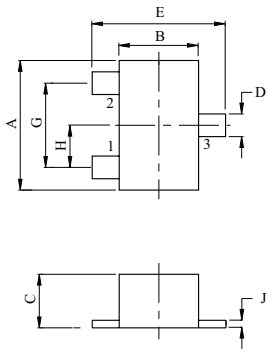
KTN2222AE

EPITAXIAL PLANAR NPN TRANSISTOR

GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES

· Low Leakage Current
: I_{CEX}=10nA(Max.) ; V_{CE}=60V, $V_{EB(OFF)}$=3V.
· Low Saturation Voltage
: $V_{CE(sat)}$=0.3V(Max.) ; I_C=150mA, I_B=15mA.
· Complementary to KTN2907AE.



DIM	MILLIMETERS
A	1.60±0.10
B	0.85±0.10
C	0.70±0.10
D	0.27+0.10/-0.05
E	1.60±0.10
G	1.00±0.10
H	0.50
J	0.13±0.05

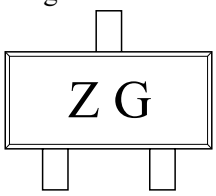
1. EMITTER
2. BASE
3. COLLECTOR

ESM

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Collector Power Dissipation (Ta=25℃)	P_C	100	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

Marking

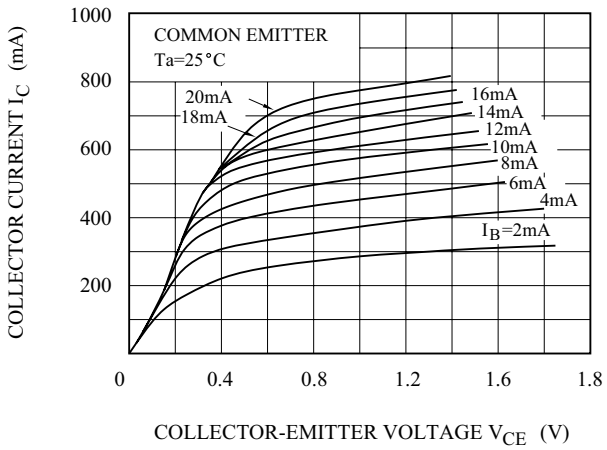


ELECTRICAL CHARACTERISTICS (Ta=25℃)

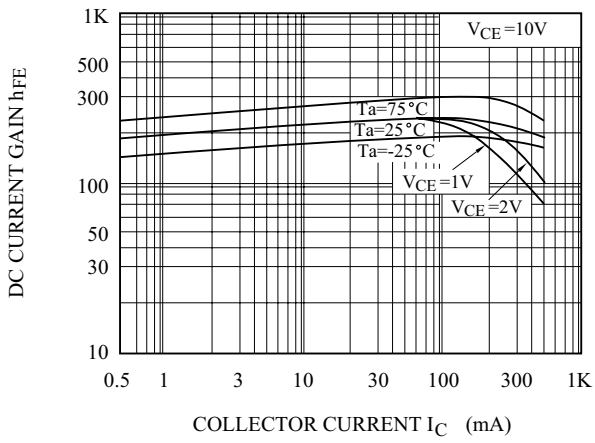
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CEX}	V_{CE}=60V, $V_{EB(OFF)}$=3V	-	-	10	nA
Collector Cut-off Current		I_{CBO}	V_{CB}=60V, I_E=0	-	-	0.01	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=3V, I_C=0	-	-	10	nA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=10μA, I_E=0	75	-	-	V
Collector-Emitter Breakdown Voltage *		$V_{(BR)CEO}$	I_C=10mA, I_B=0	40	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=10μA, I_C=0	6	-	-	V
DC Current Gain *		h_{FE}(1)	I_C=0.1mA, V_{CE}=10V	35	-	-	
		h_{FE}(2)	I_C=1mA, V_{CE}=10V	50	-	-	
		h_{FE}(3)	I_C=10mA, V_{CE}=10V	75	-	-	
		h_{FE}(4)	I_C=150mA, V_{CE}=10V	100	-	300	
		h_{FE}(5)	I_C=500mA, V_{CE}=10V	40	-	-	
Collector-Emitter Saturation Voltage *		$V_{CE(sat)}$1	I_C=150mA, I_B=15mA	-	-	0.3	V
		$V_{CE(sat)}$2	I_C=500mA, I_B=50mA	-	-	1	
Base-Emitter Saturation Voltage *		$V_{BE(sat)}$1	I_C=150mA, I_B=15mA	0.6	-	1.2	V
		$V_{BE(sat)}$2	I_C=500mA, I_B=50mA	-	-	2.0	
Transition Frequency		f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300	-	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz	-	-	8	pF
Input Capacitance		C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz	-	-	25	pF
Input Impedance		h_{ie}	I_C=1mA, V_{CE}=10V, f=1kHz	2	-	8	kΩ
			I_C=10mA, V_{CE}=10V, f=1kHz	0.25	-	1.25	
Voltage Feedback Ratio		h_{re}	I_C=1mA, V_{CE}=10V, f=1kHz	-	-	8	$x10^{-4}$
			I_C=10mA, V_{CE}=10V, f=1kHz	-	-	4	
Small-Singal Current Gain		h_{fe}	I_C=1mA, V_{CE}=10V, f=1kHz	50	-	300	
			I_C=10mA, V_{CE}=10V, f=1kHz	75	-	375	
Collector Output Admittance		h_{oe}	I_C=1mA, V_{CE}=10V, f=1kHz	5	-	35	
			I_C=10mA, V_{CE}=10V, f=1kHz	25	-	200	
Collector-Base Time Constant		$C_c \cdot rbb'$	I_E=20mA, V_{CB}=20V, f=31.8MHz	-	-	150	pS
Noise Figure		NF	I_C=100μA, V_{CE}=10V,	-	-	4	dB
Switching Time	Delay Time	t_d	V_{CC}=30V, $V_{BE(OFF)}$=0.5V I_C=150mA, I_{B1}=15mA	-	-	10	nS
	Rise Time	t_r		-	-	25	
	Storage Time	t_{stg}	V_{CC}=30V, I_C=150mA I_{B1}=-I_{B2}=15mA	-	-	225	
	Fall Time	t_f		-	-	60	

