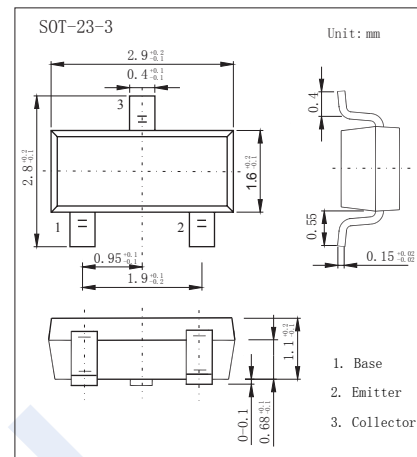


NPN Transistors

2SC3906K-HF

■ Features

- High Breakdown Voltage
- Complementary to 2SA1514K-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	120	V
Collector - Emitter Voltage	V_{CE0}	120	
Emitter - Base Voltage	V_{EB0}	5	
Collector Current - Continuous	I_C	50	mA
Collector Current - Pulse	I_{CP}	100	
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 50 \mu\text{A}, I_E = 0$	120			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1 \text{ mA}, I_B = 0$	120			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 50 \mu\text{A}, I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$			0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$			1.2	
DC current gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 2 \text{ mA}$	180		560	
Collector output capacitance	C_{ob}	$V_{CB} = 12\text{V}, I_E = 0, f = 1\text{MHz}$		2.5		pF
Transition frequency	f_T	$V_{CE} = 12\text{V}, I_E = -2 \text{ mA}, f = 1\text{MHz}$		140		MHz

■ Classification of h_{FE}

Type	2SC3906K-R-HF	2SC3906K-S-HF
Range	180-390	270-560
Marking	TR _F	TS _F

NPN Transistors

2SC3906K-HF

■ Typical Characteristics

Fig.1 Ground Emitter Propagation Characteristics

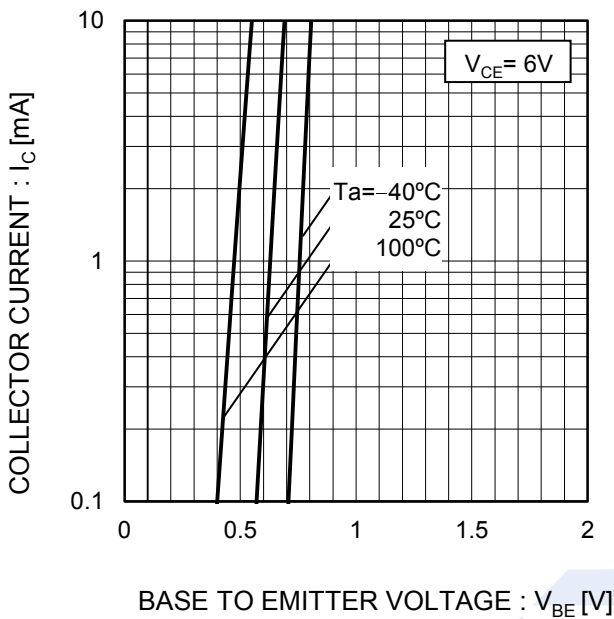


Fig.2 Typical Output Characteristics

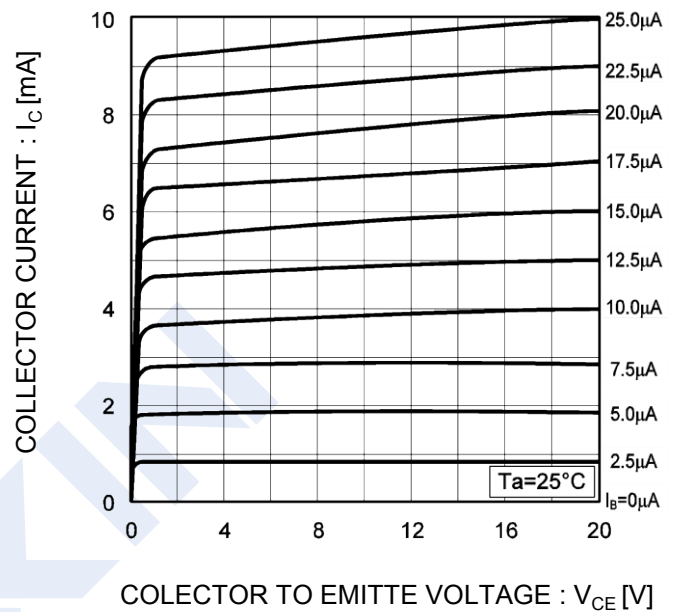


Fig.3 DC Current Gain vs. Collector Current(I)

