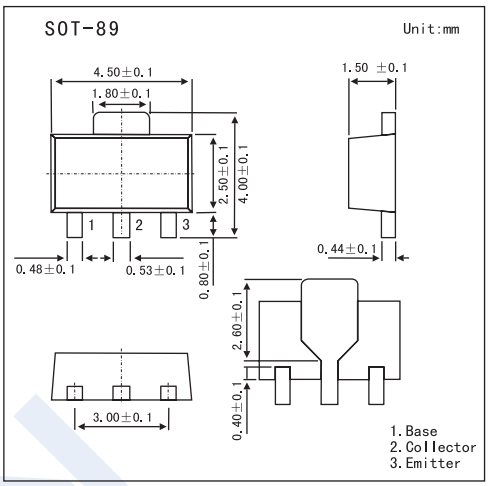
High Frequency Amplifier Applications

2SA1483



■ Features

- High Transition Frequency: f_T = 200MHz(typ.)
- Low Collector Output Capacitance: C_{ob} = 3.5pF(typ.)
- Complementary to 2SC3803

■ Absolute Maximum Ratings Ta = 25℃

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
Jumction temperature	T_j	150	℃
Storage temperature Range	T_{stg}	-55 to +150	℃

* Mounted on a ceramic substrate (250 mm^2 x 0.8t)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector 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	uA
DC Current Gain	h_{FE}	V_{CE} = -1V , I_C = -10mA	40		240	
		V_{CE} = -3V , I_C = -200mA	20			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -100mA , I_B = -10mA			-0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -100mA , I_B = -10mA			-1.0	V
Transition Frequency	f_T	V_{CE} = -10V , I_C = -10mA	100	200		MHz
Input Impedance (real part)	$R_{e(hie)}$	V_{CB} = -10V , I_E = 10mA , f = 200MHz			120	Ω
Collector Output Capacitance	C_{ob}	V_{CB} = -10V , I_E = 0 , f = 1MHz		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

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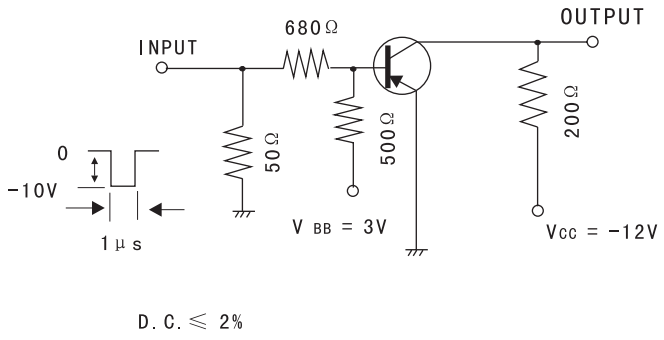
■ Test Circuit

