	collector-emitter voltage	open base			
	BF420		—	300	V
	BF422		—	250	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	$T_{amb} \leq 25\text{ }^{\circ}\text{C}; \text{note 1}$	—	830	mW
T_{stg}	storage temperature		-65	+150	$^{\circ}\text{C}$
T_j	junction temperature		—	150	$^{\circ}\text{C}$
T_{amb}	operating ambient temperature		-65	+150	$^{\circ}\text{C}$

Note

1. Transistor mounted on an printed-circuit board.

Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
R_{thj-a}	thermal resistance from junction to ambient	note 1	150	K/W

Note

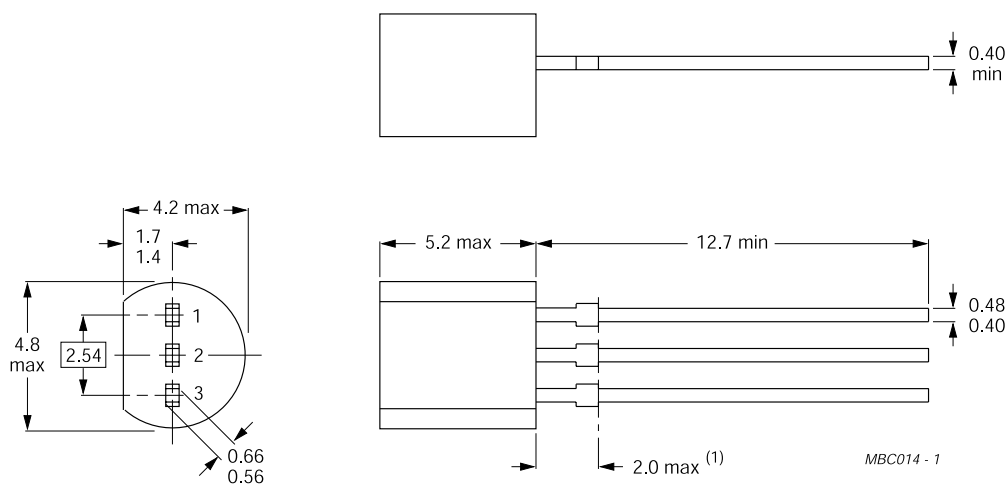
1. Transistor mounted on an printed-circuit board.

Characteristics

$T_j=25\text{ }^\circ\text{C}$ 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
		$I_E = 0; V_{CB} = 200\text{ V}; T_j = 150\text{ }^\circ\text{C}$	—	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	$I_C = I_c = 0; V_{CE} = 30\text{ V}; f = 1\text{ MHz}$	—	1.6	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	60	—	MHz

Package Outline



Dimensions in mm.

(1) Terminal dimensions within this zone are uncontrolled.

Fig.2 TO-92.