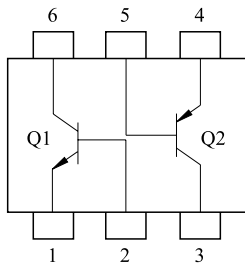


### GENERAL PURPOSE APPLICATION.

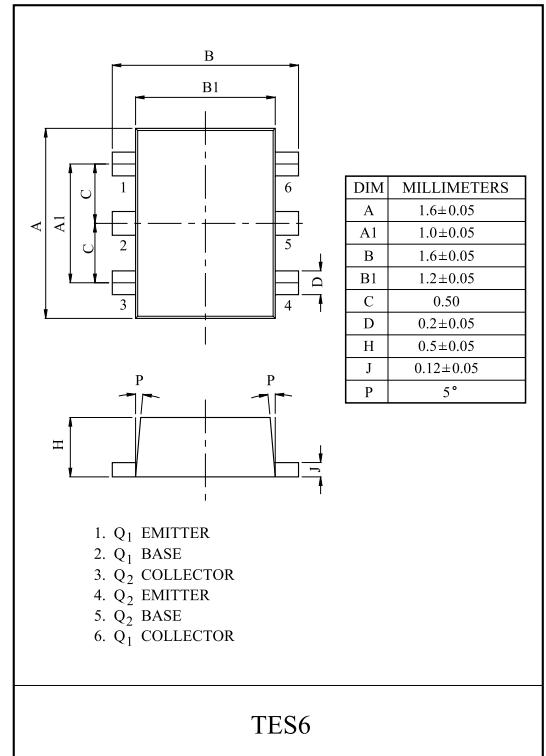
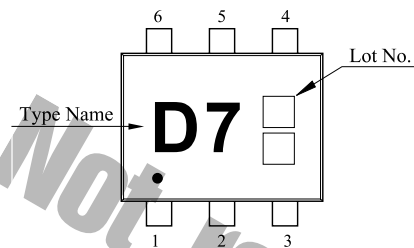
### FEATURES

- Including two devices in TES6.  
(Thin Extreme Super mini type with 6 pin.)
- Simplify circuit design.
- Reduce a quantity of parts and manufacturing process.

### EQUIVALENT CIRCUIT (TOP VIEW)



### Marking



### Q<sub>1</sub> MAXIMUM RATING (Ta=25 )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current	I <sub>C</sub>	500	mA

### Q<sub>2</sub> MAXIMUM RATING (Ta=25 )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	-15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-12	V
Emitter-Base Voltage	V <sub>EBO</sub>	-6	V
Collector Current	I <sub>C</sub>	-500	mA

### Q<sub>1</sub>, Q<sub>2</sub> MAXIMUM RATING (Ta=25 )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P <sub>C</sub> *	200	mW
Junction Temperature	T <sub>j</sub>	150	
Storage Temperature Range	T <sub>stg</sub>	-55 150	

\* Total Raing.

# KTX103E

## Q1 ELECTRICAL CHARACTERISTICS (Ta=25 )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=15V, I_E=0$	-	-	100	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_E=10 \mu A$	15	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA$	12	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10 \mu A$	6	-	-	V
DC Current Gain	$h_{FE}$	$V_{CE}=2V, I_C=10mA$	270	-	680	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200mA, I_B=10mA$	-	90	250	mV
Transition Frequency	$f_T$	$V_{CE}=2V, I_C=10mA, f_T=100MHz$	-	320	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	7.5	-	pF

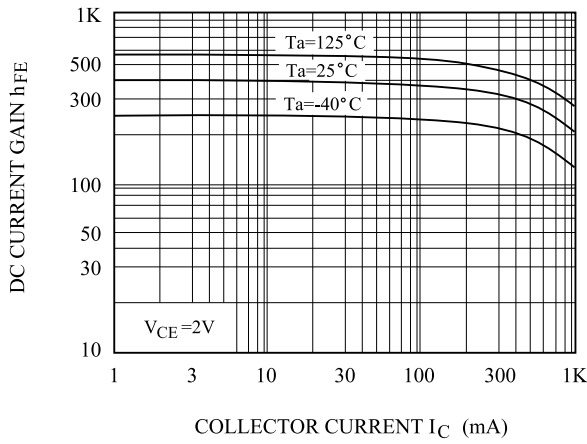
## Q2 ELECTRICAL CHARACTERISTICS (Ta=25 )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=-15V, I_E=0$	-	-	-100	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_E=-10 \mu A$	-15	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA$	-12	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10 \mu A$	-6	-	-	V
DC Current Gain	$h_{FE}$	$V_{CE}=-2V, I_C=-10mA$	270	-	680	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-200mA, I_B=-10mA$	-	-100	-250	mV
Transition Frequency	$f_T$	$V_{CE}=-2V, I_C=-10mA, f_T=100MHz$	-	260	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0, f=1MHz$	-	6.5	-	pF

