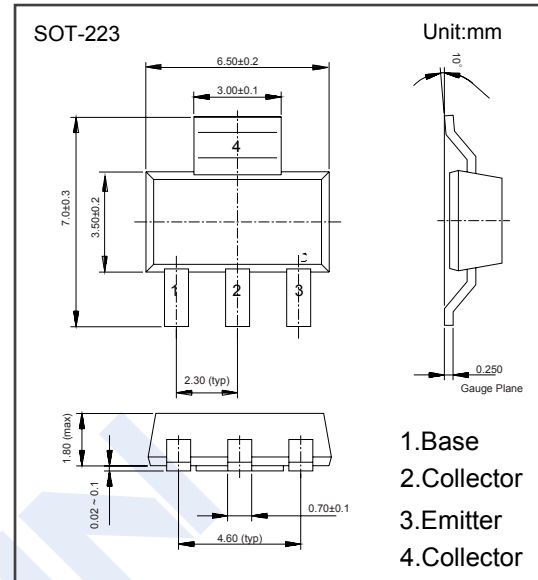


## NPN Transistors

## FZT851 (KZT851)

## ■ Features

- Collector Current Capability  $I_c=6A$
- Collector Emitter Voltage  $V_{CE0}=60V$
- Complementary to FZT951

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	150	V
Collector - Emitter Voltage	$V_{CE0}$	60	
Emitter - Base Voltage	$V_{EB0}$	6	
Collector Current - Continuous	$I_c$	6	A
Collector Current - Pulse	$I_{cP}$	20	
Collector Power Dissipation	$P_c$	3	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## NPN Transistors

## FZT851 (KZT851)

## ■ Electrical Characteristics Ta = 25°C

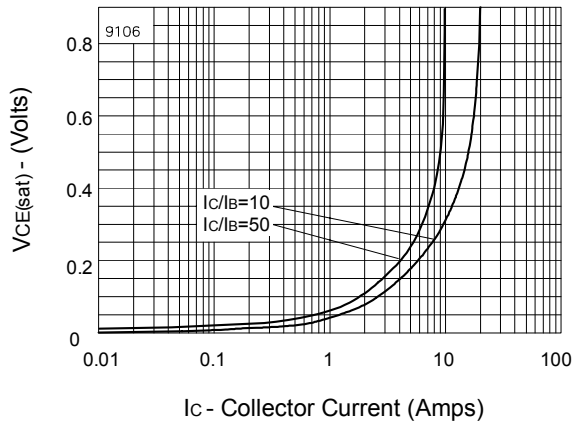
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CB0</sub>	I <sub>C</sub> = 100 μA, I <sub>E</sub> = 0	150			V
Collector-emitter breakdown voltage	V <sub>CER</sub>	I <sub>C</sub> =1mA, R <sub>B</sub> ≤1kΩ	150			
Collector- emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	60			
Emitter - base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = 100 μA, I <sub>C</sub> = 0	6			
Collector-base cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0			0.1	μA
		V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0, Ta = 100°C			1	
Collector- emitter cut-off current R <sub>B</sub> ≤1kΩ	I <sub>CER</sub>	V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0			0.1	
		V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0, Ta = 100°C			1	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 6V, I <sub>C</sub> =0			0.1	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =0.1 A, I <sub>B</sub> =5mA (Note.1)			50	mV
		I <sub>C</sub> =1 A, I <sub>B</sub> =50mA (Note.1)			100	
		I <sub>C</sub> =2 A, I <sub>B</sub> =50mA (Note.1)			170	
		I <sub>C</sub> =6 A, I <sub>B</sub> =300mA (Note.1)			375	
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =6 A, I <sub>B</sub> =300mA (Note.1)			1.2	V
Base-Emitter Turn On Voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> = 6V, I <sub>C</sub> = 1A (Note.1)			1.15	
DC current gain (Note.1)	h <sub>FE(1)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 10mA	100		300	
	h <sub>FE(2)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 2A	100		300	
	h <sub>FE(3)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 5A	75			
	h <sub>FE(4)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 10A	25			
Switching Times	t <sub>on</sub>	I <sub>C</sub> =1A, I <sub>B1</sub> =100mA		45		ns
	t <sub>off</sub>	I <sub>B2</sub> =100mA, V <sub>CC</sub> =10V		1100		
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, f=1MHz		45		pF
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 100mA, f=50MHz		130		MHz

