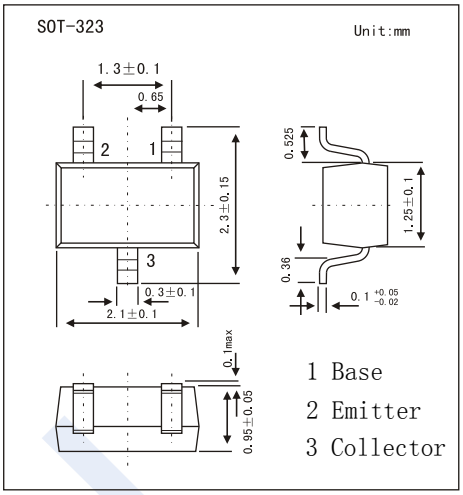
NPN Transistors

2SC4116



■ Features

- High voltage and high current
- High h_{FE}: h_{FE} = 70~700
- Low noise: NF = 1dB (typ.), 10dB (max)
- Small package
- Complementary to 2SA1586

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	50	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	150	mA
Base Current	I_B	30	
Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_J	125	℃
Storage Temperature Range	T_{stg}	-55 to 125	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 uA, I_E= 0	60			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	50			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 60V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100 mA, I_B=10mA		0.1	0.25	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=100 mA, I_B=10mA			1.2	
DC current gain	h_{FE}	V_{CE}= 6V, I_C= 2mA	70		700	
Noise figure	NF	V_{CE} = 6 V, I_C = 0.1 mA, f = 1 kHz, R_g = 10 kΩ,		1	10	dB
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E=0,f=1MHz		2	3.5	pF
Transition frequency	f_T	V_{CE}= 10V, I_C=1mA	80			MHz

■ Classification of h_{fe}

Type	2SC4116-O	2SC4116-Y	2SC4116-G	2SC4116-L
Range	70-140	120-240	200-400	350-700
Marking	LO	LY	LG	LL

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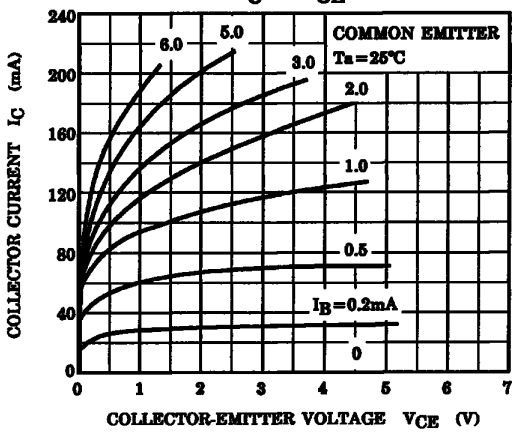
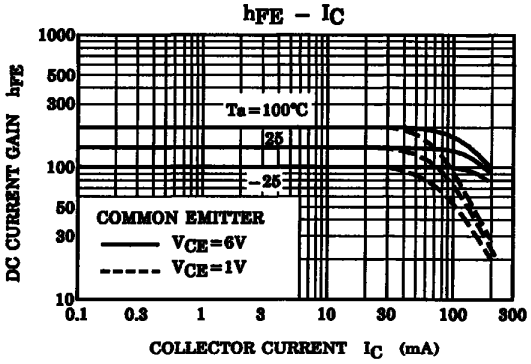
■ Typical Characterisitics

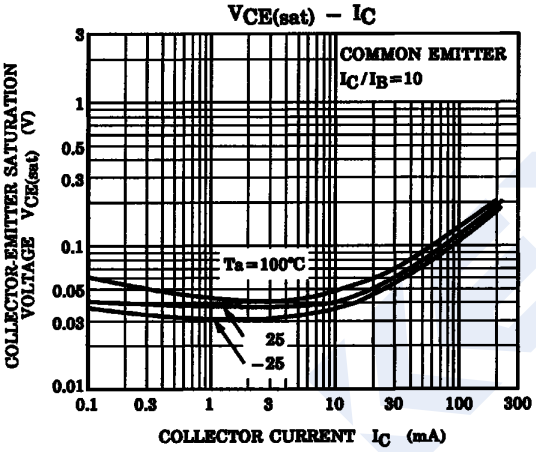
$I_C - V_{CE}$



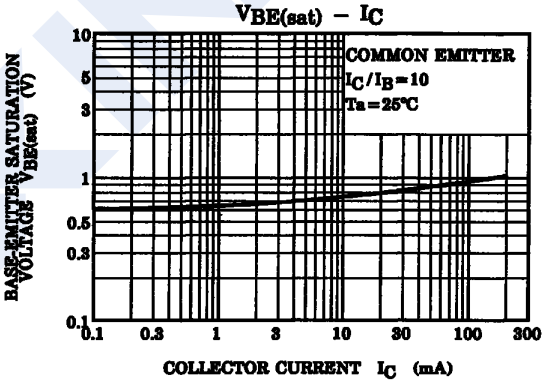
$h_{FE} - I_C$



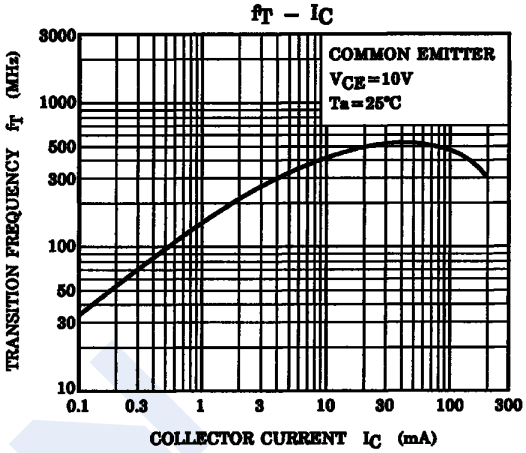
$V_{CE(sat)} - I_C$



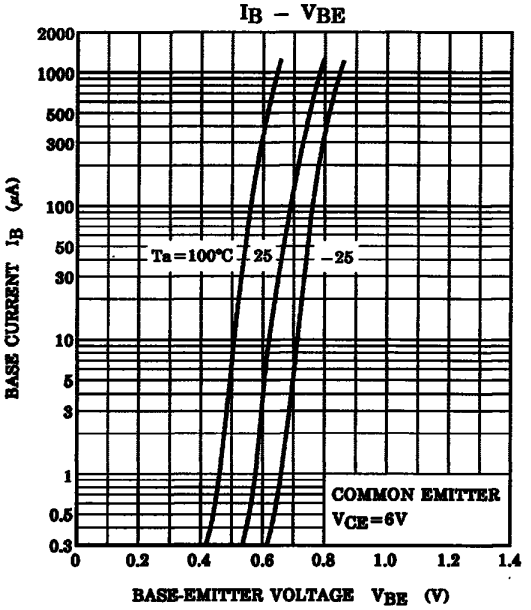
$V_{BE(sat)} - I_C$



$f_T - I_C$



$I_B - V_{BE}$



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■ Typical Characterisitics