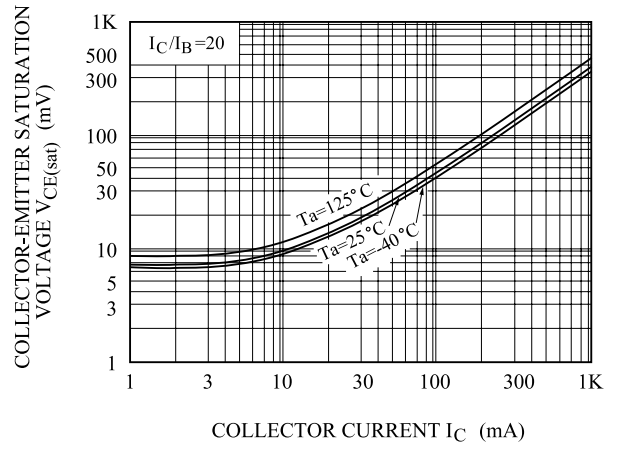
# KTX103E

## Q1 (NPN TRANSISTOR)

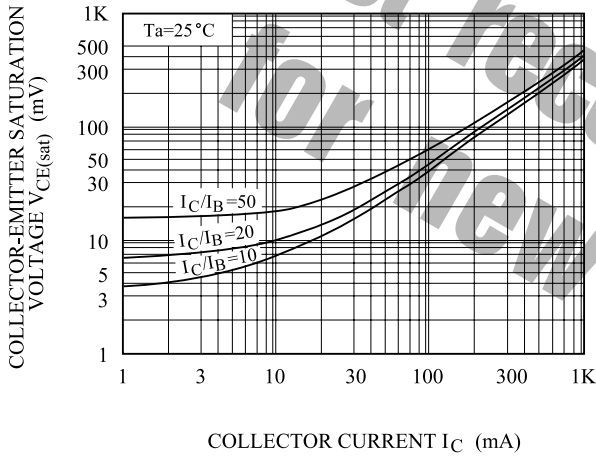
$h_{FE} - I_C$



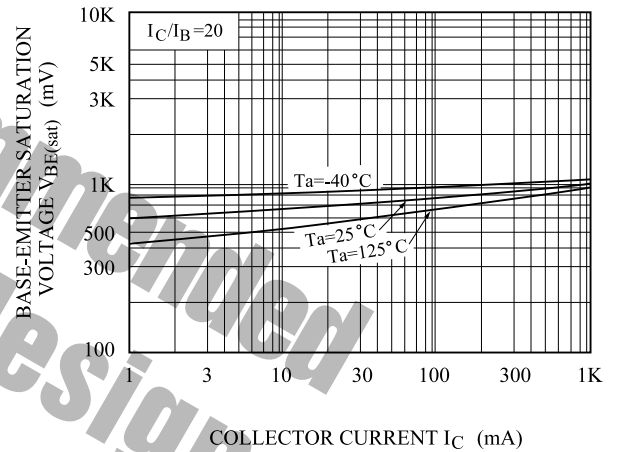
$V_{CE(sat)} - I_C$



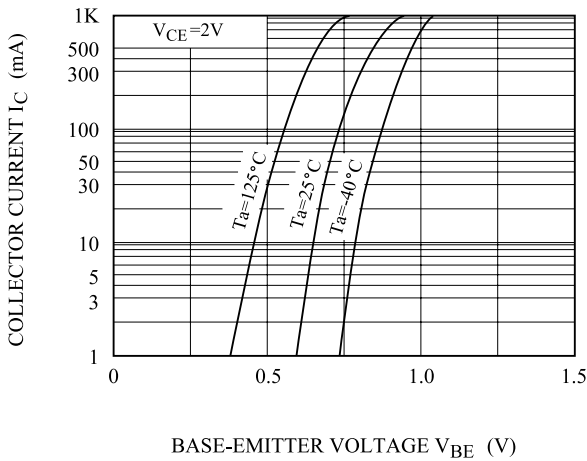
$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



