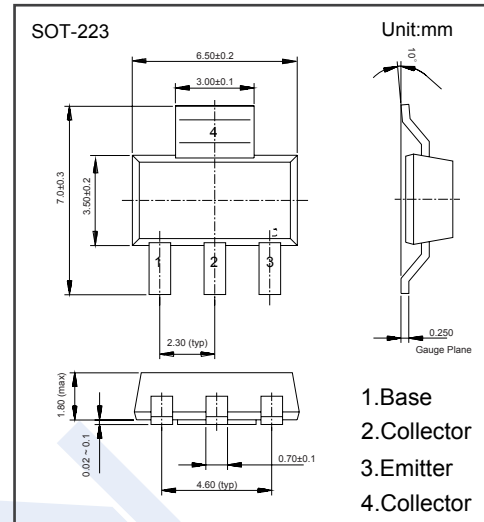


NPN Transistors

FZT1053A (KZT1053A)

■ Features

- Collector Current Capability $I_C=4.5A$
- Collector Emitter Voltage $V_{CE0}=75V$
- Low Saturation Voltage



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	150	V
Collector - Emitter Voltage	V_{CE0}	75	
Emitter - Base Voltage	V_{EB0}	7.5	
Collector Current - Continuous	I_C	4.5	A
Collector Current - Pulse	I_{CP}	10	
Base Current	I_B	500	mA
Collector Power Dissipation	P_C	2.5	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

NPN Transistors

FZT1053A (KZT1053A)

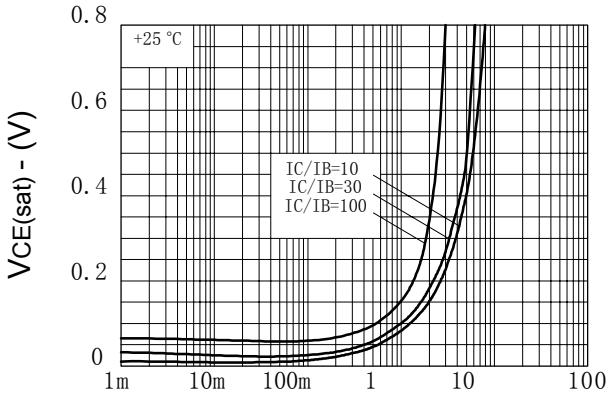
■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = 100 \mu\text{A}, I_E = 0$	150			V
Collector- emitter breakdown voltage	V_{CES}	$I_C = 100 \mu\text{A}, I_B = 0$	150			
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 10 \text{mA}, I_B = 0$	75			
Collector- emitter breakdown voltage	V_{CEV}	$I_C = 100 \mu\text{A}, V_{EB} = 1\text{V}$	150			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu\text{A}, I_C = 0$	7.5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 150 \text{V}, I_E = 0$			100	nA
Collector-emitter cut-off current	I_{CES}	$V_{CE} = 120 \text{V}, I_B = 0$			100	
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 200\text{mA}, I_B = 20\text{mA}$			30	mV
		$I_C = 500\text{mA}, I_B = 20\text{mA}$			75	
		$I_C = 1 \text{A}, I_B = 10\text{mA}$			200	
		$I_C = 2 \text{A}, I_B = 100\text{mA}$			210	
		$I_C = 4.5 \text{A}, I_B = 200\text{mA}$			440	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 3 \text{A}, I_B = 100\text{mA}$			1	V
Base - emitter turn-on voltage	$V_{BE(on)}$	$V_{CE} = 2\text{V}, I_C = 3\text{A}$			0.95	
DC current gain	$h_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$	270			
	$h_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	300		1200	
	$h_{FE(3)}$	$V_{CE} = 2\text{V}, I_C = 1 \text{A}$	300			
	$h_{FE(4)}$	$V_{CE} = 2\text{V}, I_C = 4.5 \text{A}$	40			
	$h_{FE(5)}$	$V_{CE} = 2\text{V}, I_C = 10 \text{A}$		20		
Switching Times	t_{on}	$I_C = 2 \text{A}, V_{CC} = 50\text{V}, I_{B1} = I_{B2} = \pm 20\text{mA}$		162		ns
	t_{off}			900		
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$			30	pF
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}, f = 100\text{MHz}$		140		MHz

