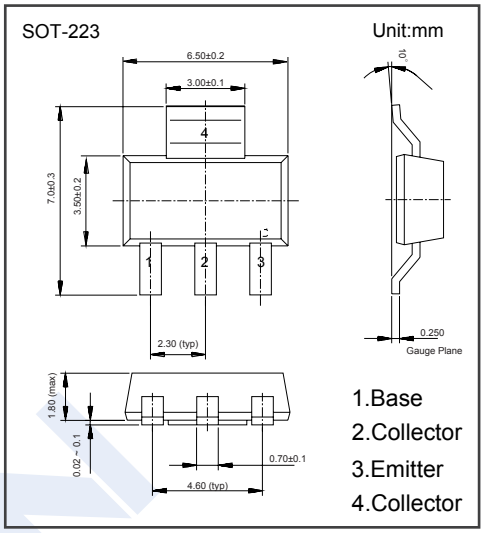
NPN Transistors

FZT1049A (KZT1049A)



■ Features

- ● Collector Current Capability I_C=5A
- ● Collector Emitter Voltage V_{CEO}=30V
- ● Low Saturation Voltage

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	80	V
Collector - Emitter Voltage	V_{CEO}	30	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	5	A
Collector Current - Pulse	I_{CP}	20	
Base Current	I_B	500	mA
Collector Power Dissipation	P_C	2.5	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

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■ 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	80			V
Collector- emitter breakdown voltage	V_{CES}	I_C= 100 uA, I_B= 0	80			
Collector- emitter breakdown voltage	V_{CEO}	I_C= 10 mA, I_B= 0	30			
Collector- emitter breakdown voltage	V_{CEV}	I_C= 100 uA, V_{EB}= 1V	80			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 80 V , I_E= 0			100	nA
Collector-emitter cut-off current	I_{CES}	V_{CE}= 35 V , I_B= 0			100	
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			100	
Collector-emitter saturation voltage (Note.1)	$V_{CE(sat)}$	I_C=500mA, I_B=10mA			60	mV
		I_C=1 A, I_B=10mA			100	
		I_C=3 A, I_B=30mA			250	
		I_C=5 A, I_B=50mA			330	
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=5 A, I_B=50mA (Note.1)			1.05	V
Base - emitter turn-on voltage	$V_{BE(on)}$	V_{CE}= 2V, I_C= 5A (Note.1)			1	
DC current gain (Note.1)	$h_{FE(1)}$	V_{CE}= 2V, I_C= 10mA	280			
	$h_{FE(2)}$	V_{CE}= 2V, I_C= 500mA	300			
	$h_{FE(3)}$	V_{CE}= 2V, I_C= 1 A	300		1200	
	$h_{FE(4)}$	V_{CE}= 2V, I_C= 5 A	180			
	$h_{FE(5)}$	V_{CE}= 2V, I_C= 20 A	40			
Switching Times	t_{on}	I_C=4A, V_{CC}=10V, I_B=40mA		125		ns
	t_{off}			380		
Collector output capacitance	C_{ob}	V_{CB}= 10V, f=1MHz			60	pF
Transition frequency	f_T	V_{CE}= 10V, I_C= 50mA,f=100MHz		180		MHz

