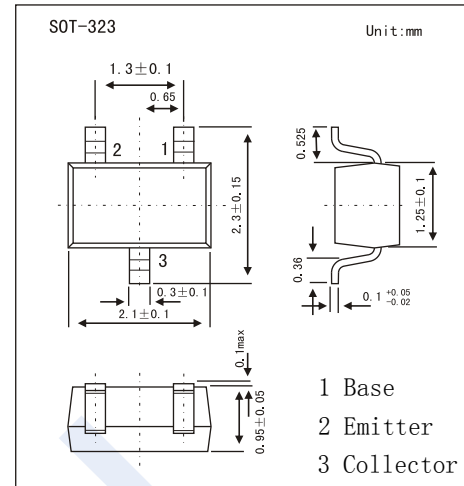


NPN Transistors

2SC4117

■ Features

- High voltage: $V_{CE0} = 120\text{ V}$
- High h_{FE} : $h_{FE} = 200\sim 700$
- Low noise: $NF = 1\text{ dB (typ.)}$, 10 dB (max)
- Small package
- Complementary to 2SA1587

■ 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	100	mA
Base Current	I_B	20	
Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_J	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 125	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 100\ \mu\text{A}$, $I_E = 0$	120			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1\ \text{mA}$, $I_B = 0$	120			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100\ \mu\text{A}$, $I_C = 0$	5			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 120\text{V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = 5\text{V}$, $I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\ \text{mA}$, $I_B = 1\ \text{mA}$			0.3	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}	$V_{CE} = 6\text{V}$, $I_C = 2\ \text{mA}$	200		700	
Noise figure	NF	$V_{CE} = 6\ \text{V}$, $I_C = 0.1\ \text{mA}$, $f = 1\ \text{kHz}$, $R_g = 10\ \text{k}\Omega$		1	10	dB
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$		3		pF
Transition frequency	f_T	$V_{CE} = 6\text{V}$, $I_C = 1\ \text{mA}$		100		MHz

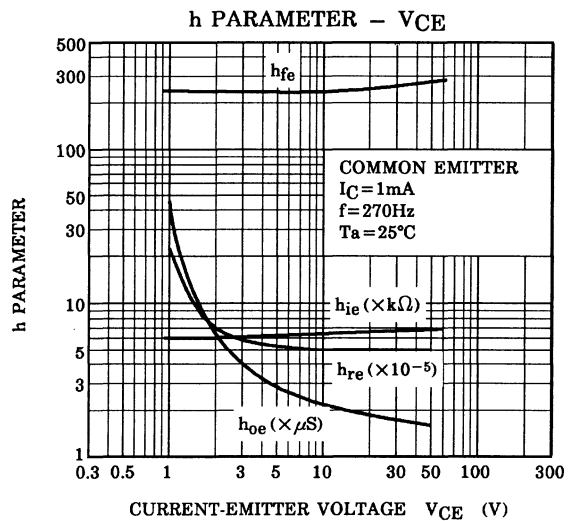
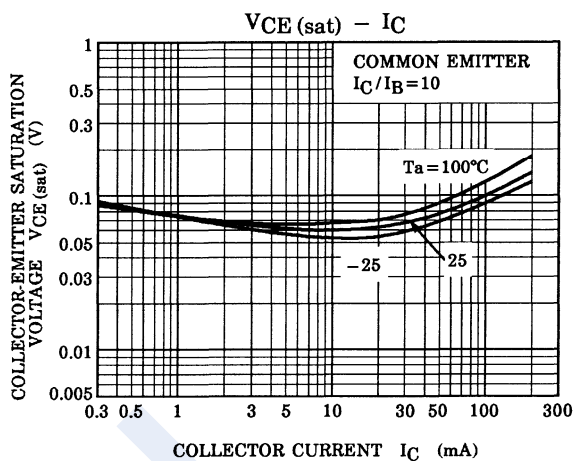
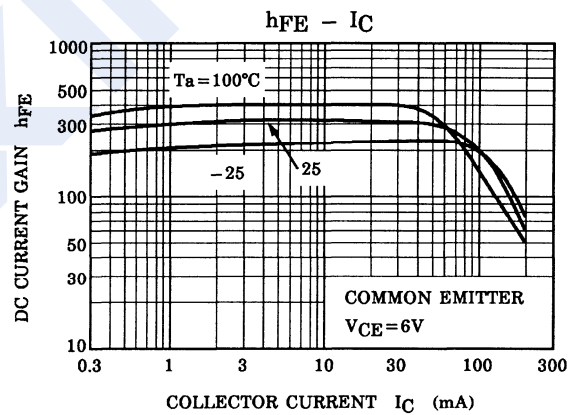
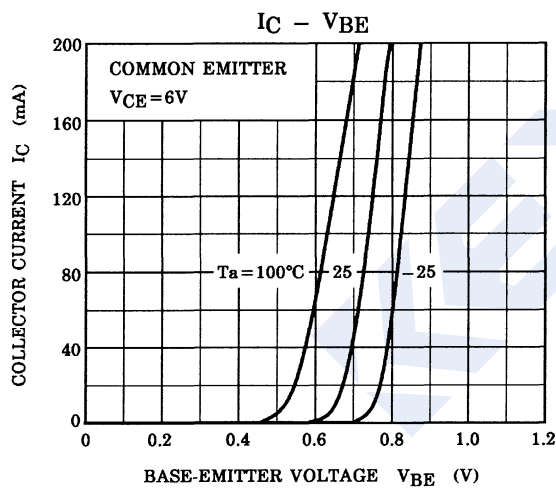
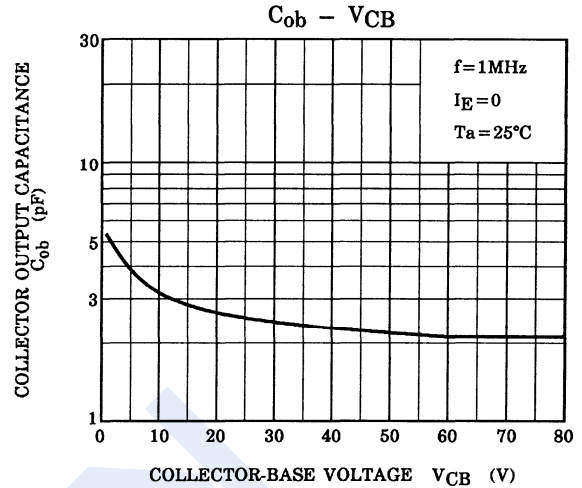
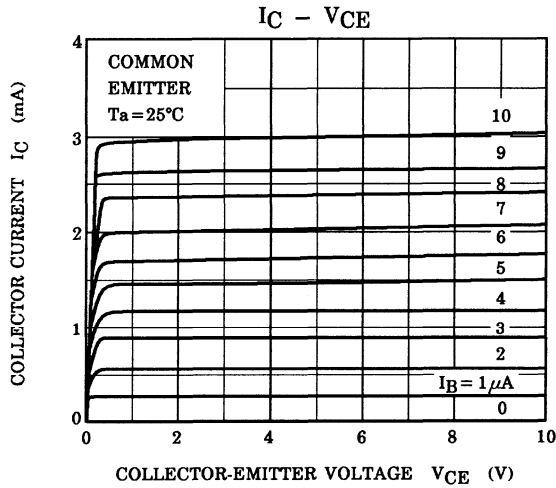
■ Classification of h_{FE}

Type	2SC4117-G	2SC4117-L
Range	200-400	350-700
Marking	DG	DL

NPN Transistors

2SC4117

■ Typical Characteristics



NPN Transistors

2SC4117

■ Typical Characteristics