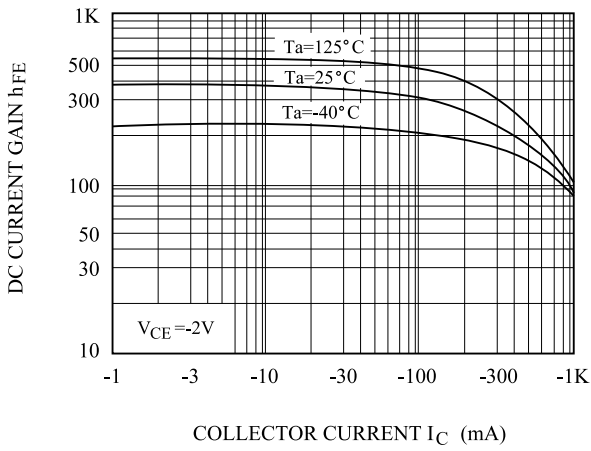
$I_C - V_{BE}$



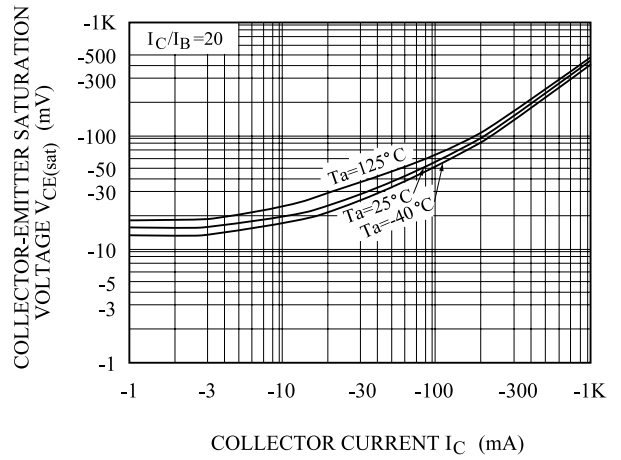
# KTX103E

## Q2 (PNP TRANSISTOR)

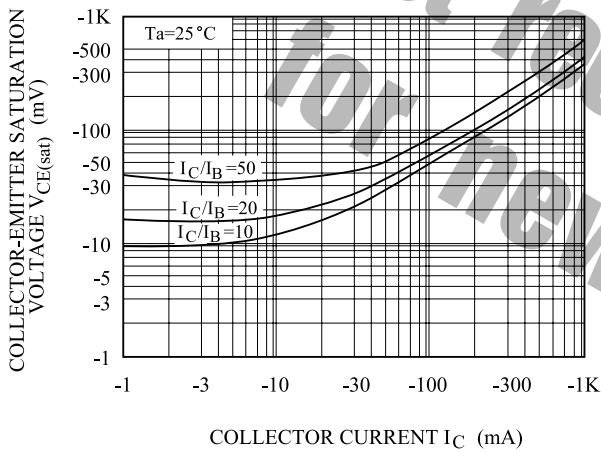
$h_{FE} - I_C$



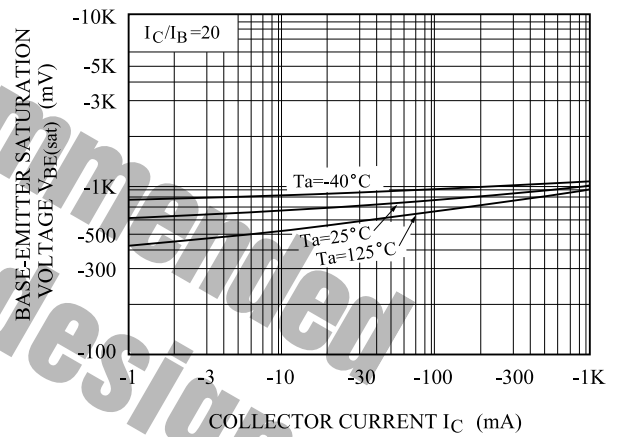
$V_{CE(sat)} - I_C$



$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$I_C - V_{BE}$