Note.1: Pulse width=300us. Duty cycle ≤ 2%

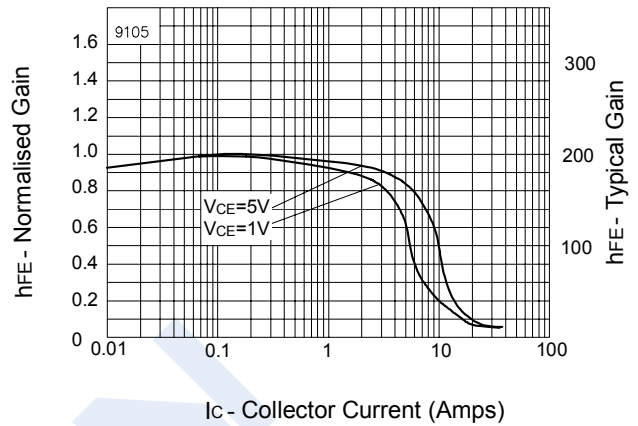
### NPN Transistors

### FZT851 (KZT851)

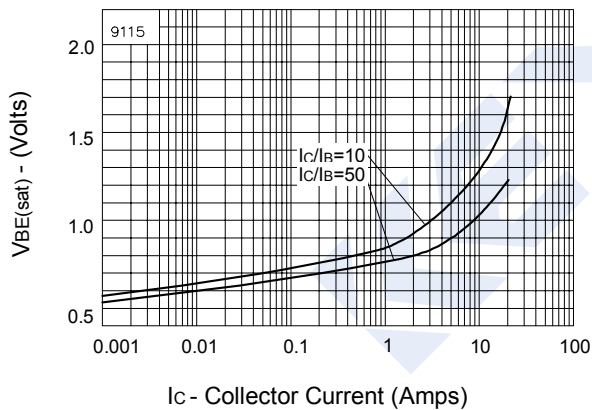
■ Typical Characteristics



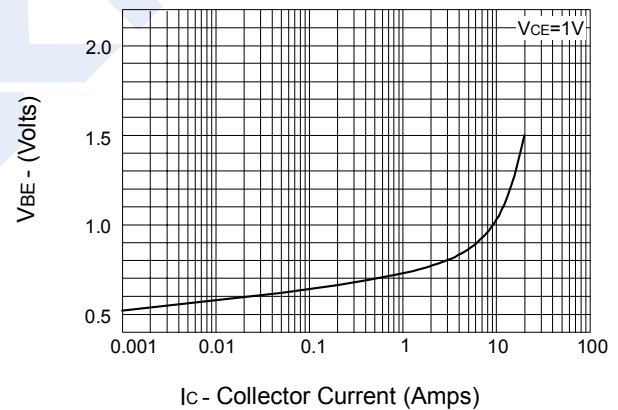
$V_{CE(sat)}$  v  $I_C$



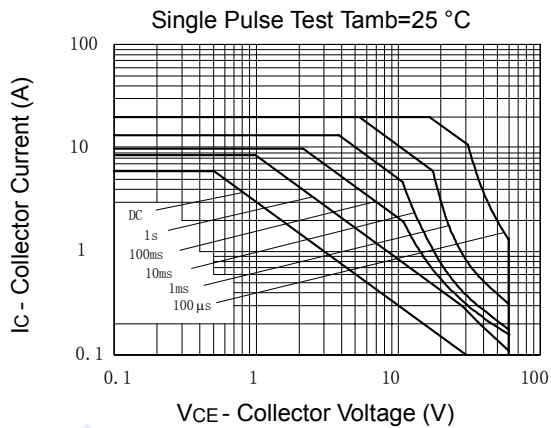
hFE v  $I_C$



$V_{BE(sat)}$  v  $I_C$



$V_{BE(on)}$  v  $I_C$



Safe Operating Area