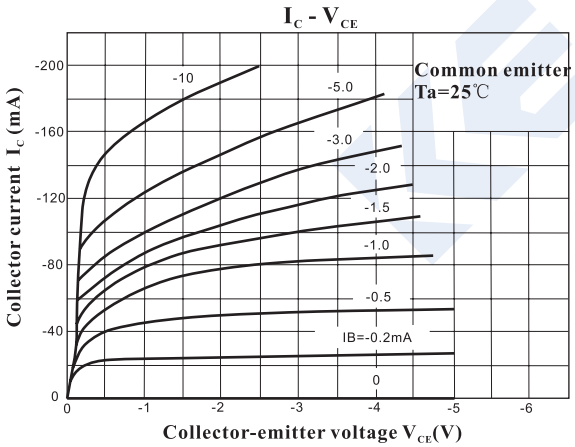


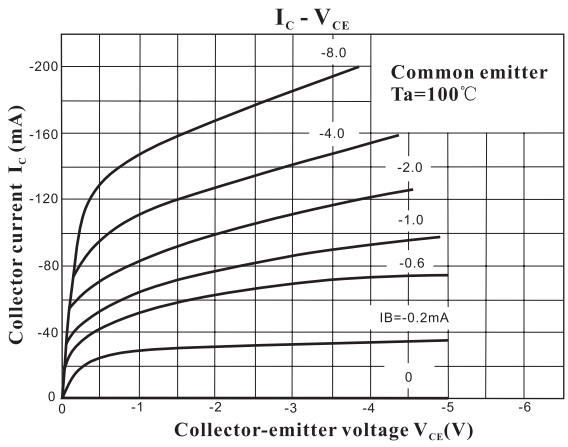
D.C. ≤ 2%

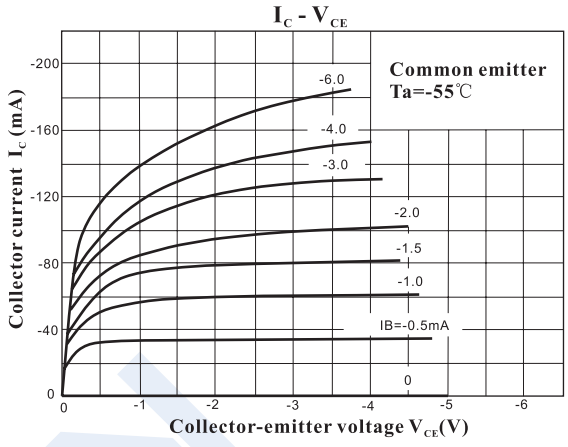
■ hFE Classification

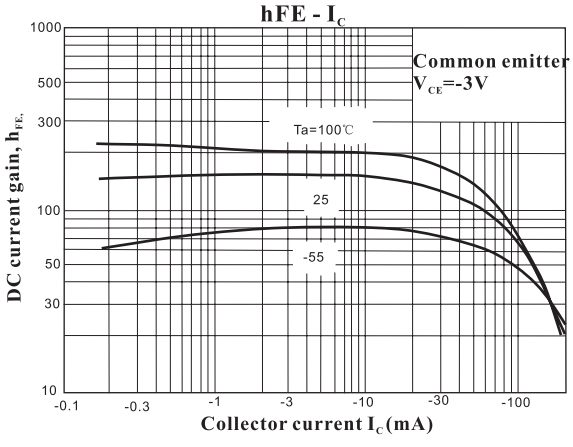
Marking	W		
Rank	R	O	Y
hFE	40 ~ 80	70 ~ 140	120 ~ 240

■ Electrical Characteristics Curves









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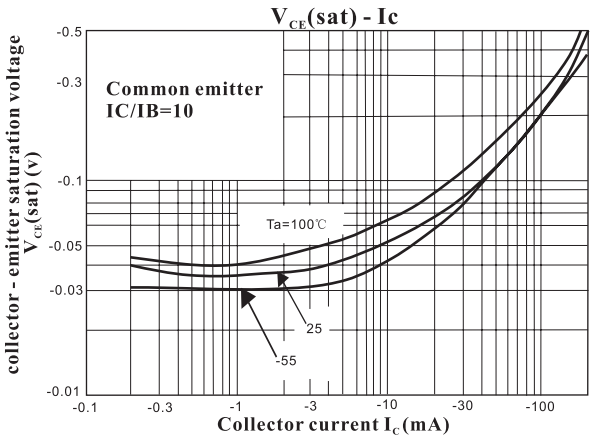
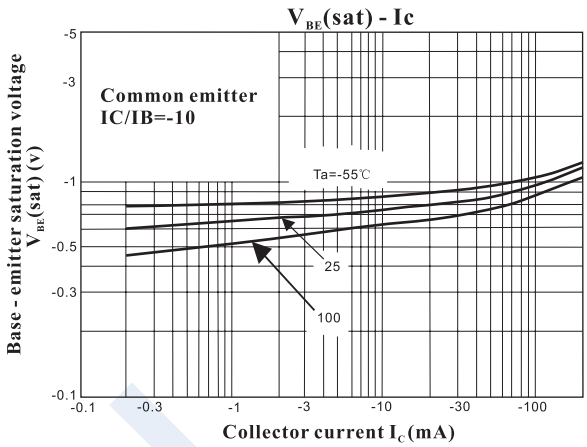
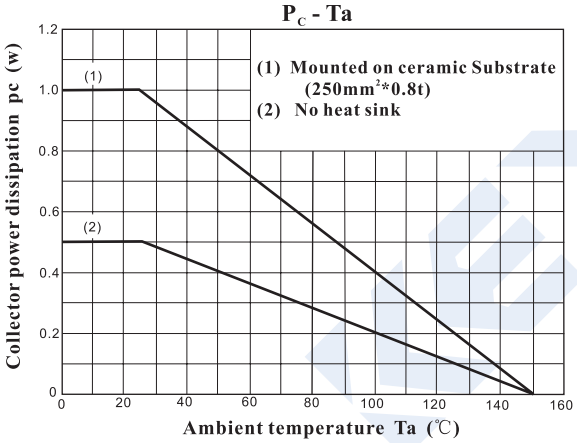

V_{CE}(sat) - Ic
Common emitter
IC/IB=10
Ta=100℃
25
-55
collector - emitter saturation voltage
V_{CE}(sat) (v)
Collector current I_C(mA)
-0.5
-0.3
-0.1
-0.05
-0.03
-0.01
-0.1
-0.3
-1
-3
-10
-30
-100


V_{BE}(sat) - Ic
Common emitter
IC/IB=-10
Ta=-55℃
25
100
Base - emitter saturation voltage
V_{BE}(sat) (v)
Collector current I_C(mA)
-5
-3
-1
-0.5
-0.3
-0.1
-0.1
-0.3
-1
-3
-10
-30
-100


P_C - Ta
(1) Mounted on ceramic Substrate
(250mm²*0.8t)
(2) No heat sink
(1)
(2)
Collector power dissipation pc (w)
Ambient temperature Ta (℃)
1.2
1.0
0.8
0.6
0.4
0.2
0
0
20
40
60
80
100
120
140
160