

PNP general purpose transistors

BC556; BC557; BC558

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 65 V).

APPLICATIONS

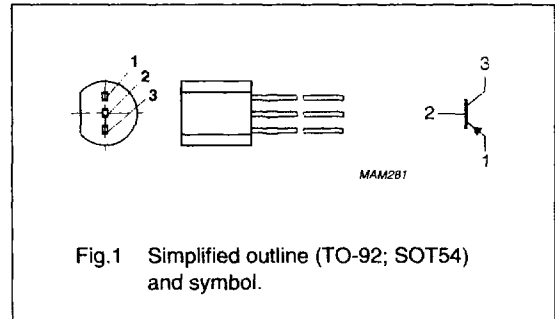
- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a TO-92; SOT54 plastic package.
 NPN complements: BC546, BC547 and BC548.

PINNING

PIN	DESCRIPTION
1	emitter
2	base
3	collector



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter	–	–80	V
	BC556		–	–50	V
	BC557		–	–30	V
V _{CEO}	collector-emitter voltage	open base	–	–65	V
	BC556		–	–45	V
	BC557		–	–30	V
I _{CM}	peak collector current		–	–200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	–	500	mW
h _{FE}	DC current gain	I _C = –2 mA; V _{CE} = –5 V	125	475	
	BC556		125	800	
f _T	transition frequency	I _C = –10 mA; V _{CE} = –5 V; f = 100 MHz	100	–	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	open emitter			
	BC556		-	-80	V
	BC557		-	-50	V
V _{CEO}	collector-emitter voltage	open base			
	BC556		-	-65	V
	BC557		-	-45	V
V _{EBO}	emitter-base voltage	open collector			
	BC558		-	-30	V
I _C	collector current (DC)		-	-100	mA
I _{CM}	peak collector current		-	-200	mA
I _{BM}	peak base current		-	-200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	-	500	mW
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	note 1	250	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

