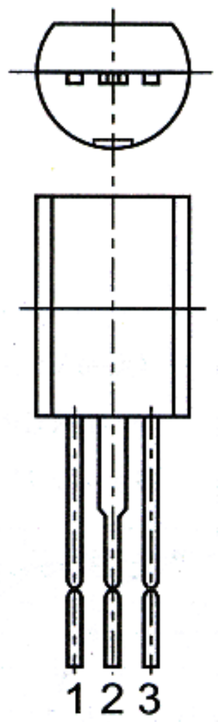
TO-92MOD Plastic-Encapsulate Transistors

2SA1013 TRANSISTOR(PNP)



TO-92MOD

1.EMITTER

2.COLLECTOR

3.BASE

1 2 3

FEATURES

Power dissipation

P_{CM}: 0.9W (Tamb=25℃)

Collector current

I_{CM}: -1 A

Collector-base voltage

$V_{(BR)CBO}$: -160 V

Operating and storage junction temperature range

T_J, T_{stg}: -55℃ to + 150℃

ELECTRICAL CHARACTERISTICS

(Tamb=25℃ unless otherwise specified)

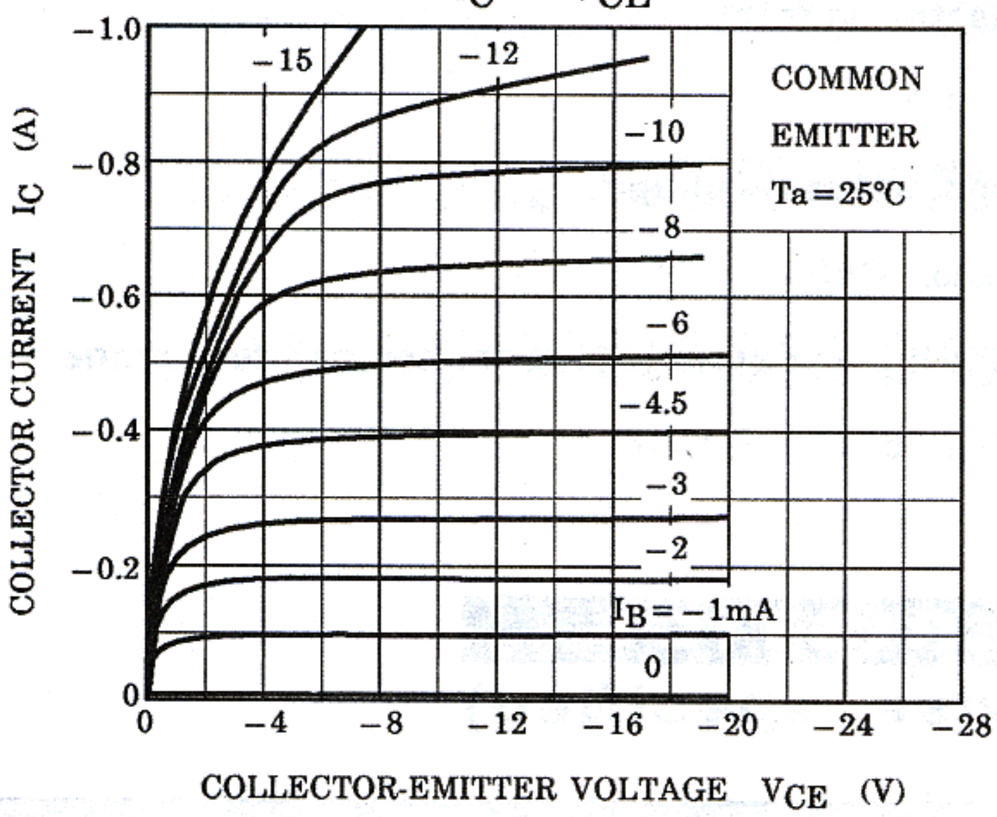
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -100 μA, I_E=0	-160		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= -1 mA, I_B=0	-160		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= -10 μA, I_C=0	-6		V
Collector cut-off current	I_{CBO}	V_{CB}= -150 V, I_E=0		-1	μA
Collector cut-off current	I_{CEO}	I_{CE}= -120 V, I_B=0		-10	μA
Emitter cut-off current	I_{EBO}	V_{EB}= -6 V, I_C=0		-1	μA
DC current gain	$h_{FE(1)}$	V_{CE}= -5 V, I_C= -200 mA	65	310	
	$h_{FE(2)}$	V_{CE}= -5 V, I_C= -50 mA	40		
Collector-emitter saturation voltage	V_{CEsat}	I_C= -500 mA, I_B= -50 mA		-1.5	V
Base-emitter voltage	V_{BE}	I_C= -5 mA, I_{CE}= -5 V		-0.75	V
Transition frequency	f_T	V_{CE}= -5 V, I_C= -200mA	15		MHz