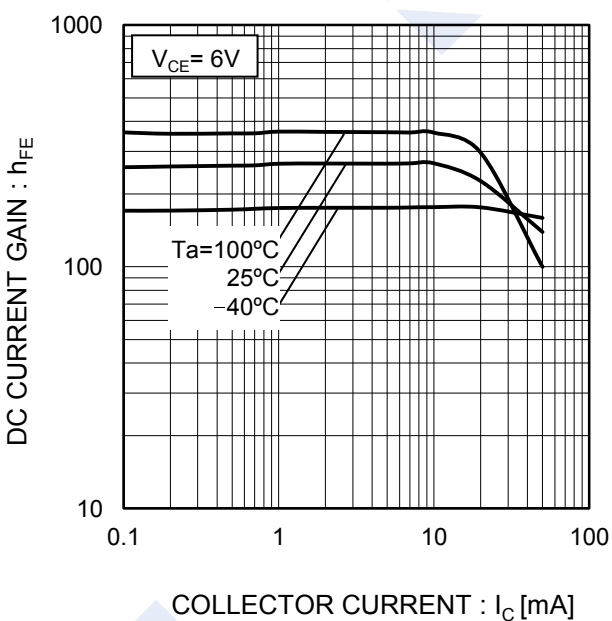
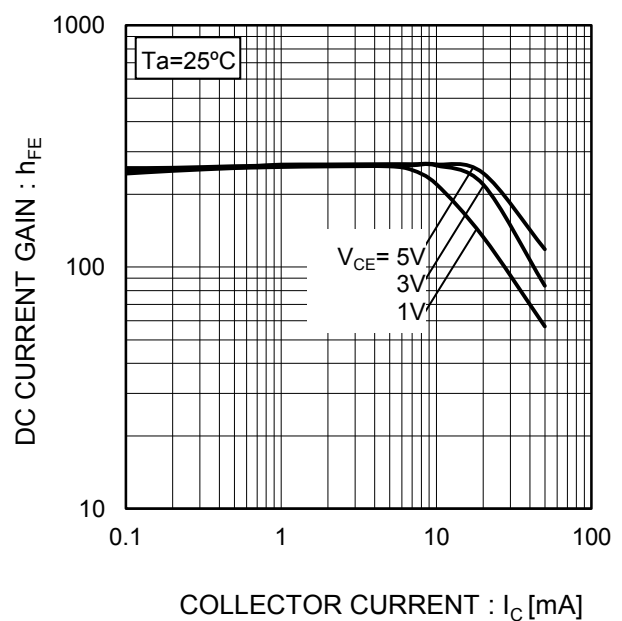


Fig.4 DC Current Gain vs. Collector Current(II)



NPN Transistors

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■ Typical Characteristics

Fig.5 Collector-Emmitter Saturation Voltage vs. Collector Current (I)

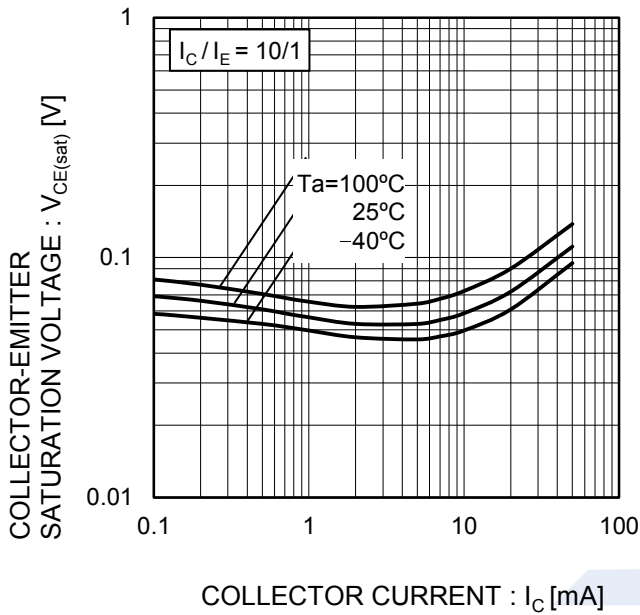


Fig.6 Collector-Emmitter Saturation Voltage vs. Collector Current (II)

