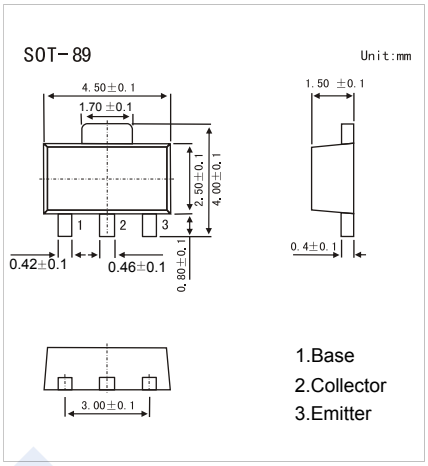
NPN Transistors

2SC3803



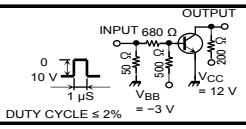
■ Features

- High transition frequency: f_T = 200 MHz
- Low collector output capacitance: C_{ob} = 3.5 pF
- Complementary to 2SA1483

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	45	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	200	mA
Base Current	I_B	50	
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	60			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	45			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 45V , 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			0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=100 mA, I_B=10mA			1	
DC current gain	h_{FE}	V_{CE}= 1V, I_C= 10mA	40		240	
		V_{CE}= 3V, I_C= 200mA	20			
Input impedance (real part)	$R_{e(hie)}$	V_{CE}= 10V, I_E= -10mA,f=200MHz			120	Ω
Turn-on time	t_{on}				40	ns
Storage time	t_{stg}				250	
Turn-off time	t_{off}				30	
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E= 0,f=1MHz		3.5	5	pF
Transition frequency	f_T	V_{CE}= 10V, I_C =10mA	100	200		MHz

■ Classification of $h_{fe(1)}$

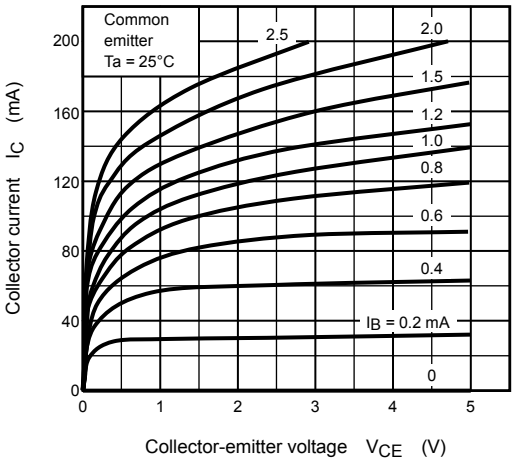
Type	2SC3803-R	2SC3803-O	2SC3803-Y
Range	40-80	70-140	120-240
Marking	VR*	VO*	VY*

NPN Transistors

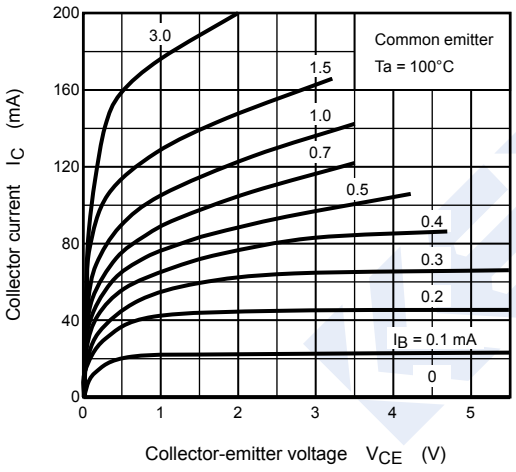
2SC3803

■ Typical Characterisitics

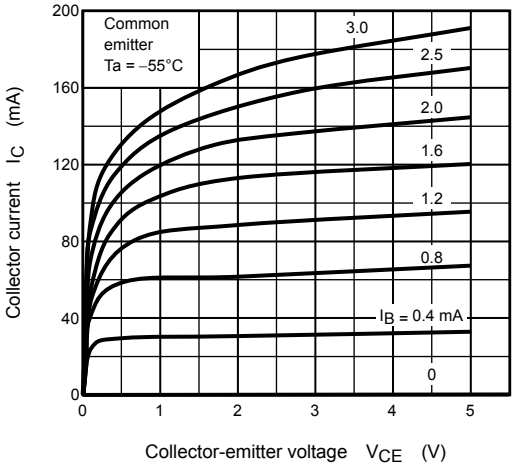
$I_C - V_{CE}$



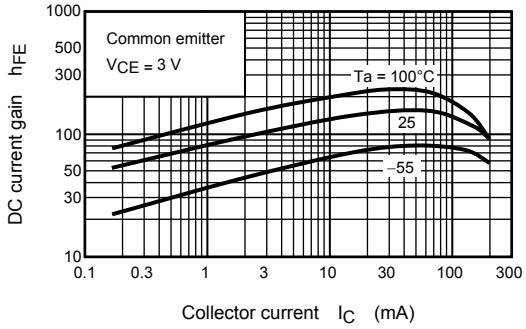
$I_C - V_{CE}$



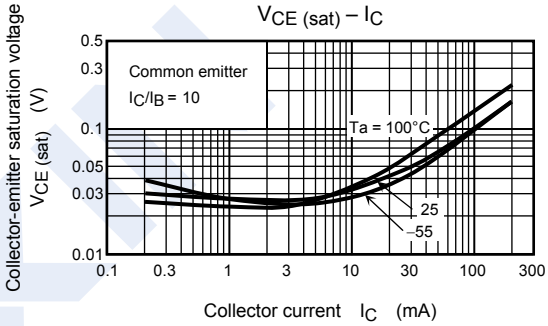
$I_C - V_{CE}$



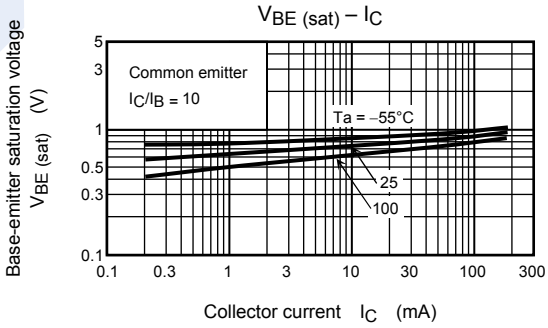
$h_{FE} - I_C$



$V_{CE\ (sat)} - I_C$



$V_{BE\ (sat)} - I_C$



$P_C - Ta$