

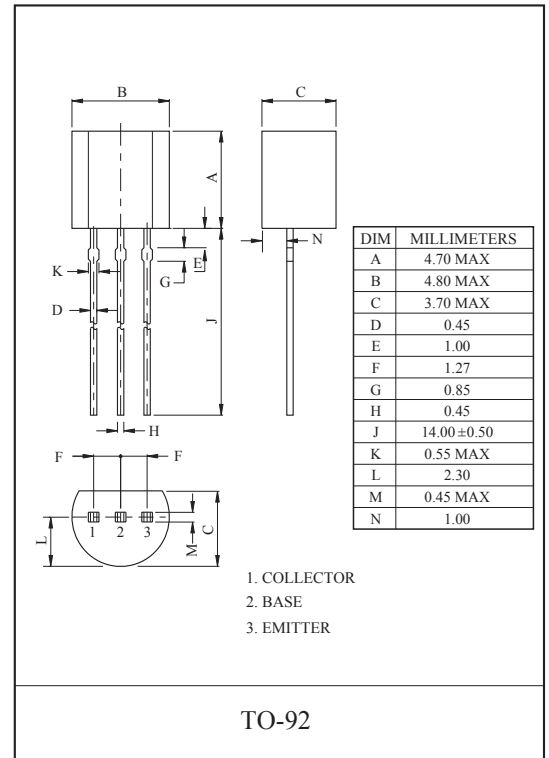
HIGH SPEED SWITCHING APPLICATION.

### FEATURES

- High Frequency Characteristics  
:  $f_T=500\text{MHz}(\text{Min.})$  ( $V_{CE}=10\text{V}$ ,  $f=100\text{MHz}$ ,  $I_C=10\text{mA}$ ).
- Excellent Switching Characteristics.

### MAXIMUM RATING ( $T_a=25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	15	V
Emitter-Base Voltage	$V_{EBO}$	4.5	V
Collector Current	$I_C$	500	mA
Collector Power Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	625	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 ~ 150	$^\circ\text{C}$

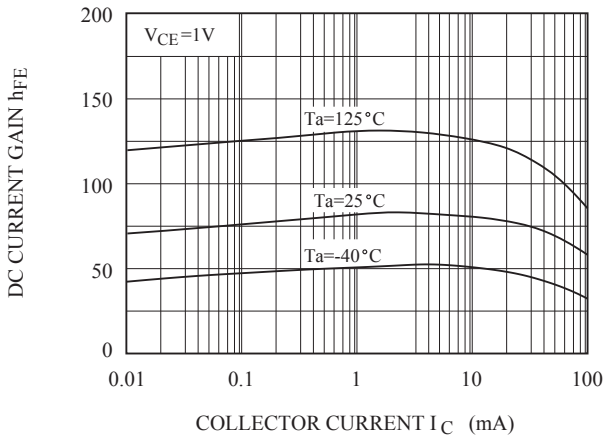


### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

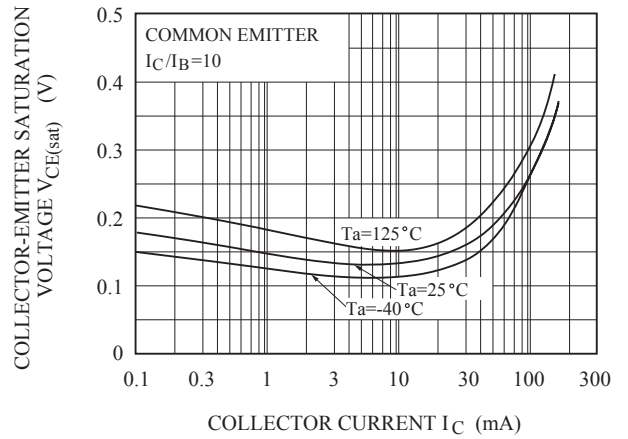
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=20\text{V}$ , $I_E=0$	-	-	0.4	$\mu\text{A}$	
		$V_{CB}=20\text{V}$ , $I_E=0$ , $T_a=125^\circ\text{C}$	-	-	30		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}$ , $I_E=0$	40	-	-	V	
Collector-Emitter Breakdown Voltage *	$V_{(BR)CEO}$	$I_E=10\text{mA}$ , $I_B=0$	15	-	-		
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$ , $I_C=0$	4.5	-	-		
DC Current * Gain	$h_{FE}$	KTH2369/A	$I_C=10\text{mA}$ , $V_{CE}=1.0\text{V}$	40	-	120	
		KTH2369	$I_C=10\text{mA}$ , $V_{CE}=1.0\text{V}$ , $T_a=-55^\circ\text{C}$	20	-	-	
		KTH2369A	$I_C=10\text{mA}$ , $V_{CE}=0.35\text{V}$ , $T_a=-55^\circ\text{C}$	20	-	-	
		KTH2369	$I_C=100\text{mA}$ , $V_{CE}=2.0\text{V}$	20	-	-	
		KTH2369A	$I_C=100\text{mA}$ , $V_{CE}=1.0\text{V}$	20	-	-	
Collector-Emitter Saturation Voltage *	$V_{CE(sat)}$	$I_C=10\text{mA}$ , $I_B=1.0\text{mA}$	-	-	0.25	V	
Base-Emitter Saturation Voltage *	$V_{BE(sat)}$	$I_C=10\text{mA}$ , $I_B=1.0\text{mA}$	0.70	-	0.85	V	
Transition Frequency	$f_T$	$I_C=10\text{mA}$ , $V_{CE}=10\text{V}$ , $f=100\text{MHz}$	500	-	-	MHz	
Collector Output Capacitance	$C_{ob}$	$V_{CB}=5.0\text{V}$ , $I_E=0$ , $f=1.0\text{MHz}$	-	-	4.0	pF	
Storage Time	$t_{stg}$	$I_C=100\text{mA}$ , $I_{B1}=-I_{B2}=10\text{mA}$ , $V_{CC}=10\text{V}$	-	-	13	nS	
Turn-on Time	$t_{on}$	$V_{CC}=3.0\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=3.0\text{mA}$ , $I_{B2}=-1.5\text{mA}$	-	-	12		
Turn-off Time	$t_{off}$	$I_C=10\text{mA}$ , $I_{B1}=3.0\text{mA}$ , $I_{B2}=-1.5\text{mA}$ , $V_{CC}=3.0\text{V}$	-	-	15		

