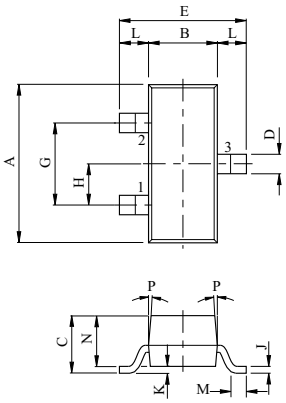
2N3906S

EPITAXIAL PLANAR PNP TRANSISTOR

GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES

· Low Leakage Current
: I_{CEX}=-50nA(Max.), I_{BL}=-50nA(Max.)
@V_{CE}=-30V, V_{EB}=-3V.
· Excellent DC Current Gain Linearity.
· Low Saturation Voltage
: $V_{CE(sat)}$=-0.4V(Max.) @I_C=-50mA, I_B=-5mA.
· Low Collector Output Capacitance
: C_{ob}=4.5pF(Max.) @V_{CB}=-5V.
· Complementary to 2N3904S.



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/-0.15
C	1.30 MAX
D	0.45+0.15/-0.05
E	2.40+0.30/-0.20
G	1.90
H	0.95
J	0.13+0.10/-0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/-0.10
P	7 °

1. EMITTER
2. BASE
3. COLLECTOR

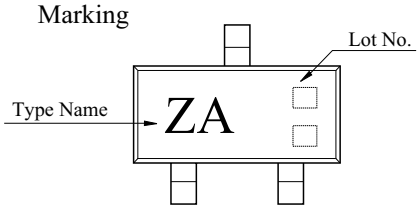
SOT-23

MAXIMUM RATING (Ta=25℃)

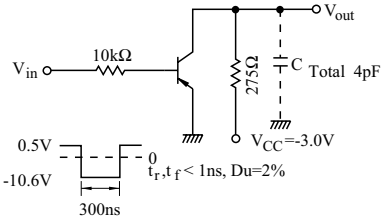
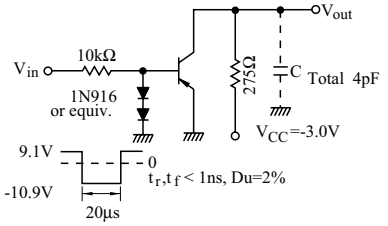
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA
Base Current	I_B	-50	mA
Collector Power Dissipation	P_C *	350	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

Note : * Package Mounted On 99.5% Alumina 10 ×8 ×0.6㎜)

Marking

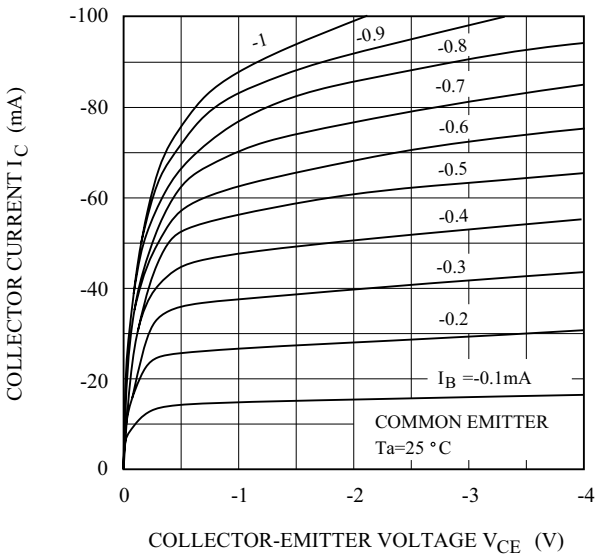


ELECTRICAL CHARACTERISTICS (Ta=25℃)

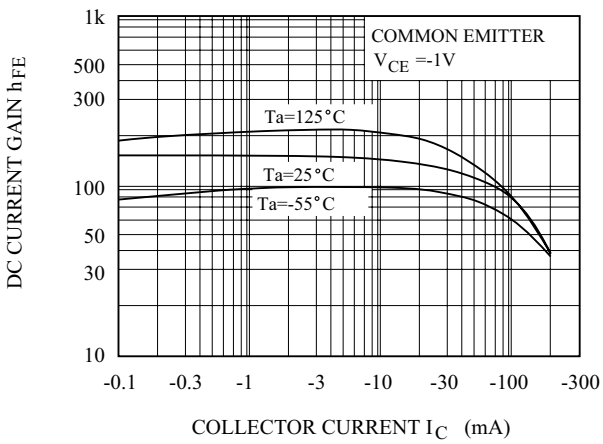
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CEX}	V_{CE}=-30V, V_{EB}=-3V	-	-	-50	nA
Base Cut-off Current		I_{BL}	V_{CE}=-30V, V_{EB}=-3V	-	-	-50	nA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-40	-	-	V
Collector-Emitter Breakdown Voltage *		$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-40	-	-	V
Emitter-Base Breakdown Voltage *		$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-5.0	-	-	V
DC Current Gain *		h_{FE}(1)	V_{CE}=-1V, I_C=-0.1mA	60	-	-	
		h_{FE}(2)	V_{CE}=-1V, I_C=-1mA	80	-	-	
		h_{FE}(3)	V_{CE}=-1V, I_C=-10mA	100	-	300	
		h_{FE}(4)	V_{CE}=-1V, I_C=-50mA	60	-	-	
		h_{FE}(5)	V_{CE}=-1V, I_C=-100mA	30	-	-	
Collector-Emitter Saturation Voltage *		$V_{CE(sat)}$1	I_C=-10mA, I_B=-1mA	-	-	-0.25	V
		$V_{CE(sat)}$2	I_C=-50mA, I_B=-5mA	-	-	-0.4	
Base-Emitter Saturation Voltage *		$V_{BE(sat)}$1	I_C=-10mA, I_B=-1mA	-0.65	-	-0.85	V
		$V_{BE(sat)}$2	I_C=-50mA, I_B=-5mA	-	-	-0.95	
Transition Frequency		f_T	V_{CE}=-20V, I_C=-10mA, f=100MHz	250	-	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=-5V, I_E=0, f=1MHz	-	-	4.5	pF
Input Capacitance		C_{ib}	V_{BE}=-0.5V, I_C=0, f=1MHz	-	-	10	pF
Input Impedance		h_{ie}	V_{CE}=-10V, I_C=-1mA, f=1kHz	2.0	-	12	kΩ
Voltage Feedback Ratio		h_{re}		1.0	-	10	$x10^{-4}$
Small-Signal Current Gain		h_{fe}		100	-	400	
Collector Output Admittance		h_{oe}		3.0	-	60	μ℧
Noise Figure		NF	V_{CE}=-5V, I_C=-0.1mA, Rg=1kΩ, f=10Hz~15.7kHz	-	-	4.0	dB
Switching Time	Delay Time	t_d		-	-	35	nS
	Rise Time	t_r		-	-	35	
	Storage Time	t_{stg}		-	-	225	
	Fall Time	t_f		-	-	75	