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

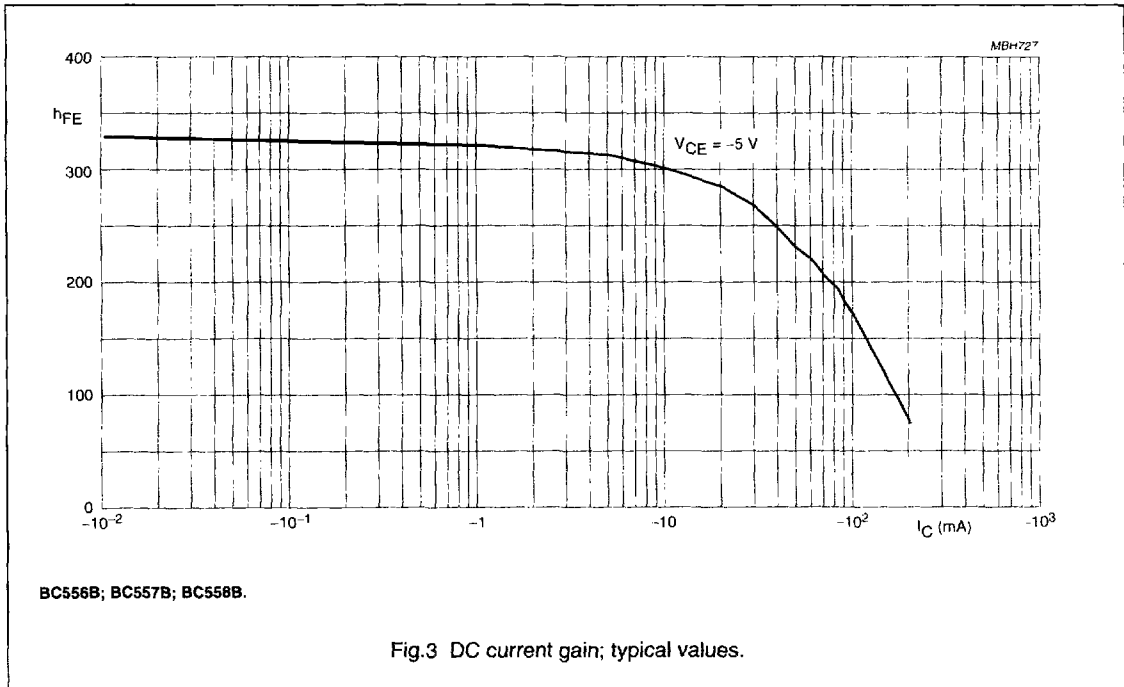
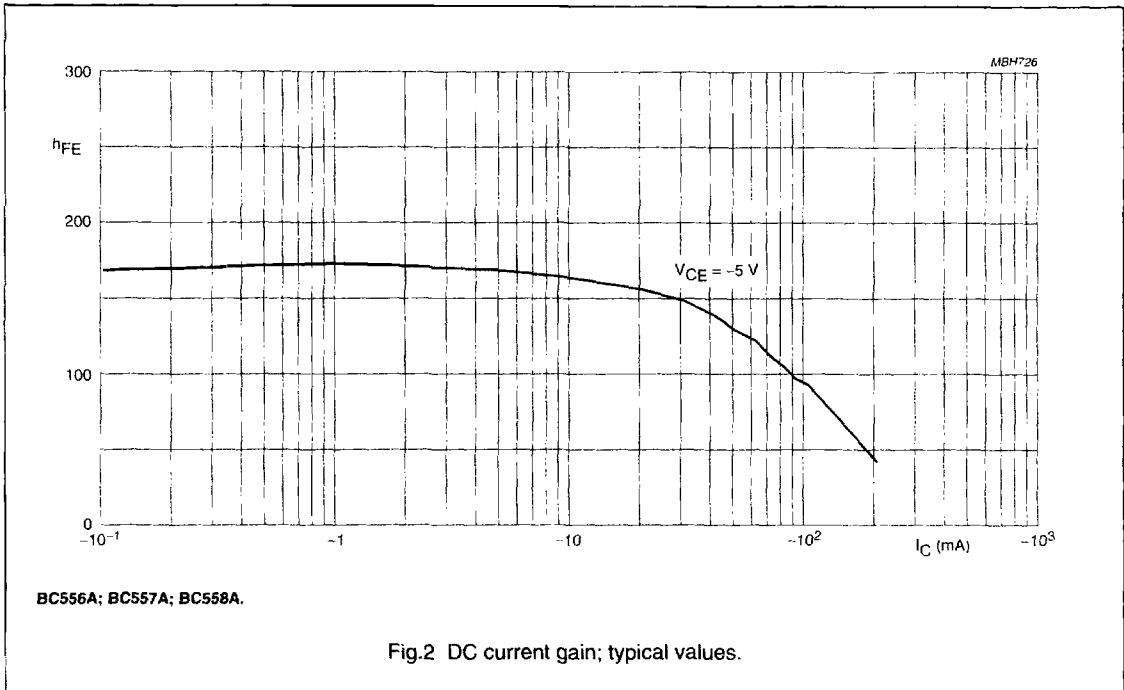
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	-	-1	-15	nA
		$I_E = 0; V_{CB} = -30\text{ V}; T_j = 150\text{ }^\circ\text{C}$	-	-	-4	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	-	-	-100	nA
h_{FE}	DC current gain BC556 BC557; BC558 BC556A; BC557A; BC558A BC556B; BC557B; BC558B BC557C; BC558C	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$ see Figs 2, 3 and 4	125	-	475	
			125	-	800	
			125	-	250	
			220	-	475	
			420	-	800	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	-	-60	-300	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}$	-	-180	-650	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA};$ note 1	-	-750	-	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA};$ note 1	-	-930	-	mV
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$ note 2	-600	-650	-750	mV
		$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ note 2	-	-	-820	mV
C_c	collector capacitance	$I_E = I_B = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	-	3	-	pF
C_e	emitter capacitance	$I_C = I_C = 0; V_{EB} = -0.5\text{ V}; f = 1\text{ MHz}$	-	10	-	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	-	-	MHz
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V}; R_S = 2\text{ k}\Omega;$ $f = 1\text{ kHz}; B = 200\text{ Hz}$	-	2	10	dB

Notes

- V_{BEsat} decreases by about -1.7 mV/K with increasing temperature.
- V_{BE} decreases by about -2 mV/K with increasing temperature.

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