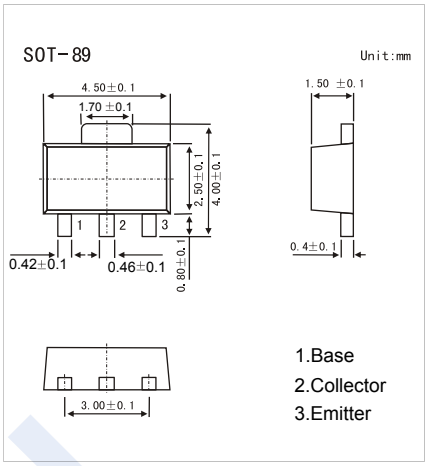
NPN Transistors

2SC3645-HF



■ Features

- High breakdown voltage
- Excellent linearity of hFE and small C_{ob}.
- Fast switching speed.
- Small Package For Mounting
- Complementary to 2SA1415-HF
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	180	V
Collector - Emitter Voltage	V_{CEO}	160	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	140	mA
Peak Collector Current	I_{CM}	200	
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ 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	180			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	160			
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			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 4V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=50 mA, I_B=5mA		0.07	0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=50 mA, I_B=5mA			1.2	
DC current gain	h_{FE}	V_{CE}= 5V, I_C= 10mA	100		400	
Turn-ON Time	t_{on}	See sepcified Test Circuit.		0.1		us
Storage Time	t_{stg}			1.5		
Fall Time	t_f			0.1		
Collector output capacitance	C_{ob}	V_{CB}= 10V,f=1MHz		3		pF
Transition frequency	f_T	V_{CE}= 10V, I_C= 10mA		150		MHz

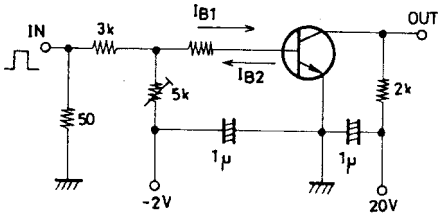
■ Classification of h_{fe}

Type	2SC3645-R-HF	2SC3645-S-HF	2SC3645-T-HF
Range	100-200	140-280	200-400
Marking	CAR F	CAS F	CAT F

NPN Transistors

2SC3645-HF

Switching Time Test Circuit

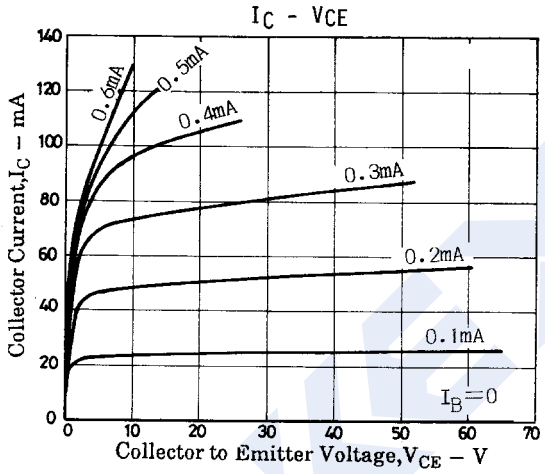


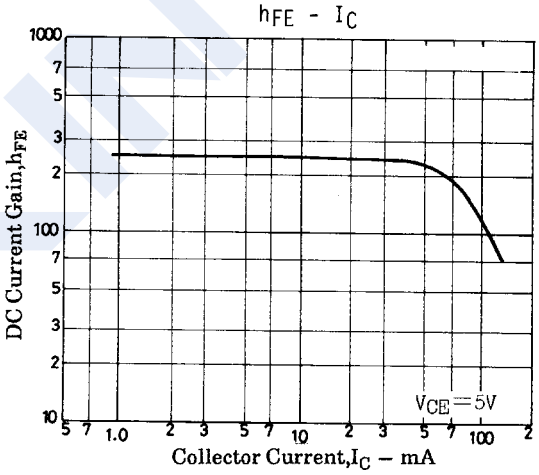
$I_C = 10I_{B1} = 10I_{B2} = 10mA$

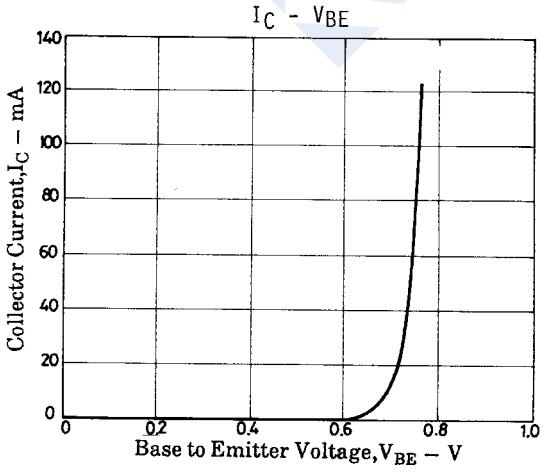
(For PNP, the polarity is reversed)

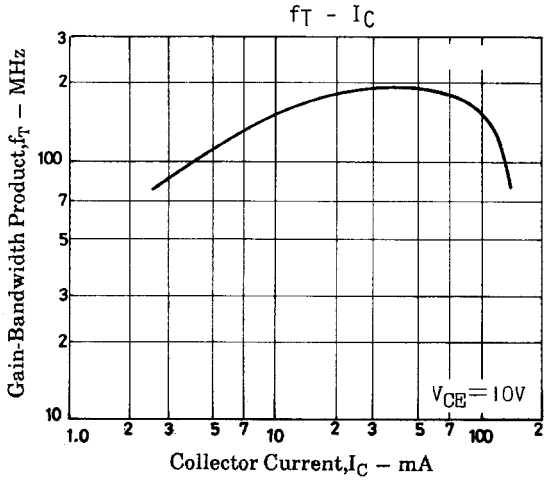
Unit (resistance : Ω, capacitance : F)

■ Typical Characterisitics









NPN Transistors

2SC3645-HF

■ Typical Characterisitics

