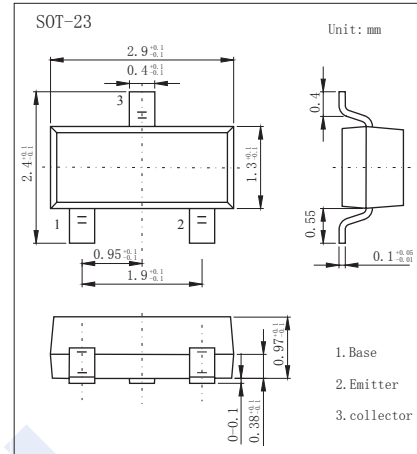


NPN Transistors

2SC3513

■ Features

- Collector Current Capability $I_c=50\text{mA}$
- Collector Emitter Voltage $V_{CE0}=11\text{V}$



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	15	V
Collector - Emitter Voltage	V_{CEO}	11	
Emitter - Base Voltage	V_{EBO}	2	
Collector Current - Continuous	I_c	50	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_c = 100 \mu\text{A}$, $I_E = 0$	15			V
Collector- emitter breakdown voltage	V_{CEO}	$I_c = 1 \text{ mA}$, $I_B = 0$	11			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu\text{A}$, $I_c = 0$	2			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 12\text{V}$, $I_E = 0$			1	μA
Collector-emitter cut-off current	I_{CEO}	$V_{CE} = 10\text{V}$, $I_B = 0$			1	
Emitter cut-off current	I_{EBO}	$V_{EB} = 1\text{V}$, $I_c = 0$			1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 50 \text{ mA}$, $I_B = 5\text{mA}$			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 50 \text{ mA}$, $I_B = 5\text{mA}$			1.2	
DC current gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_c = 20\text{mA}$	50		250	
Power gain	PG	$V_{CE} = 5\text{V}$, $I_c = 20\text{mA}$, $f = 900\text{MHz}$		10		dB
Noise figure	NF	$V_{CE} = 5\text{V}$, $I_c = 5\text{mA}$, $f = 900\text{MHz}$		1.6		
Collector output capacitance	C_{ob}	$V_{CB} = 5\text{V}$, $I_E = 0$, $f = 1\text{MHz}$			1.5	pF
Transition frequency	f_T	$V_{CE} = 5\text{V}$, $I_c = 20\text{mA}$		6		GHz

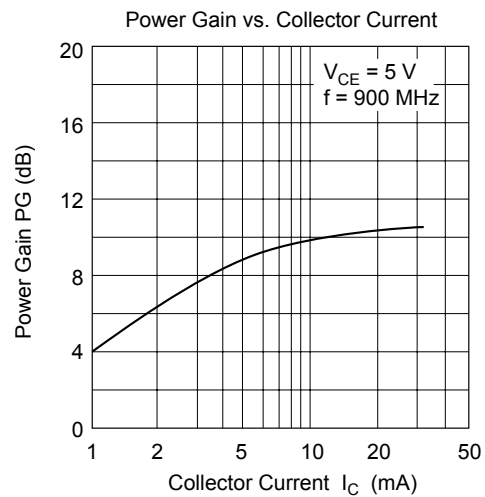
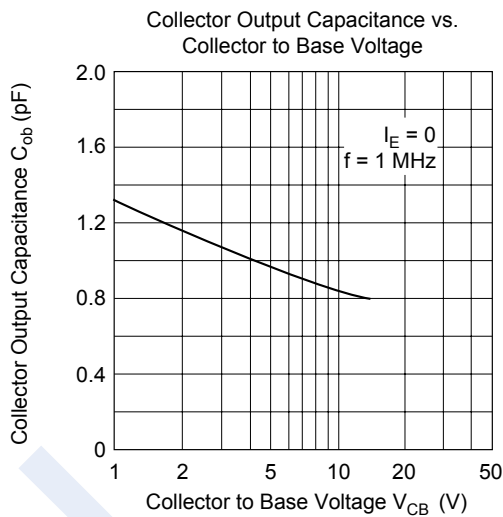
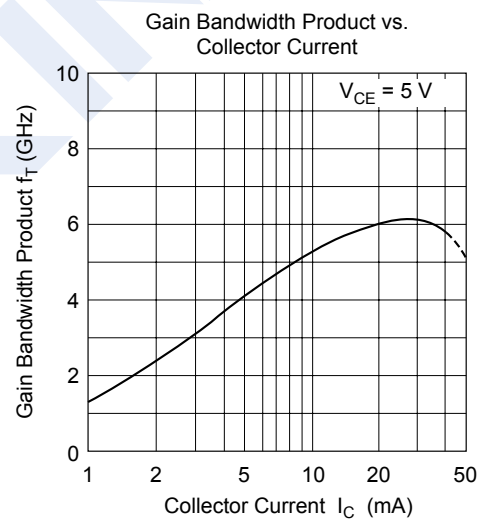
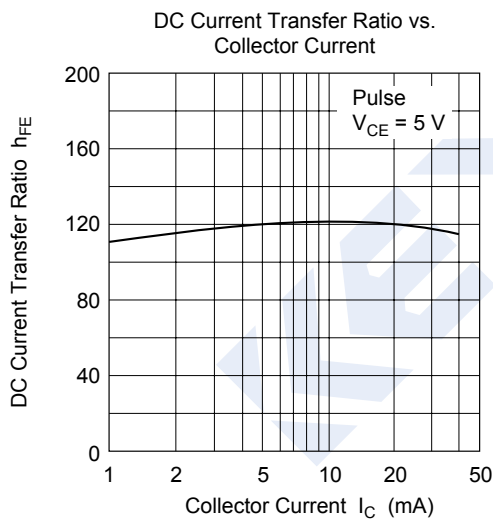
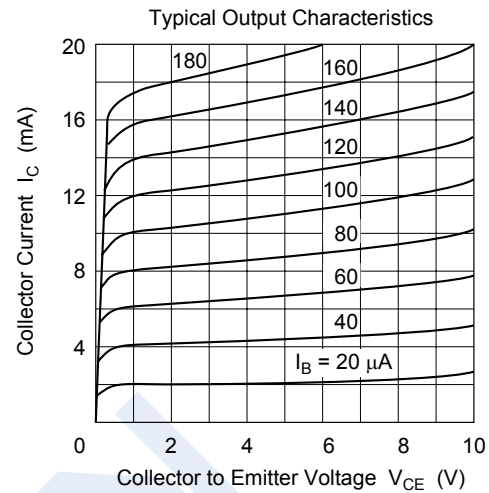
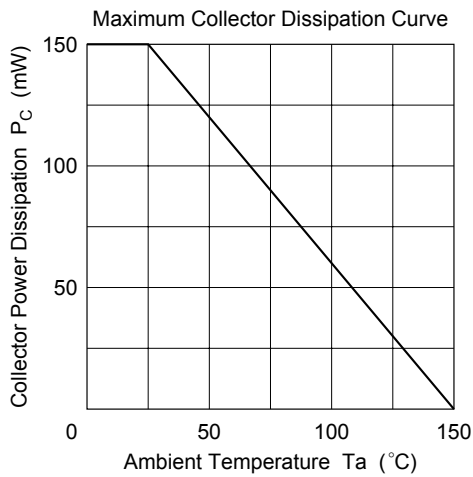
■ Marking

Marking	IS*
---------	-----

NPN Transistors

2SC3513

■ Typical Characteristics



NPN Transistors

2SC3513

■ Typical Characteristics