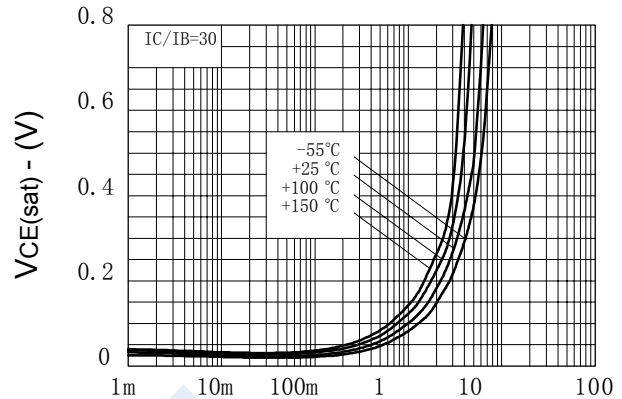
NPN Transistors

FZT1053A (KZT1053A)

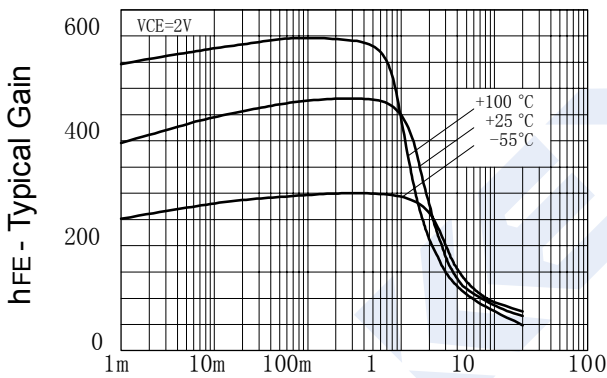
■ Typical Characteristics



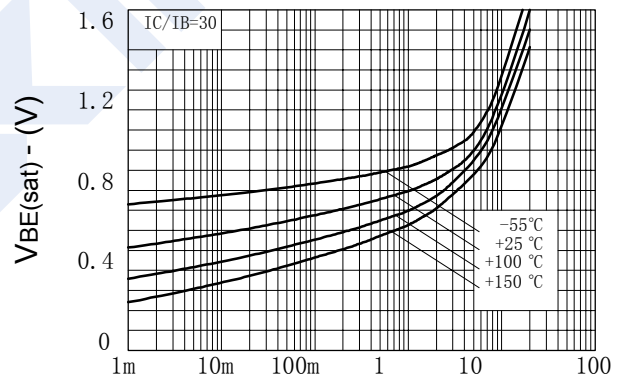
I_C - Collector Current (A)
 $V_{CE(sat)}$ v I_C



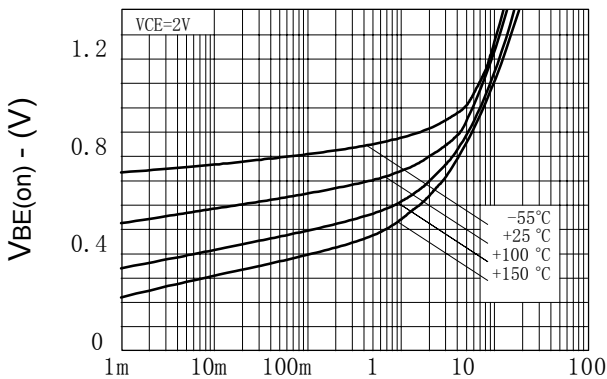
I_C - Collector Current (A)
 $V_{CE(sat)}$ v I_C



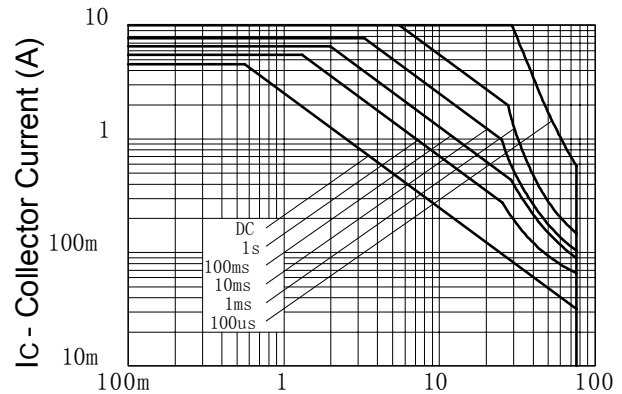
I_C - Collector Current (A)
 h_{FE} v I_C



I_C - Collector Current (A)
 $V_{BE(sat)}$ v I_C



I_C - Collector Current (A)
 $V_{BE(on)}$ v I_C



V_{CE} - Collector Emitter Voltage (V)
Safe Operating Area