

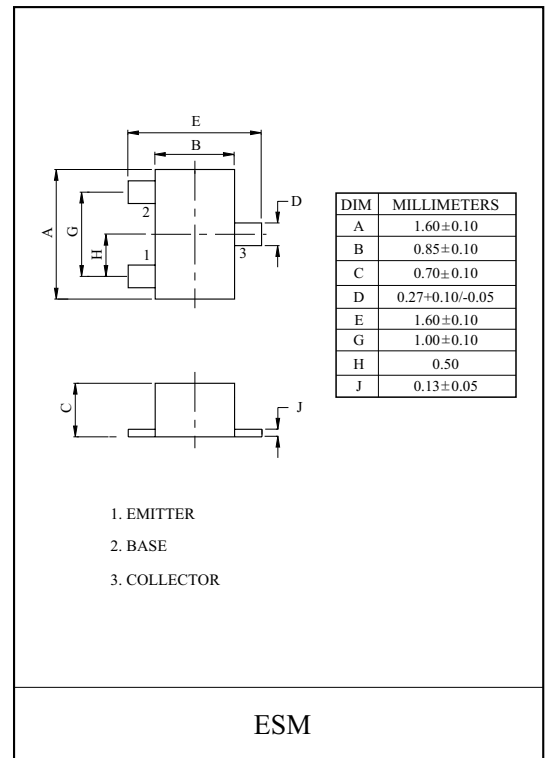
GENERAL PURPOSE APPLICATION.  
SWITCHING APPLICATION.

#### FEATURES

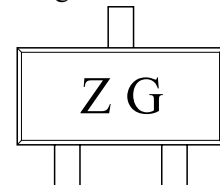
- Low Leakage Current  
:  $I_{CEX}=10\text{nA}(\text{Max.})$ ;  $V_{CE}=60\text{V}$ ,  $V_{EB(\text{OFF})}=3\text{V}$ .
- Low Saturation Voltage  
:  $V_{CE(\text{sat})}=0.3\text{V}(\text{Max.})$ ;  $I_C=150\text{mA}$ ,  $I_B=15\text{mA}$ .
- Complementary to KTN2907AE.

#### MAXIMUM RATING (Ta=25 °C)

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 °C)	$P_C$	100	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{\text{stg}}$	-55 ~ 150	°C



