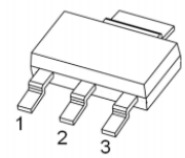
NPN Transistors

■ Features

- Built-in zener diode between collector and base.
- Zener diode has low dispersion.
- Darlington connection for high DC current gain.
- Built-in resistor between base and emitter.

MARKING:BSP52

SOT-223



1. BASE
2. COLLECTOR
3. EMITTER

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	200	V
Collector - Emitter Voltage	V_{CEO}	150	
Emitter - Base Voltage	V_{EBO}	6	
Collector Current - Continuous	I_C	2	A
Collector Current - Pulse	I_{CP}	3	
Collector Power Dissipation (Note.1)	P_C	0.5	W
		2	
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: Single pulse Pw=10ms,Duty=1/2

Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0		200		V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0		150		
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	6			
Collector-base cut-off current	I_{CBO}	V_{CB}= 70 V , I_E= 0			10	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			3	mA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=1 A, I_B=1mA			1.5	V
DC current gain	h_{FE}	V_{CE}= 2V, I_C= 1 A	1000		10000	
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E= 0,f=1MHz		25		pF
Transition frequency	f_T	V_{CE}= 5V, I_E= -100mA,f=30MHz		80		MHz

Typical Characterisitics

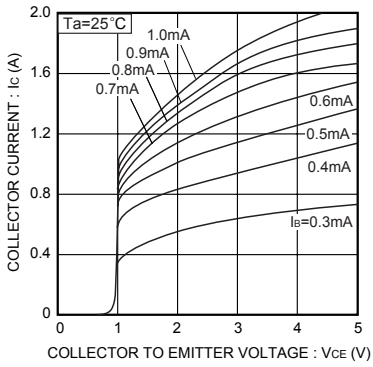


Fig.1 Grounded emitter output characteristics

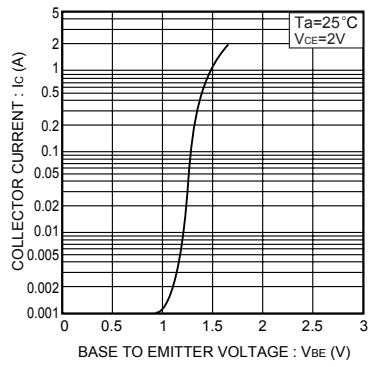


Fig.2 Grounded emitter propagation characteristics

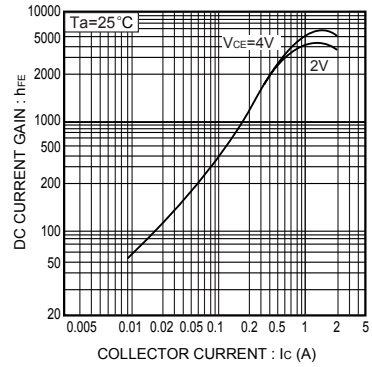


Fig.3 DC current gain vs. collector current

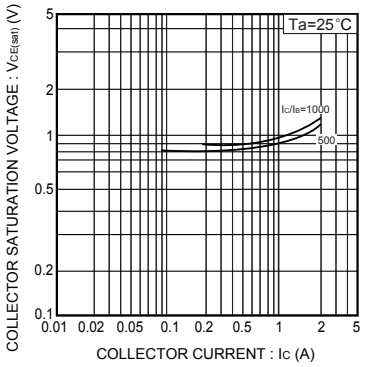


Fig.4 Collector-emitter saturation voltage vs. collector current

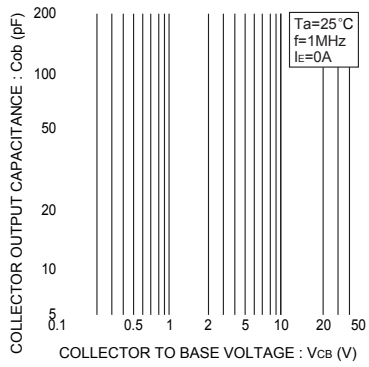


Fig.5 Collector output capacitance vs. collector-base voltage

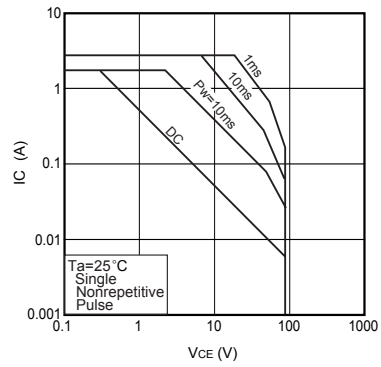


Fig.6 Safe operating area