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

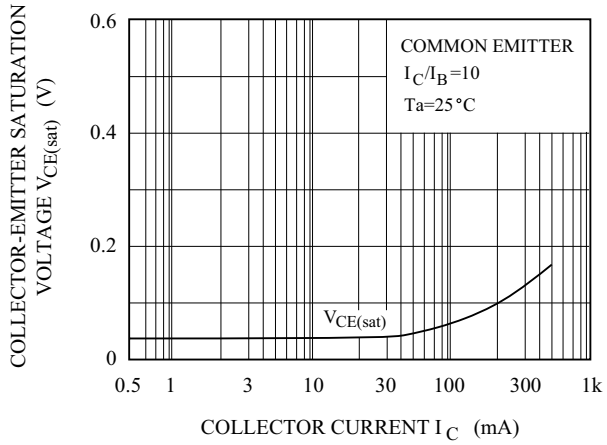
I_C - V_{CE}



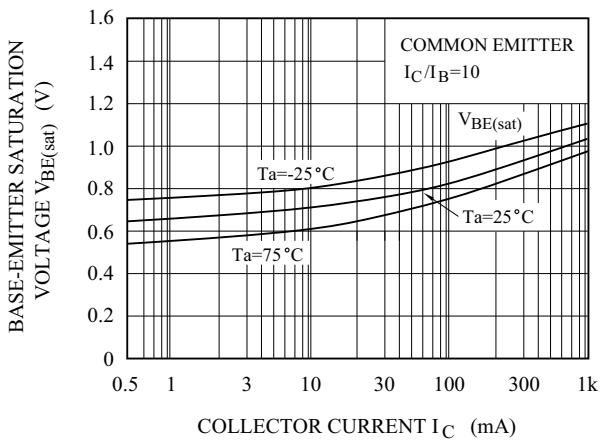
h_{FE} - I_C



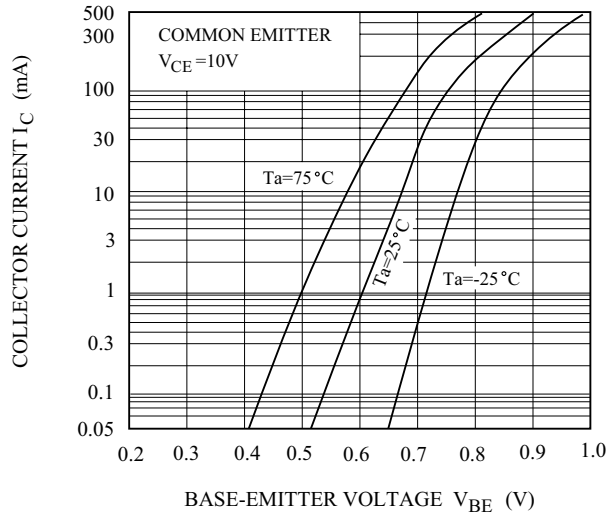
$V_{CE(sat)}$ - I_C



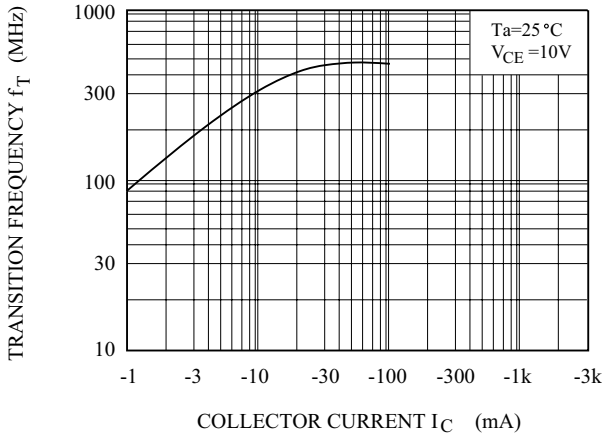
$V_{BE(sat)}$ - I_C



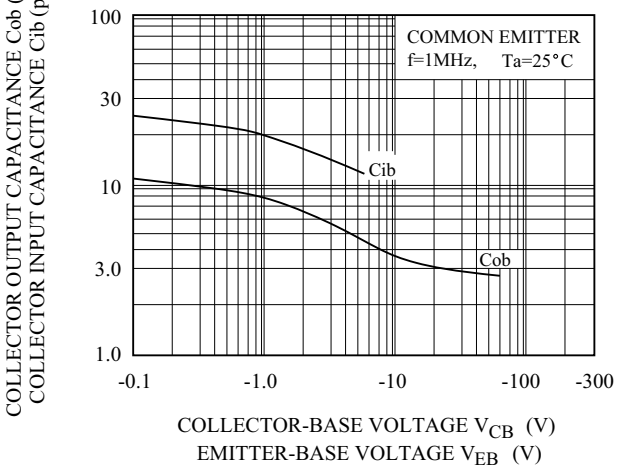
I_C - V_{BE}



f_T - I_C



Cob - V_{CB}
Cib - V_{EB}



Pc - Ta