CLASSIFICATION OF $h_{FE(1)}$

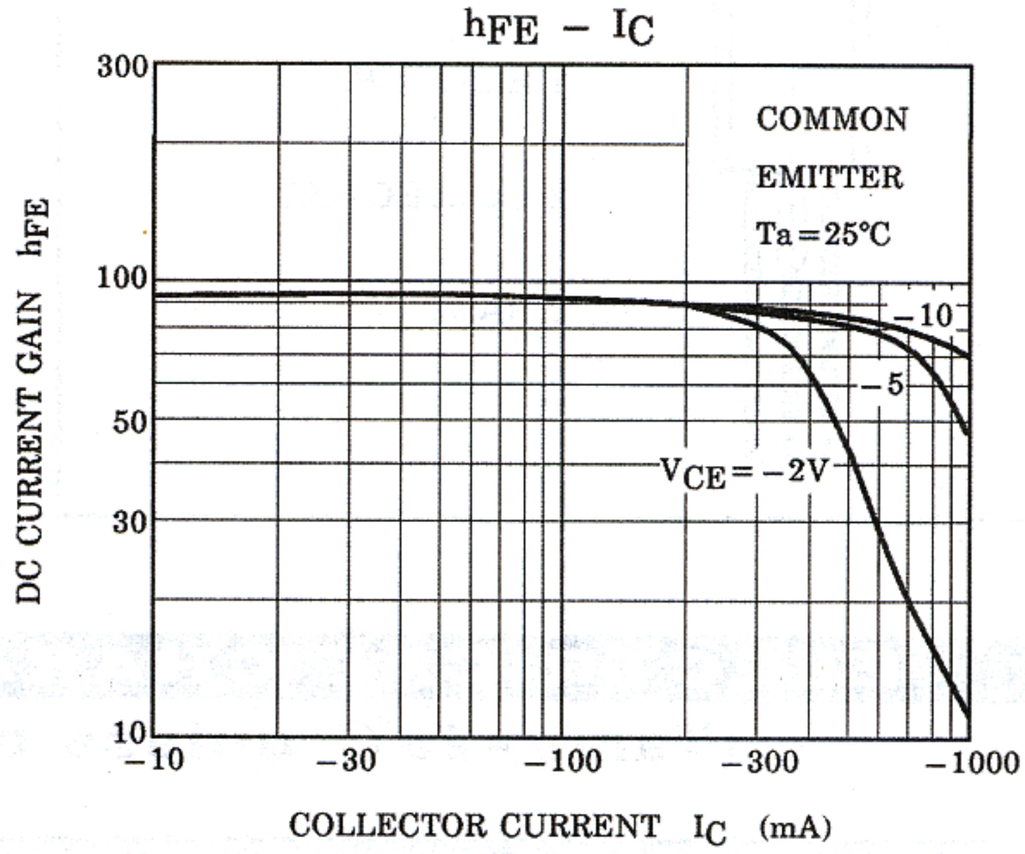
Rank	R	O	Y
Range	60-120	120-200	200-300

Typical Characteristics

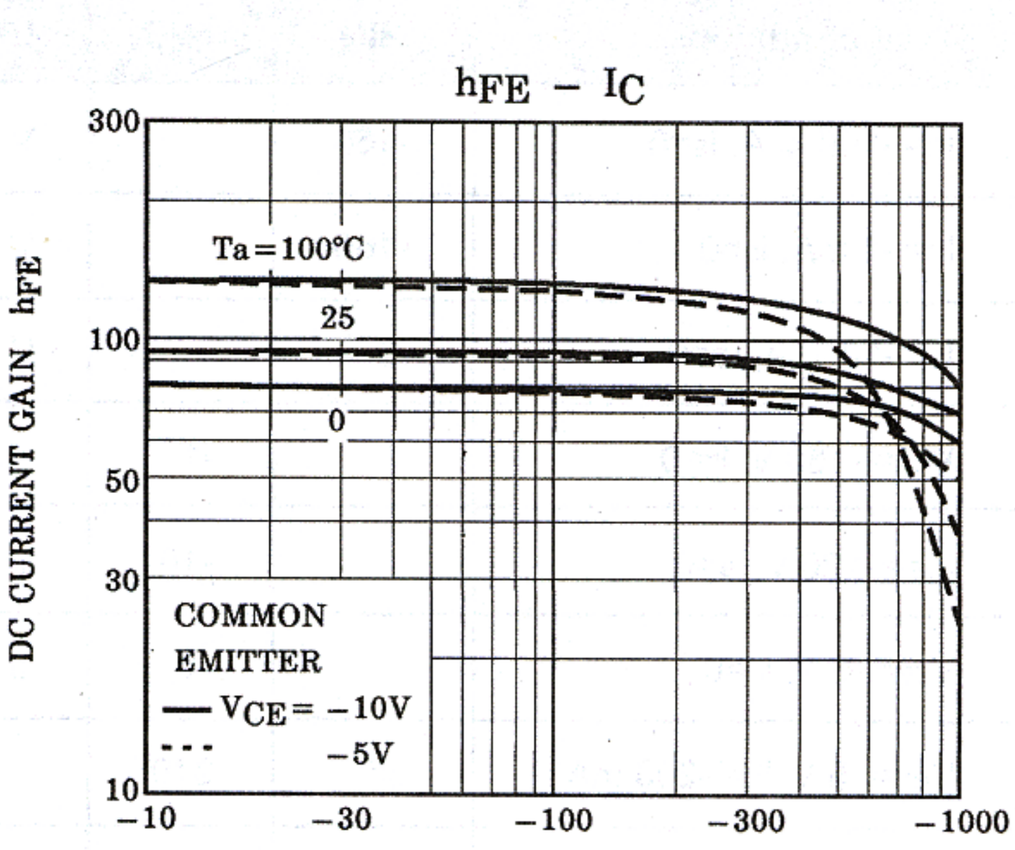
