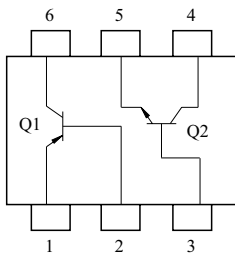


### GENERAL PURPOSE APPLICATION.

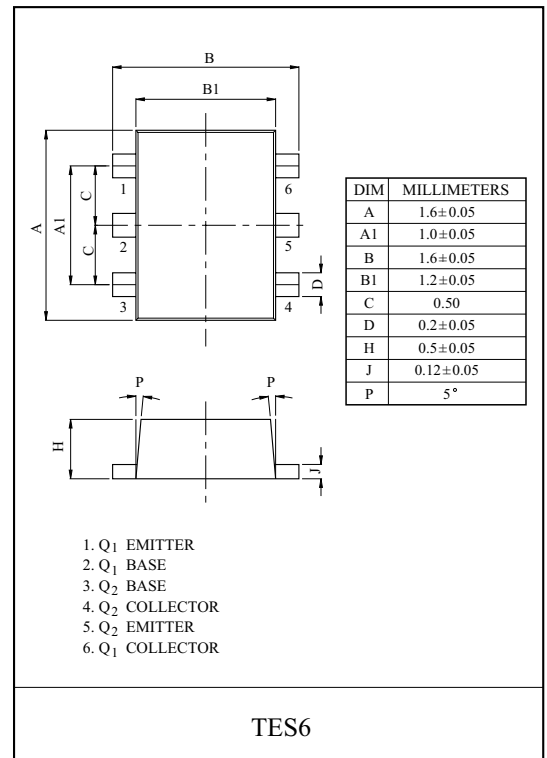
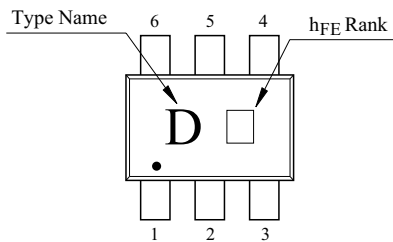
### FEATURES

- 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 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	-50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-50	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	I <sub>C</sub>	-150	mA
Base Current	I <sub>B</sub>	-30	mA

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	150	mA
Base Current	I <sub>B</sub>	30	mA

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

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

\* Total Raing.

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## Q<sub>1</sub> ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0	-	-	-0.1	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0	-	-	-0.1	μA
DC Current Gain	h <sub>FE</sub> (Note)	V <sub>CE</sub> =-6V, I <sub>C</sub> =-2 mA	120	-	400	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-100 mA, I <sub>B</sub> =-10 mA	-	-0.1	-0.3	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-1 mA	80	-	-	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=1MHz	-	4.0	7.0	pF
Noise Figure	NF	V <sub>CE</sub> =-6V, I <sub>C</sub> =-0.1 mA, f=1kHz, R <sub>g</sub> =10kΩ	-	1.0	10	dB

Note) h<sub>FE</sub> Classification : Y(4)120~240, GR(6)200~400

## Q<sub>2</sub> ELECTRICAL CHARACTERISTICS (Ta=25 °C)

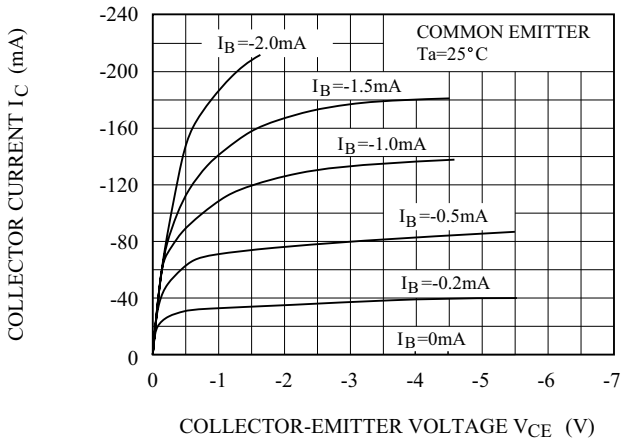
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0	-	-	0.1	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0	-	-	0.1	μA
DC Current Gain	h <sub>FE</sub> (Note)	V <sub>CE</sub> =6V, I <sub>C</sub> =2 mA	120	-	400	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100 mA, I <sub>B</sub> =10 mA	-	0.1	0.25	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =1 mA	80	-	-	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz	-	2.0	3.5	pF
Noise Figure	NF	V <sub>CE</sub> =6V, I <sub>C</sub> =0.1 mA, f=1kHz, R <sub>g</sub> =10kΩ	-	1.0	10	dB

