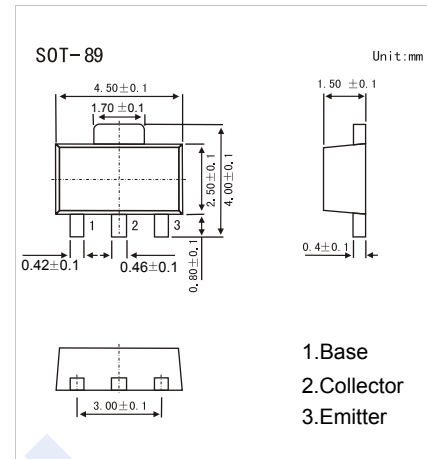


PNP Transistors

2SA1416-HF

■ Features

- Adoption of FBET, MBIT Processes
- High Breakdown Voltage and Large Current Capacity
- Fast Switching Time
- Complementary to 2SC3646-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	-120	V
Collector - Emitter Voltage	V _{CE0}	-100	
Emitter - Base Voltage	V _{EB0}	-6	
Collector Current - Continuous	I _C	-1	A
Collector Current - Pulsed	I _{CP}	-2	
Collector Power Dissipation	P _C	500	mW
Junction Temperature	T _J	150	°C
Storage Temperature range	T _{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _C = -100 μA, I _E =0	-120			V
Collector- emitter breakdown voltage	V _{CE0}	I _C = -1 mA, R _{BE} =∞	-100			
Emitter - base breakdown voltage	V _{EB0}	I _E = -100 μA, I _C =0	-6			
Collector-base cut-off current	I _{CB0}	V _{CB} = -100 V, I _E =0			-0.1	μA
Emitter cut-off current	I _{EB0}	V _{EB} = -4V, I _C =0			-0.1	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-400mA, I _B =- 40mA		-0.2	-0.6	V
Base - emitter saturation voltage	V _{BE(sat)}	I _C =-400mA, I _B =- 40mA		-0.85	-1.2	
DC current gain	h _{FE}	V _{CE} = -5V, I _C = -100mA	100		400	
Turn-on time	t _{on}	See Test Circuit.		80		ns
Storage time	t _s			700		
Fall time	t _f			40		
Output capacitance	C _{ob}	V _{CB} = -10V, I _E = 0, f= 1MHz		13		pF
Transition frequency	f _T	V _{CE} = -10V, I _E = -100mA		120		MHz

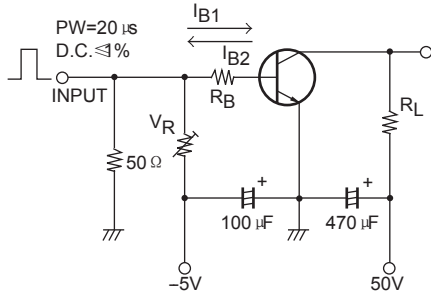
■ Classification of h_{FE}

Type	2SA1416-R-HF	2SA1416-S-HF	2SA1416-T-HF
Range	100-200	140-280	200-400
Marking	ABR* _F	ABS* _F	ABT* _F

PNP Transistors

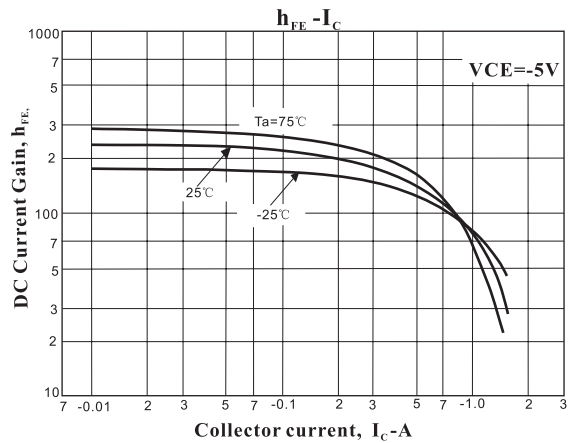
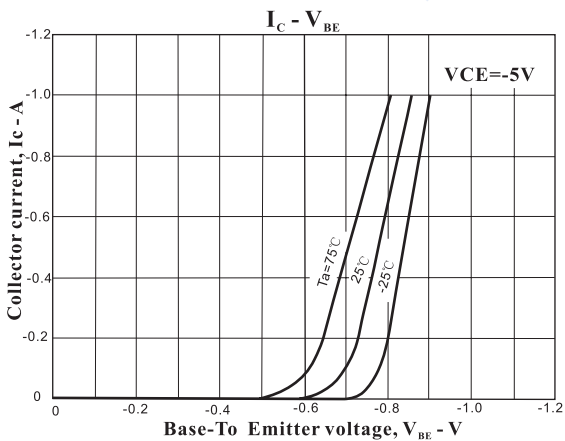
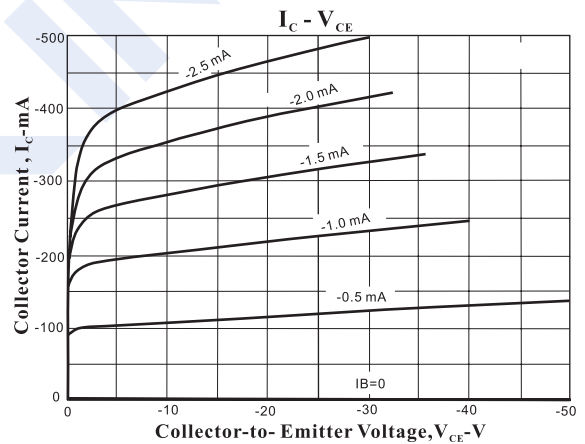
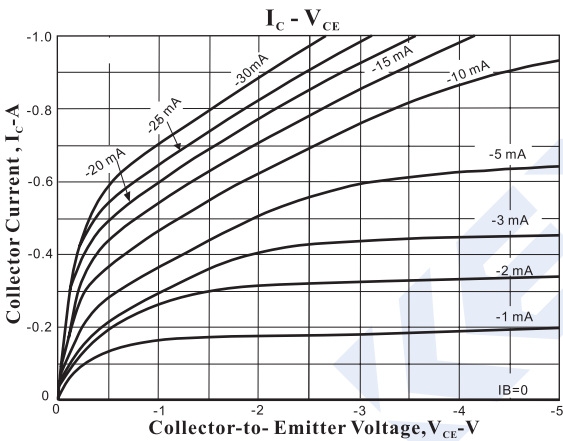
2SA1416-HF

■ Test Circuit



$I_C = 10I_{B1} = -10I_{B2} = 400\text{mA}$
 (For PNP, the polarity is reversed)

■ Typical Characteristics



PNP Transistors

2SA1416-HF

■ Typical Characteristics