* Pulse Test : Pulse Width ≦300μS, Duty Cycle ≦2%.

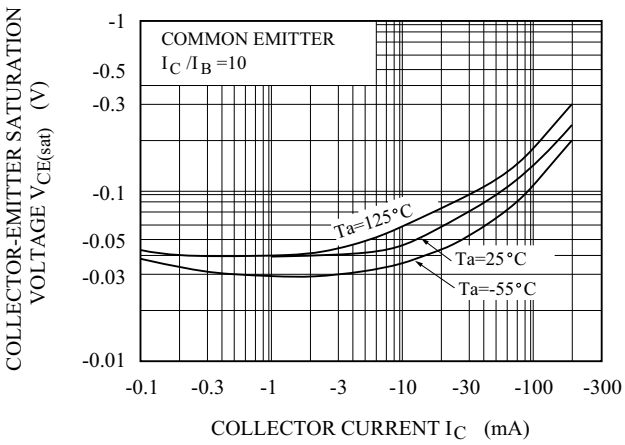
I_C - V_{CE}



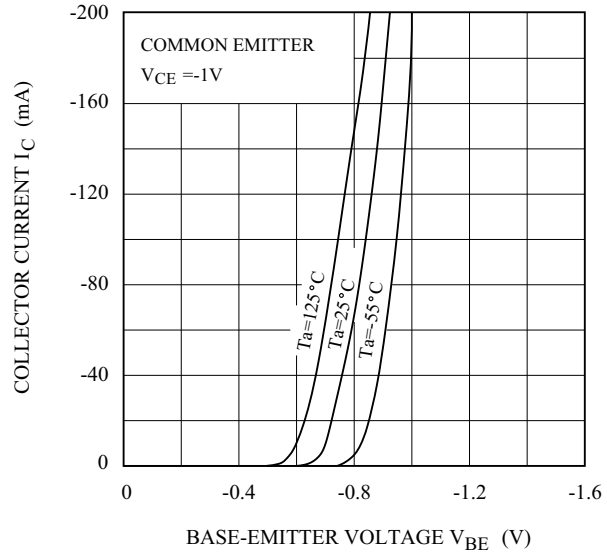
h_{FE} - I_C



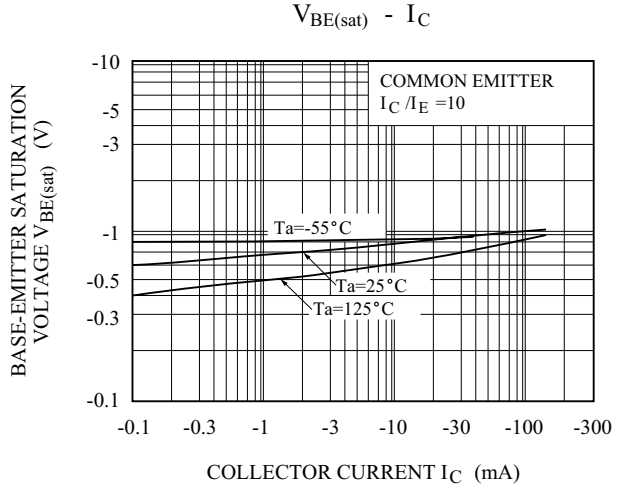
$V_{CE(sat)}$ - I_C



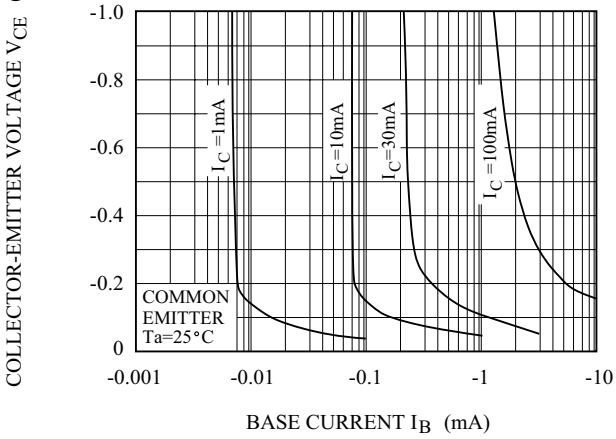
I_C - V_{BE}



$V_{BE(sat)}$ - I_C



V_{CE} - I_B



C_{ob} - V_{CB} , C_{ib} - V_{EB}