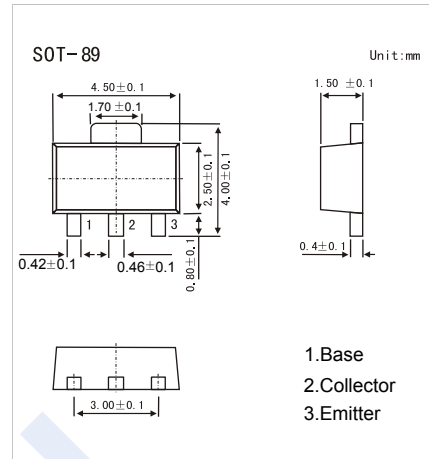


NPN Transistors

2SC3649-HF

■ Features

- High breakdown voltage and large current capacity.
- Complementary to 2SA1419-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}	180	V
Collector - Emitter Voltage	V _{CE0}	160	
Emitter - Base Voltage	V _{EB0}	6	
Collector Current - Continuous	I _C	1.5	A
Peak Collector Current	I _{CM}	2.5	
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	180			V
Collector- emitter breakdown voltage	V _{CE0}	I _C = 1 mA, R _{BE} = ∞	160			
Emitter - base breakdown voltage	V _{EB0}	I _E = 100 μA, I _C = 0	6			
Collector-base cut-off current	I _{CB0}	V _{CB} = 120 V, I _E = 0			1	μA
Emitter cut-off current	I _{EB0}	V _{EB} = 4V, I _C =0			1	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =500mA, I _B =50mA		0.13	0.45	V
Base - emitter saturation voltage	V _{BE(sat)}	I _C =500mA, I _B =50mA		0.85	1.2	
DC current gain	h _{FE}	V _{CE} = 5V, I _C = 100mA	100		400	
		V _{CE} = 5V, I _C = 10mA	80			
Turn-ON Time	t _{on}	See specified Test Circuit.		40		ns
Storage Time	t _{stg}			1200		
Fall Time	t _f			80		
Collector output capacitance	C _{ob}	V _{CB} = 10V, f=1MHz		14		pF
Transition frequency	f _T	V _{CE} = 10V, I _C = 50mA		120		MHz

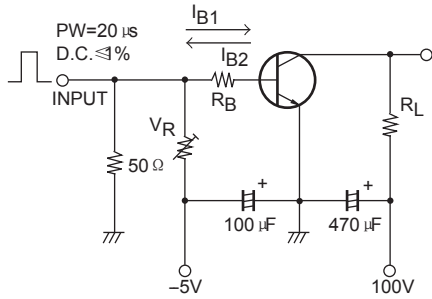
■ Classification of h_{FE}(1)

Type	2SC3649-R-HF	2SC3649-S-HF	2SC3649-T-HF
Range	100-200	140-280	200-400
Marking	CER _F	CES _F	CET _F

NPN Transistors

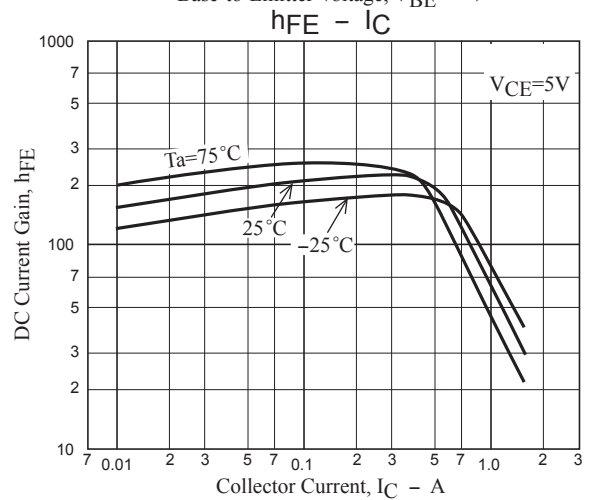
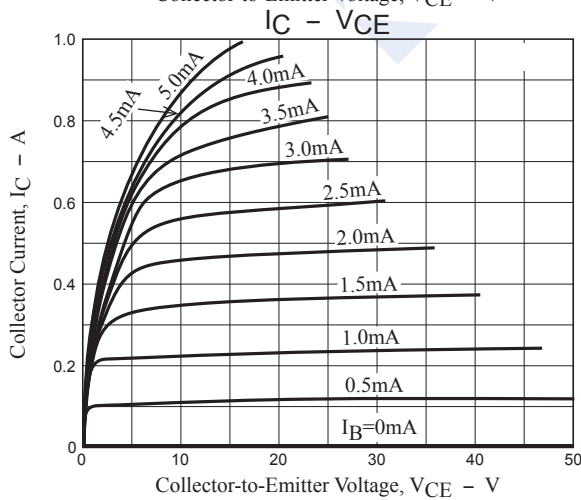
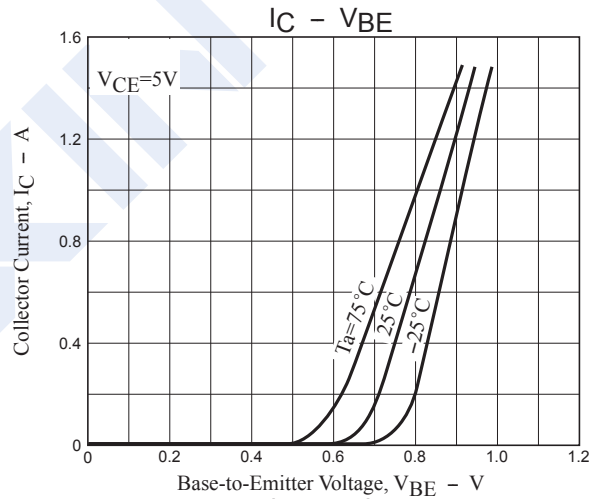
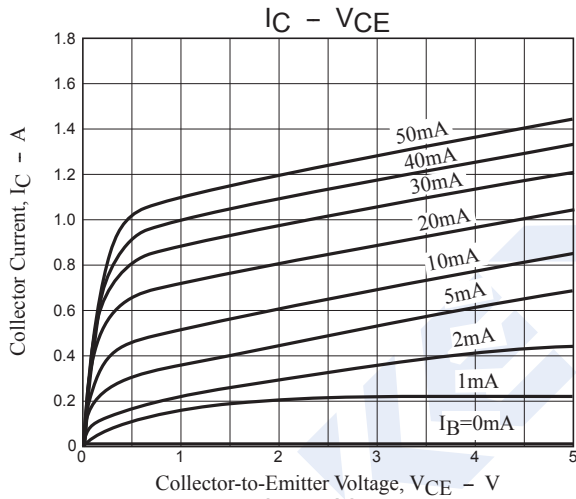
2SC3649-HF

Switching Time Test Circuit



$I_C = 10I_{B1} = -10I_{B2} = 0.7A$
 (For PNP, the polarity is reversed)

■ Typical Characteristics



NPN Transistors

2SC3649-HF

■ Typical Characteristics

