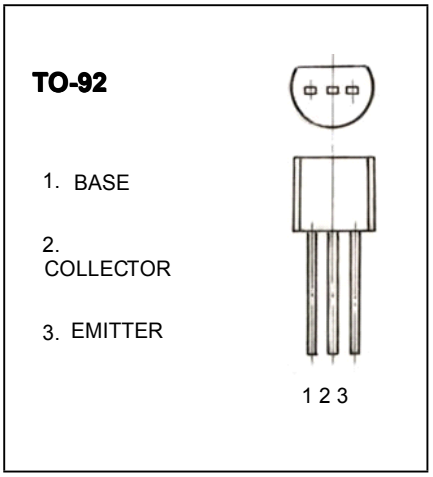
HUIZHOU JINSANE ELECTRONICS CO., LTD

TO-92 Plastic-Encapsulate Transistors

13003 TRANSISTOR(NPN)



FEATURES

· power switching applications

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current -Continuous	1.5	A
P_C	Collector Power Dissipation	0.9	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

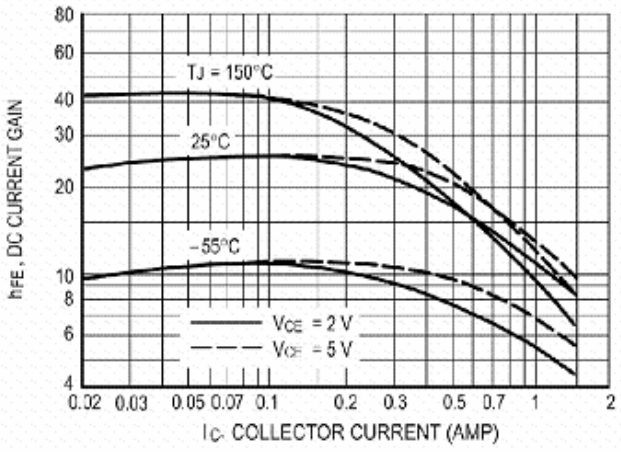
ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 1mA, I_E=0	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 10mA, I_B=0	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 1mA, I_C=0	9			V
Collector cut-off current	I_{CBO}	V_{CB}= 700V, I_E=0			100	μA
Collector cut-off current	I_{CEO}	V_{CE}= 400V, I_B=0			50	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 7V, I_C=0			10	μA
DC current gain	h_{FE}	V_{CE}= 10V, I_C= 0.4 A	20		40	
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=1.5A,I_B= 0.5A			3	V
	$V_{CE(sat)2}$	I_C=0.5A, I_B= 0.1A			0.8	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=0.5A, I_B=0.1A			1	V
Transition Frequency	f_T	V_{CE}=10V,I_C=100mA, f =1MHz	4			MHz
Fall time	t_f	I_C=1A			0.7	μs
Storage time	t_s	I_{B1}=-I_{B2}=0.2A			4	μs

