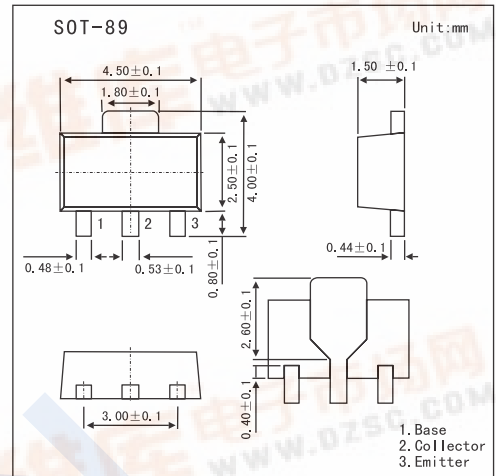


SMD Type Transistors

High Frequency Amplifier Applications

2SC3803



Features

- High Transition Frequency:  $f_T = 200\text{MHz}$ (typ.)
- Low Collector Output Capacitance:  $C_{ob} = 3.5\text{pF}$ (typ.)
- Complementary to 2SA1483

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

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	200	mA
Base Current	$I_B$	50	mA
Collector Power Dissipation	$P_C$	500	mW
	$P_C^*$	1.0	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\* Mounted on a ceramic substrate (250 mm<sup>2</sup> x 0.8t)

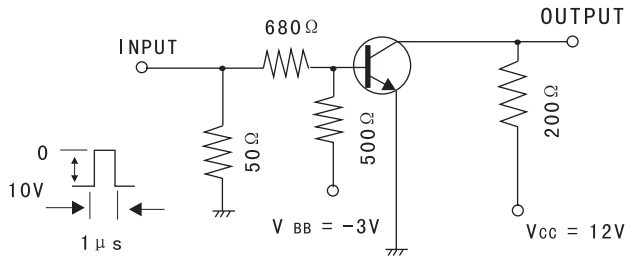
Electrical Characteristics  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 45\text{V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 1\text{V}, I_C = 10\text{mA}$	40		240	
		$V_{CE} = 3\text{V}, I_C = 200\text{mA}$	20			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$			0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$			1	V
Transition Frequency	$f_T$	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	100	200		MHz
Input Impedance (real part)	$Re(h_{ie})$	$V_{CB} = 10\text{V}, I_E = -10\text{mA}, f = 200\text{MHz}$			120	$\Omega$
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$		3.5	5	pF
Turn-On Time	$t_{on}$	See Test Circuit.		40		ns
Storage Time	$t_{stg}$			250		ns
Fall Time	$t_f$			30		ns



# 2SC3803

## Test Circuit

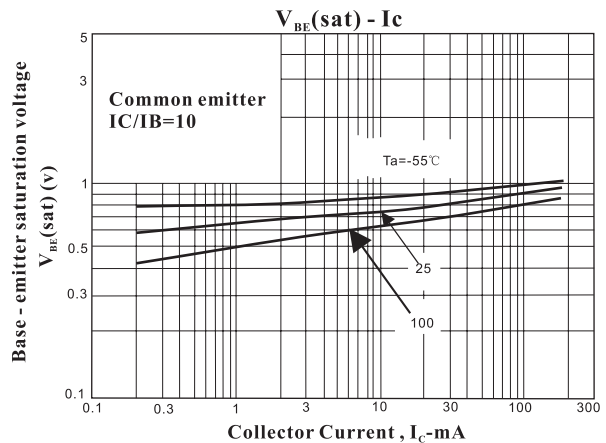
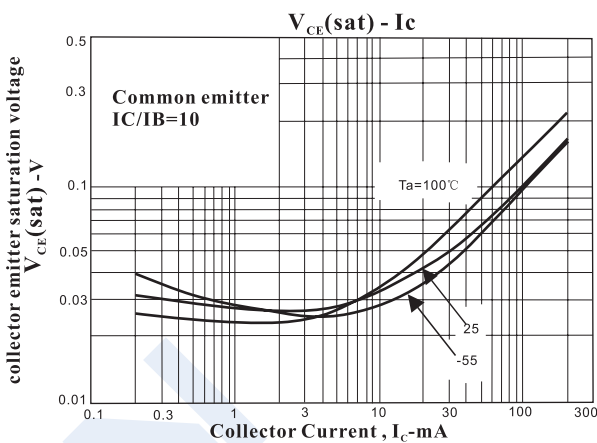
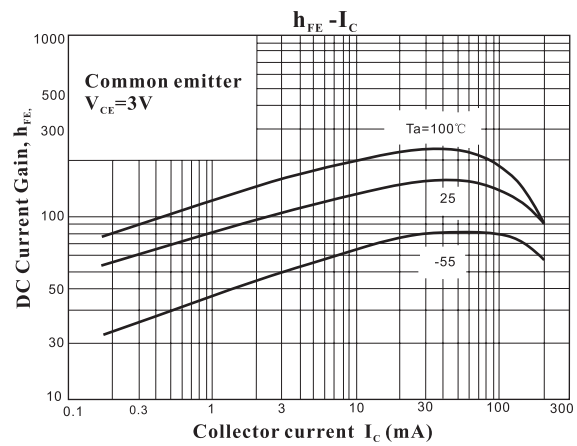
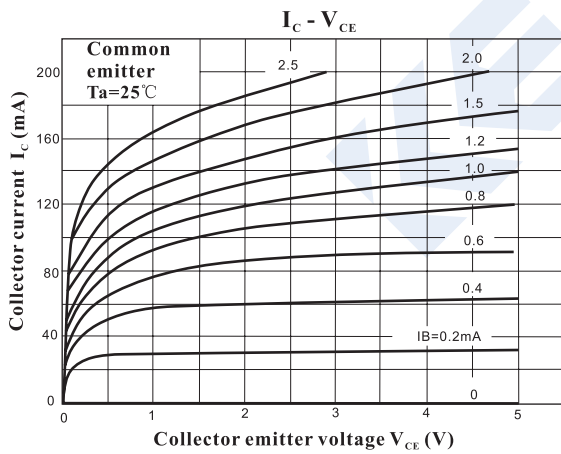


D. C.  $\leq$  2%

## hFE Classification

Marking	V		
Rank	R	O	Y
hFE	40 ~ 80	70 ~ 140	120 ~ 240

## Electrical Characteristics Curves



2SC3803

