

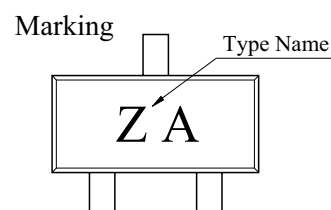
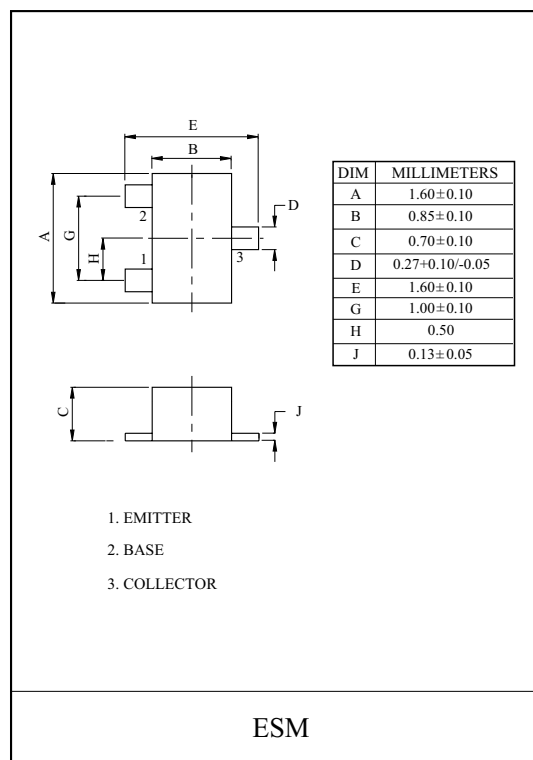
GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES

- Low Leakage Current
: $I_{CEX} = -50\text{nA}(\text{Max.})$, $I_{BL} = -50\text{nA}(\text{Max.})$
@ $V_{CE} = -30\text{V}$, $V_{EB} = -3\text{V}$.
- Excellent DC Current Gain Linearity.
- Low Saturation Voltage
: $V_{CE(\text{sat})} = -0.4\text{V}(\text{Max.})$ @ $I_C = -50\text{mA}$, $I_B = -5\text{mA}$.
- Low Collector Output Capacitance
: $C_{ob} = 4.5\text{pF}(\text{Max.})$ @ $V_{CB} = -5\text{V}$.
- Complementary to 2N3904E.

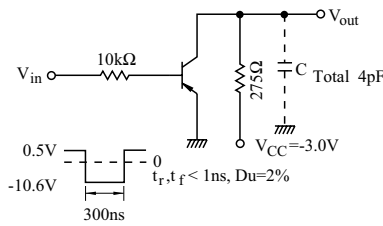
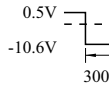
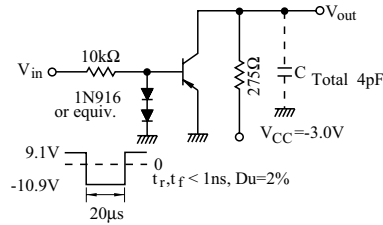
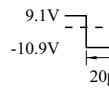
MAXIMUM RATING (Ta=25 °C)

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	100	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C