Marking



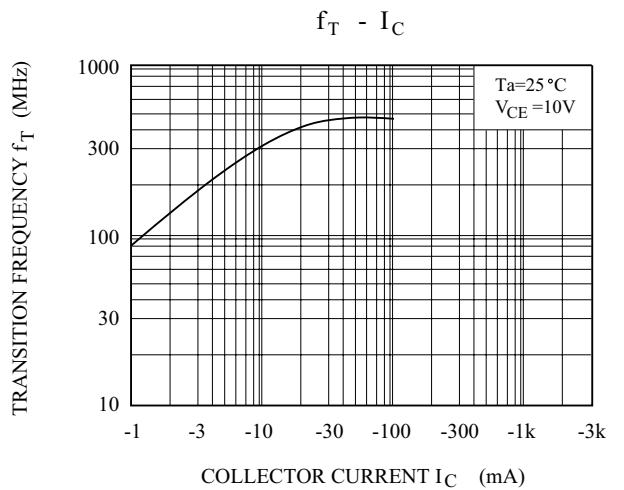
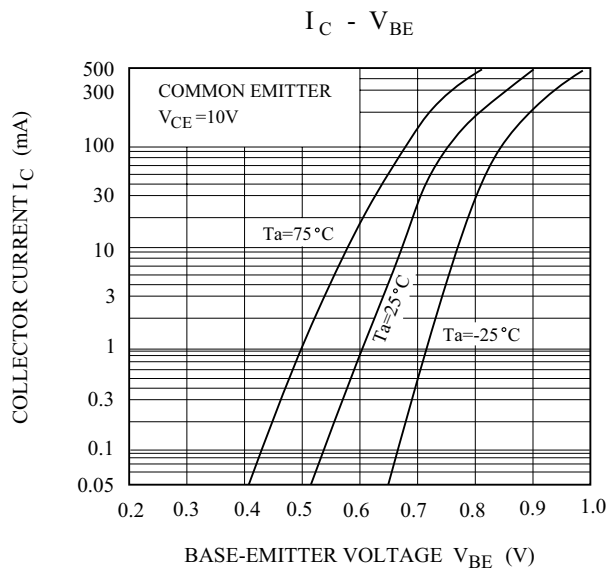
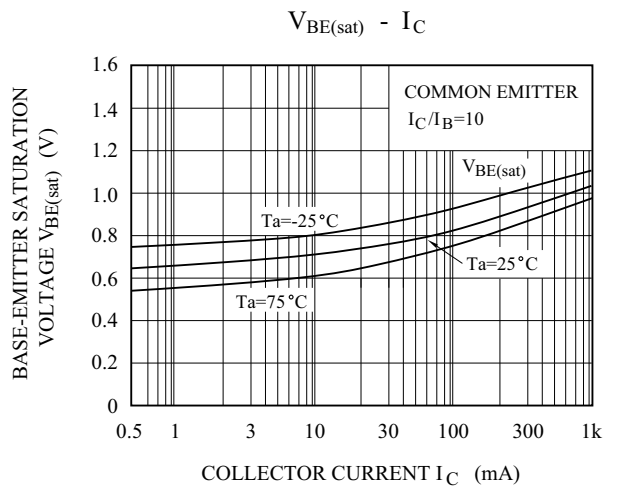
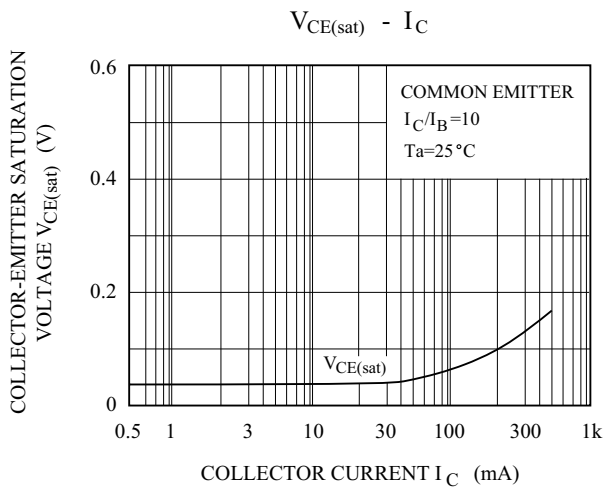
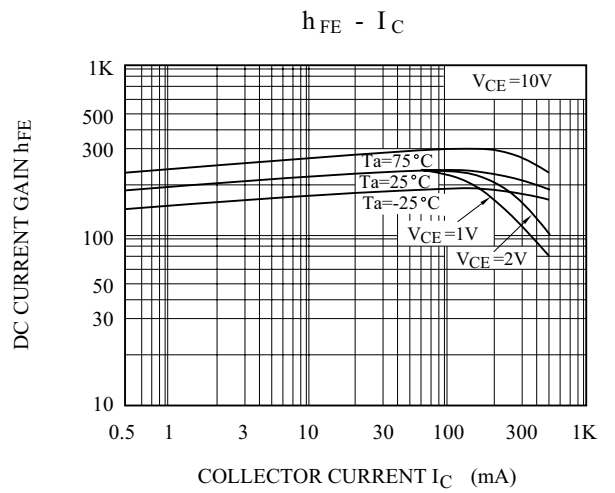
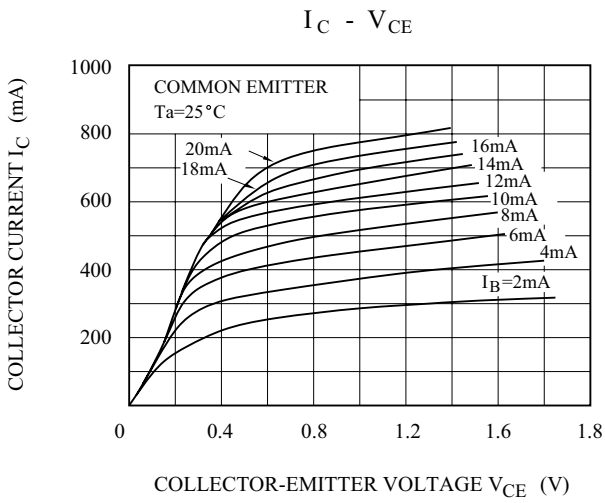
# KTN2222AE

## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

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	$\mu A$	
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=3V, I_C=0$	-	-	10	nA	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	75	-	-	V	
Collector-Emitter Breakdown Voltage *	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	40	-	-	V	
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	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	k $\Omega$	
		$I_C=10mA, V_{CE}=10V, f=1kHz$	0.25	-	1.25		
Voltage Feedback Ratio	$h_{re}$	$I_C=1mA, V_{CE}=10V, f=1kHz$	-	-	8	$\times 10^4$	
		$I_C=10mA, V_{CE}=10V, f=1kHz$	-	-	4		
Small-Signal 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	$C_c \cdot r_{bb'}$	$I_E=20mA, V_{CB}=20V, f=31.8MHz$	-	-	150	pS	
Noise Figure	NF	$I_C=100\mu A, V_{CE}=10V,$	-	-	4	dB	
Switching Time	Delay Time	$t_d$	$V_{CC}=30V, V_{BE(OFF)}=0.5V$	-	-	10	nS
	Rise Time	$t_r$	$I_C=150mA, I_{B1}=15mA$	-	-	25	
	Storage Time	$t_{stg}$	$V_{CC}=30V, I_C=150mA$	-	-	225	
	Fall Time	$t_f$	$I_{B1}=-I_{B2}=15mA$	-	-	60	

\* Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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