$I_C - V_{CE}$



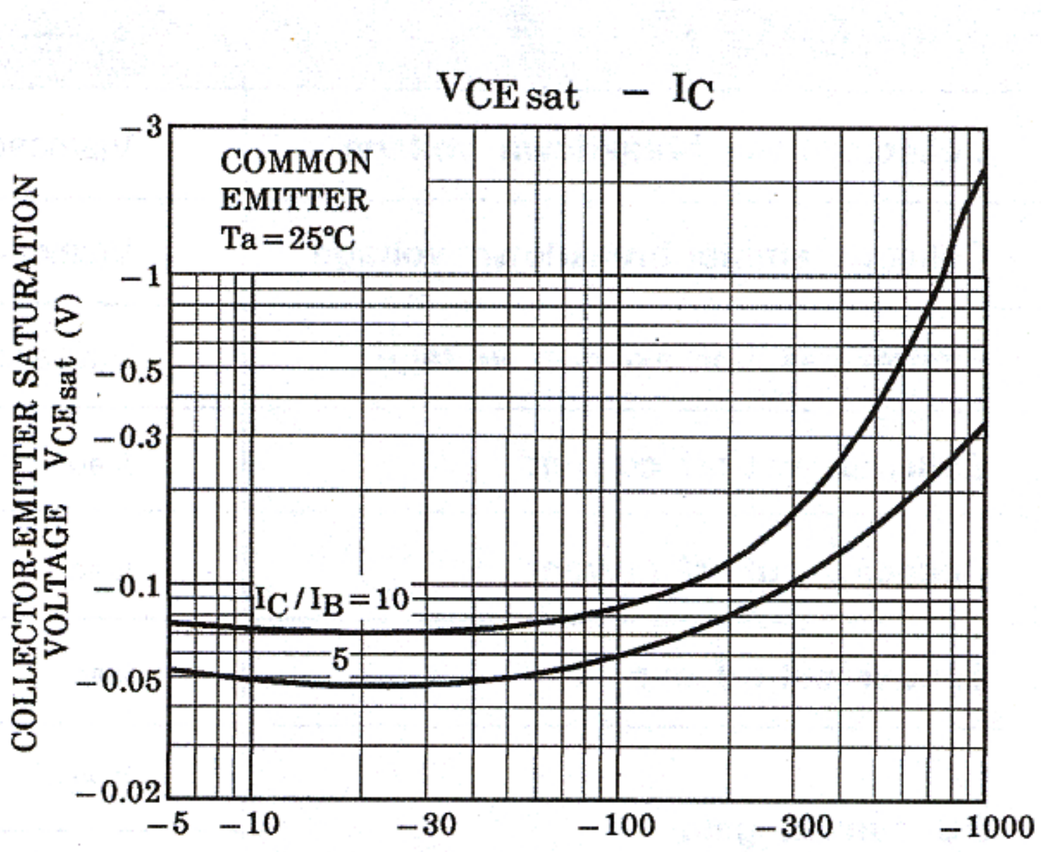
$h_{FE} - I_C$



$h_{FE} - I_C$



$V_{CE\,sat} - I_C$



$V_{CE\,sat} - I_C$

$I_C - V_{BE}$