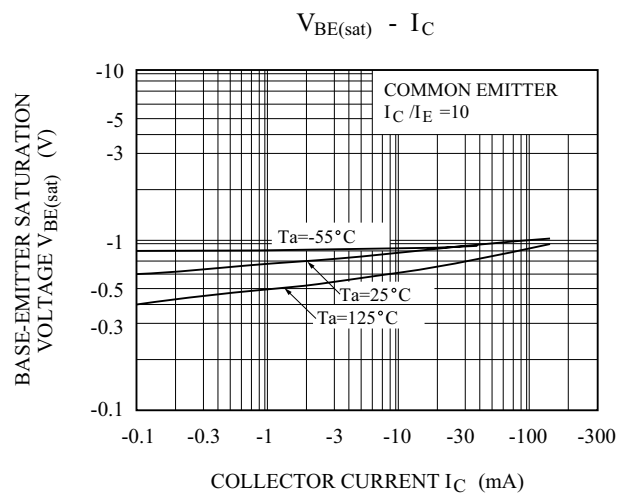
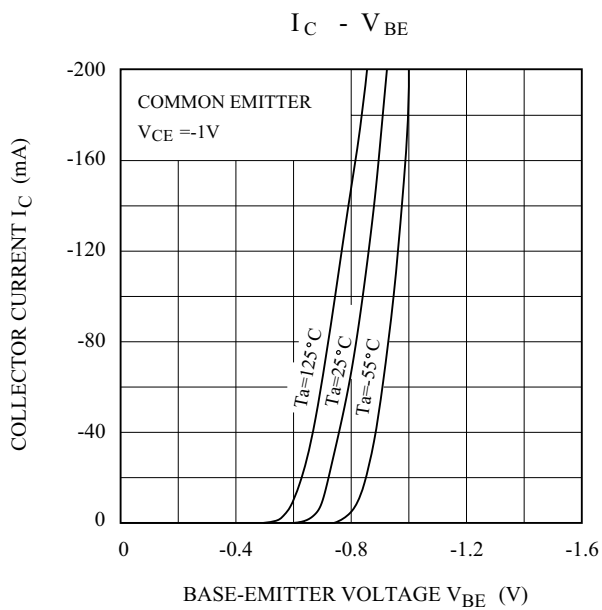
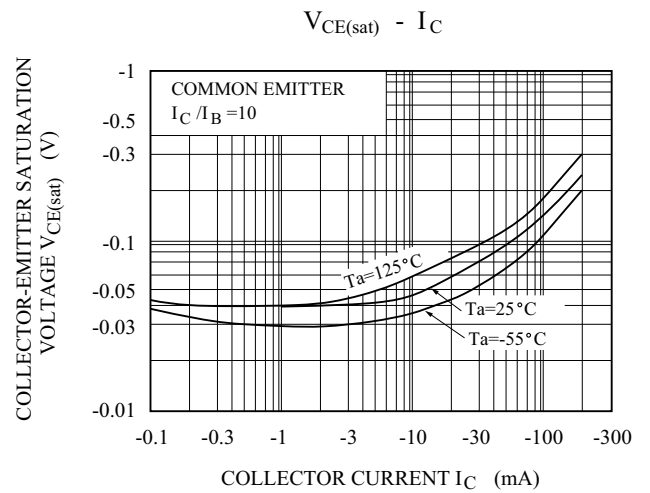
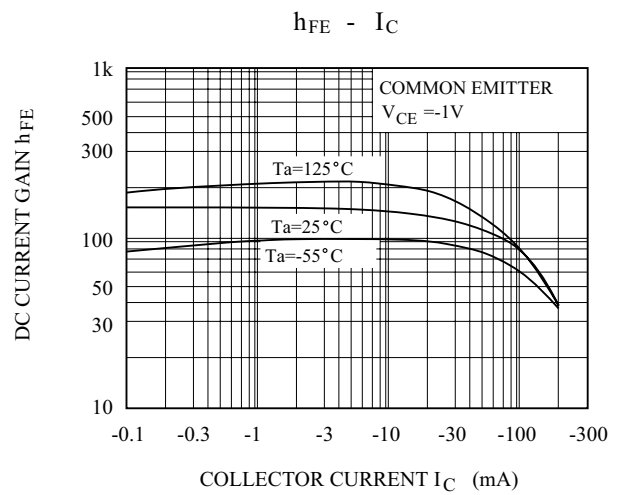
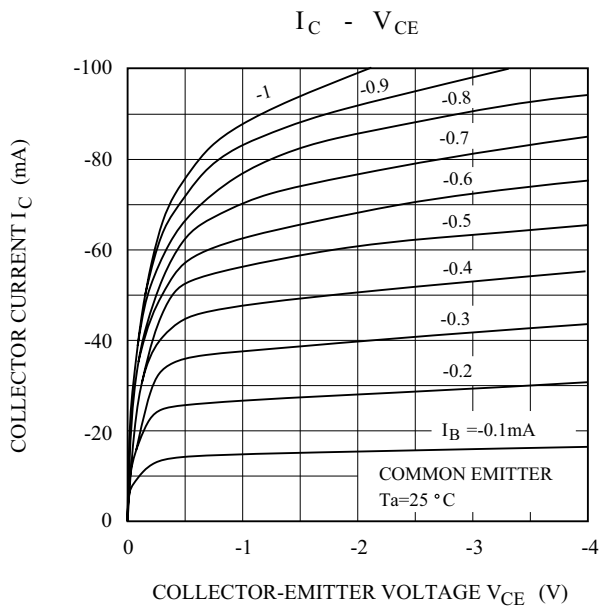
2N3906E

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

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	μS
Noise Figure		NF	V _{CE} =-5V, I _C =-0.1mA, R _g =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 $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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