Note : \*Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

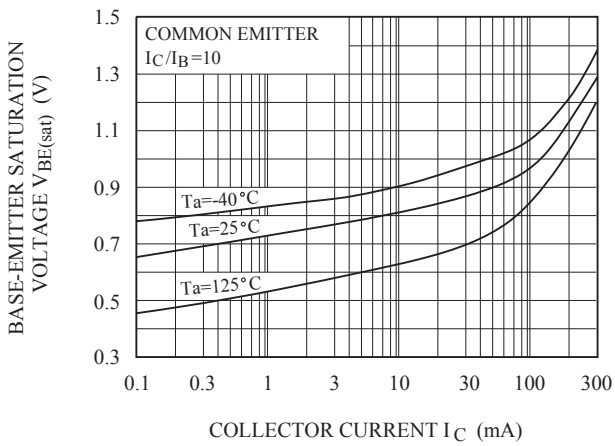
$h_{FE} - I_C$



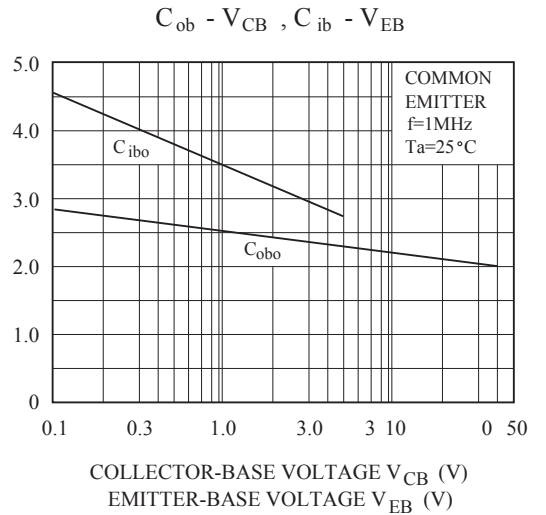
$V_{CE(sat)} - I_C$



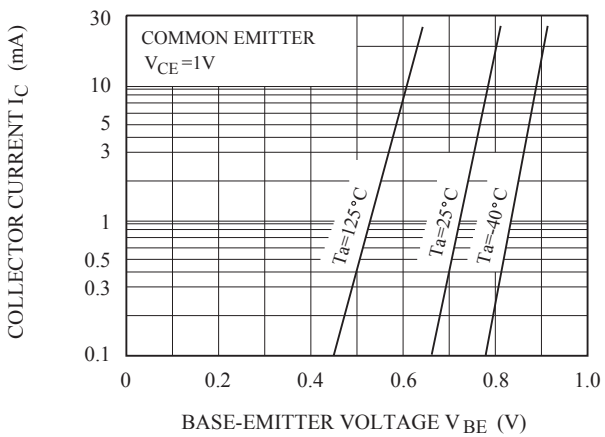
$V_{BE(sat)} - I_C$



Collector Output Capacitance  $C_{ob}$  (pF)  
Collector Input Capacitance  $C_{ib}$  (pF)



$I_C - V_{BE}$



$P_C - T_a$