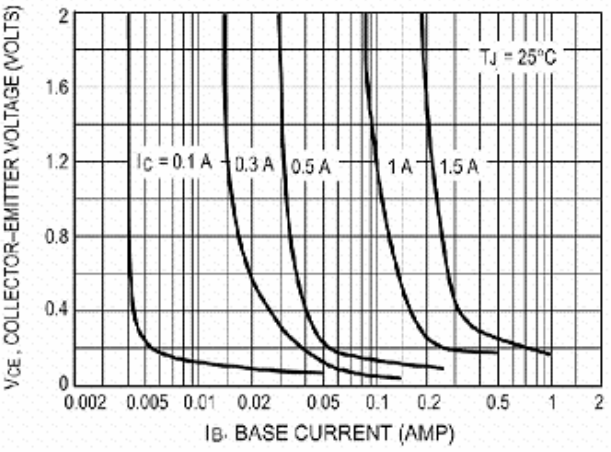
CLASSIFICATION OF h_{FE}

Rank				
Range	20-25	25-30	30-35	35-40

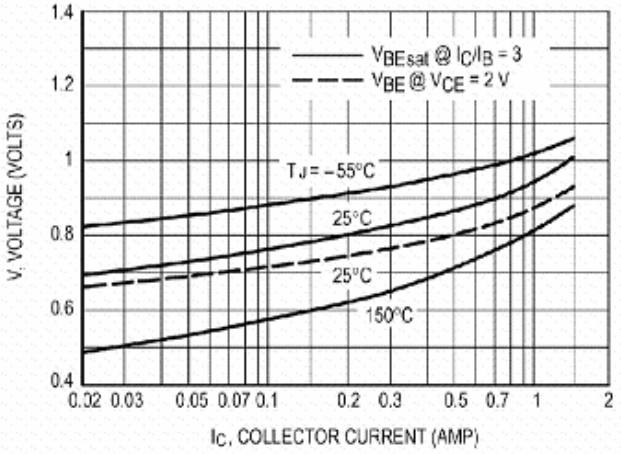
Typical Characteristics 130 0 3



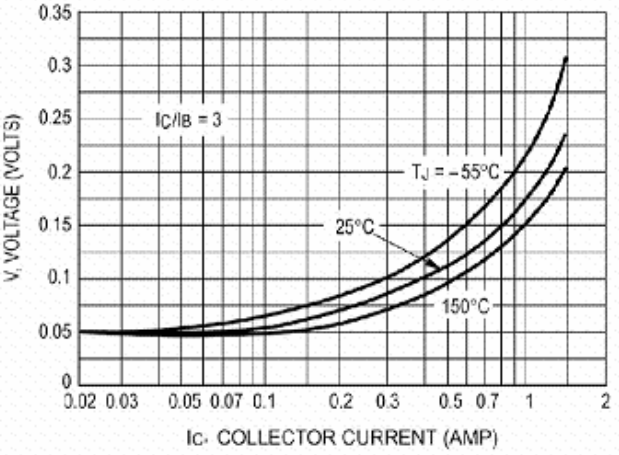
DC Current Gain



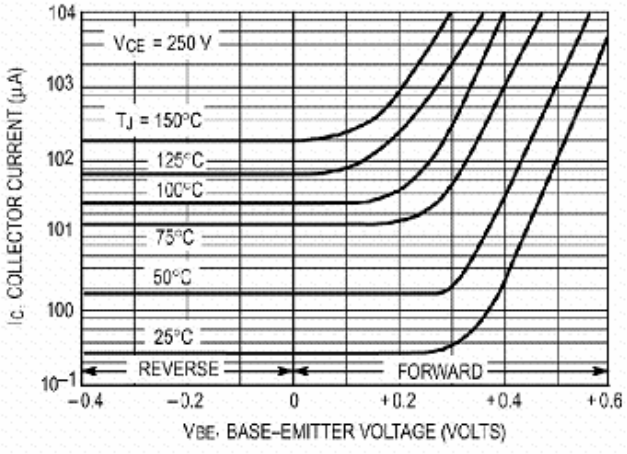
Collector Saturation Region



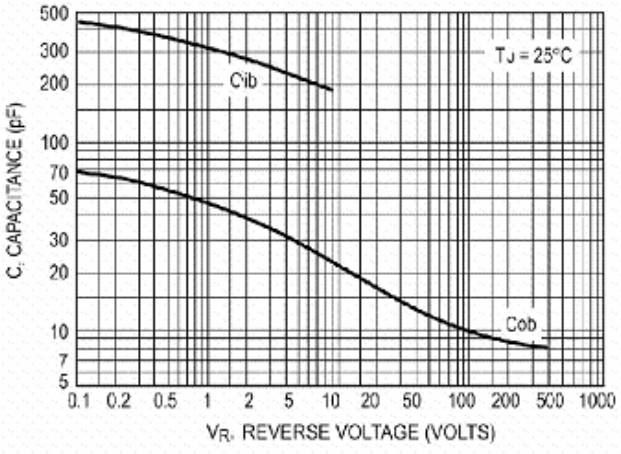
Base–Emitter Voltage



Collector–Emitter Saturation Region



Collector Cutoff Region



Capacitance