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

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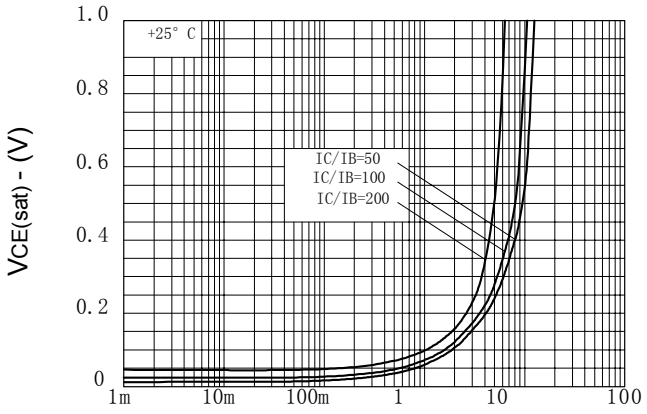
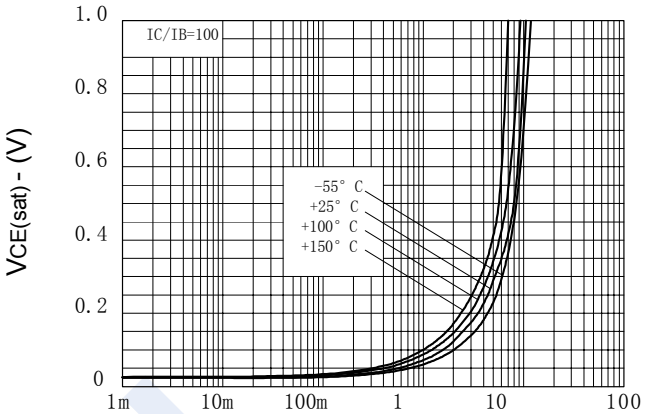
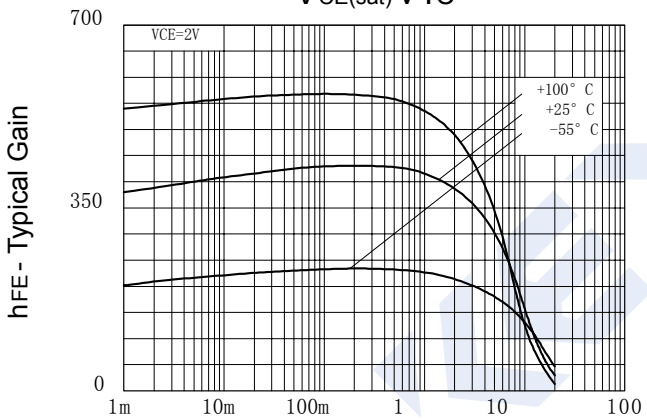
■ Typical Characterisitics



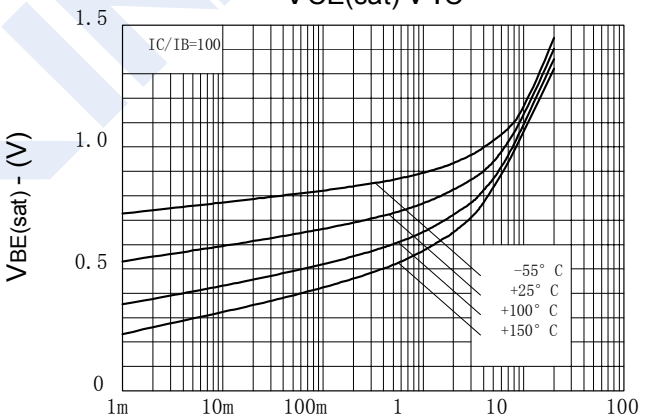
VCE(sat) v IC



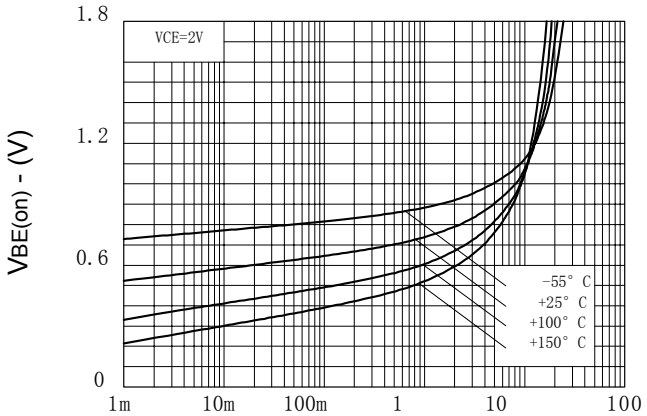
VCE(sat) v IC



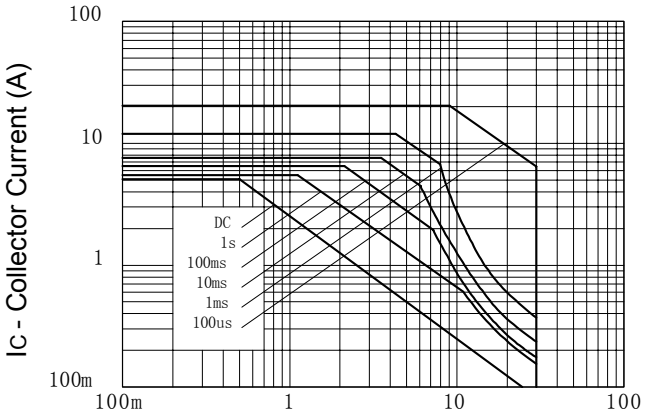
hFE v IC



VBE(sat) v IC



VBE(on) v IC



Safe Operating Area