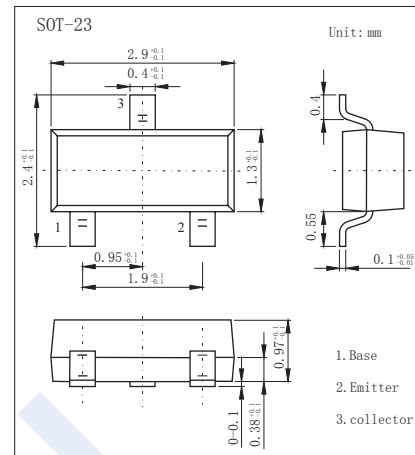


PNP Transistors

2SA1052



■ Features

- Low frequency amplifier

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	-30	V
Collector to emitter voltage	V_{CEO}	-30	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current	I_C	-100	mA
Emitter current	I_E	100	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = -100 \mu\text{A}, I_E = 0$	-30			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 \text{ mA}, R_{BE} = \infty$	-30			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu\text{A}, I_C = 0$	-5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -20 \text{ V}, I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -4 \text{ V}, I_C = 0$			-0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$			-0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$			-1.2	
Base-emitter voltage	V_{BE}	$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$			-0.75	
DC current gain	h_{FE}	$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$	100		500	

■ h_{FE} Classification

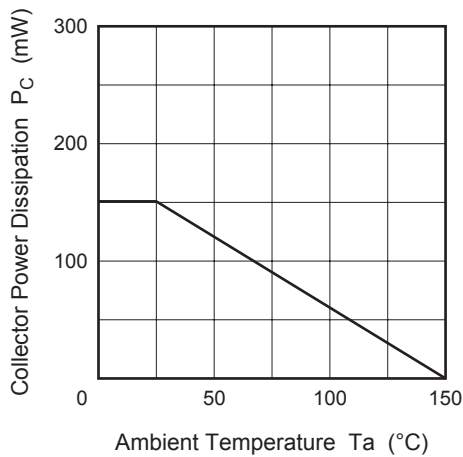
Marking	MB	MC	MD
h_{FE}	100~200	160~320	250~500

PNP Transistors

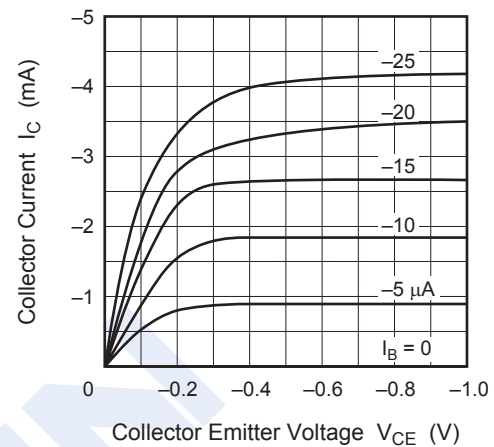
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■ Typical Characteristics

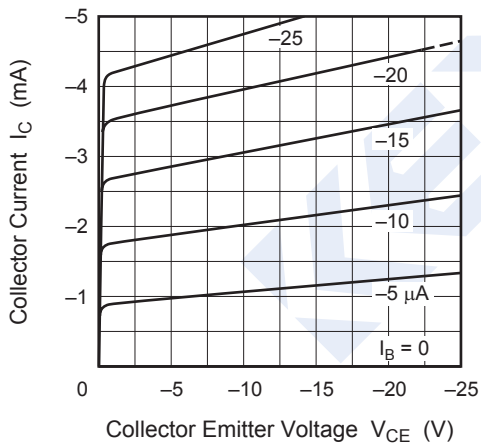
Maximum Collector Dissipation Curve



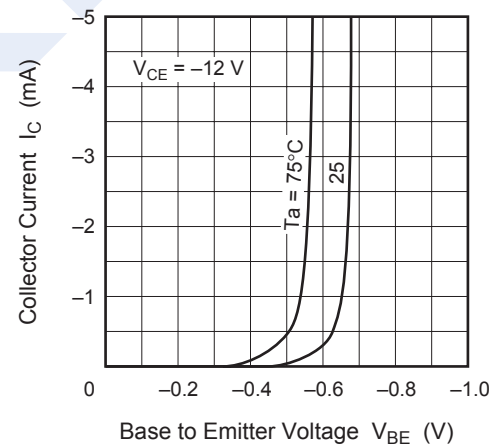
Typical Output Characteristics (1)



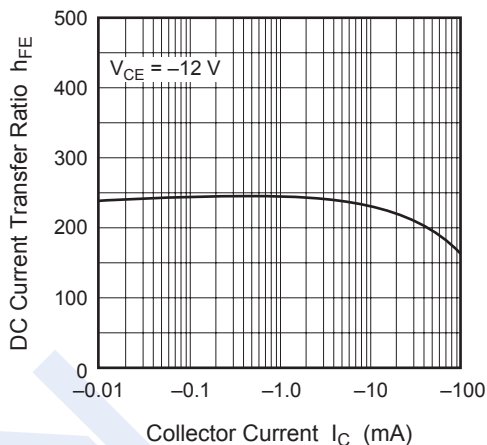
Typical Output Characteristics (2)



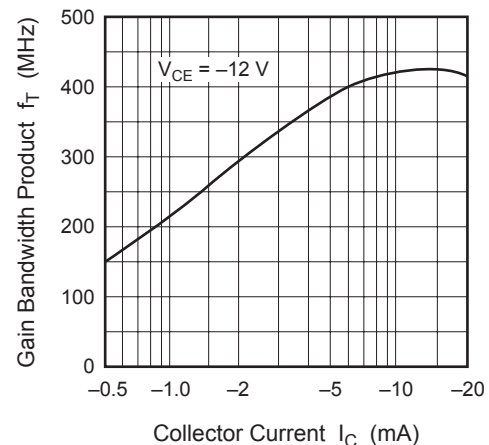
Typical Transfer Characteristics



DC Current Transfer Ratio vs. Collector Current



Gain Bandwidth Product vs. Collector Current



PNP Transistors

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■ Typical Characteristics