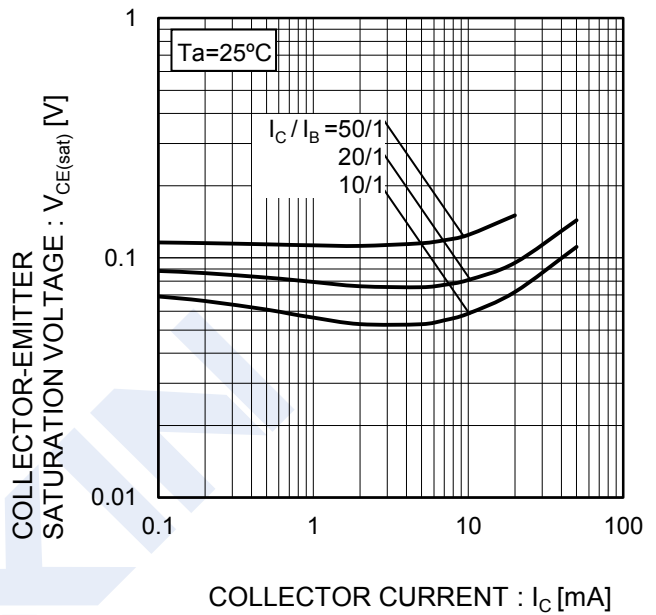


Fig.7 Base-Emmitter Saturation Voltage vs. Collector Current

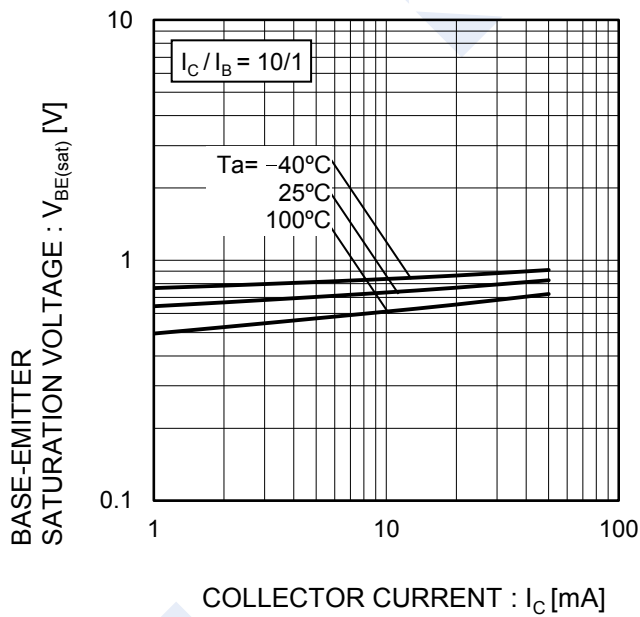
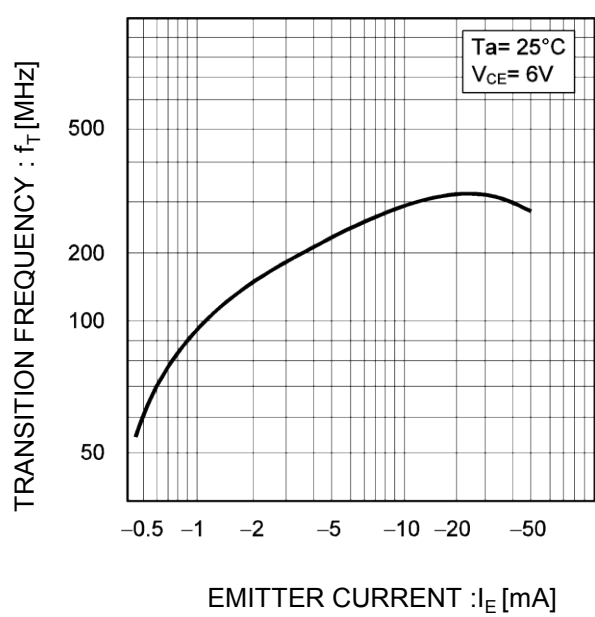


Fig.8 Gain Bandwidth Product vs. Emitter Current



NPN Transistors

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■ Typical Characteristics

Fig.9 Emitter input capacitance vs.
Emitter-Base Voltage
Collector output capacitance vs.
Collector-Base Voltage

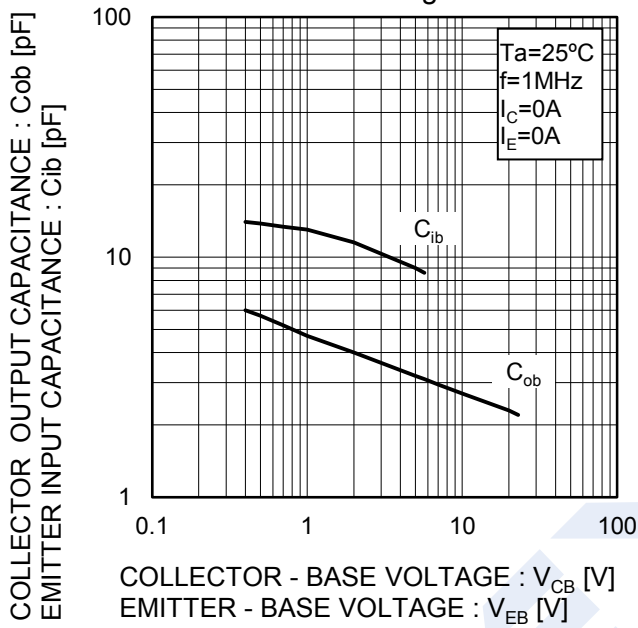


Fig.10 Safe Operating Area