Note) h<sub>FE</sub> Classification : Y(4)120~240, GR(6)200~400

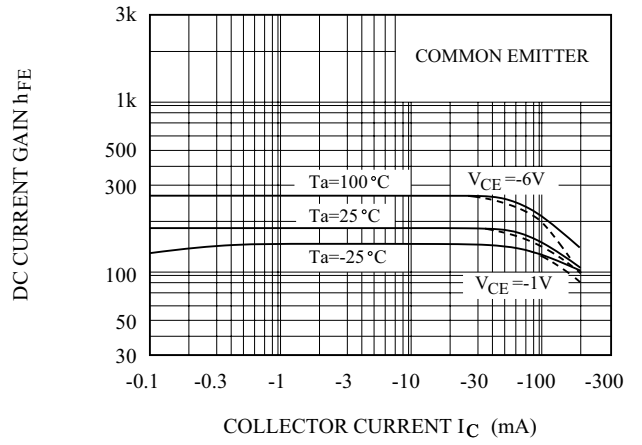
# KTX102E

Q<sub>1</sub> (PNP TRANSISTOR)

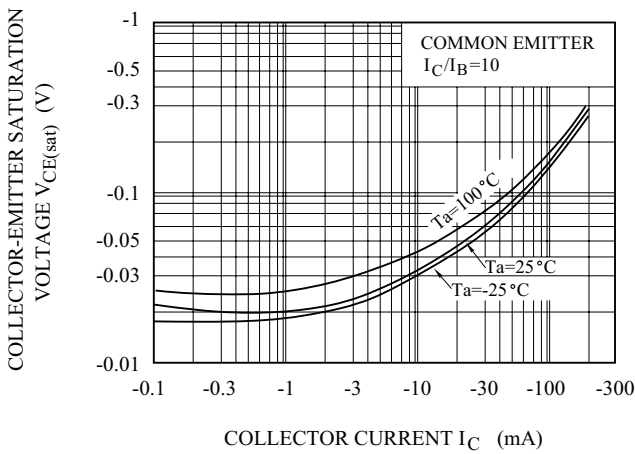
$I_C - V_{CE}$



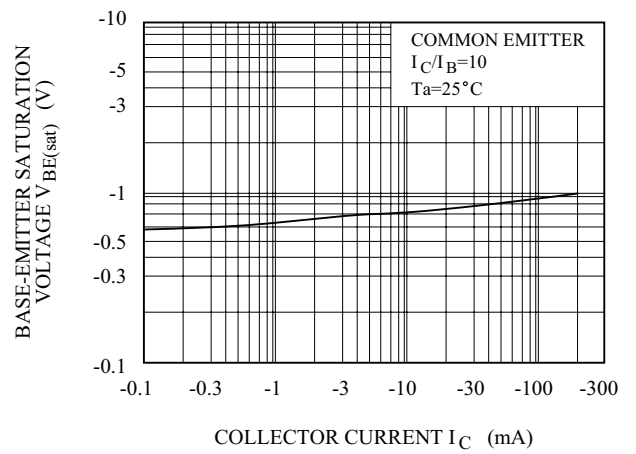
$h_{FE} - I_C$



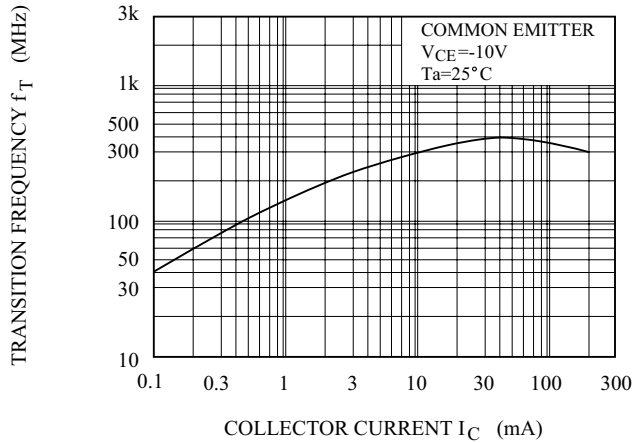
$V_{CE(sat)} - I_C$



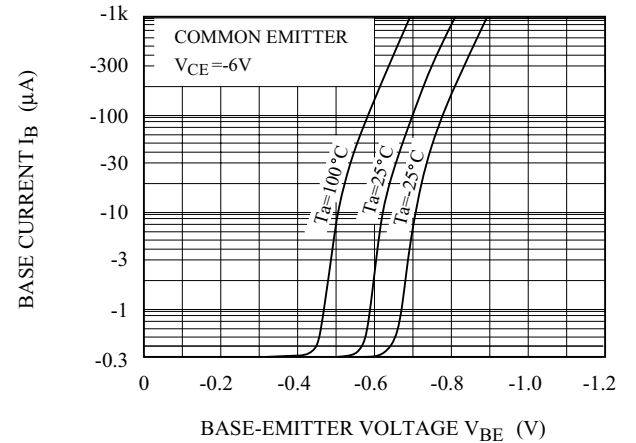
$V_{BE(sat)} - I_C$



$f_T - I_C$

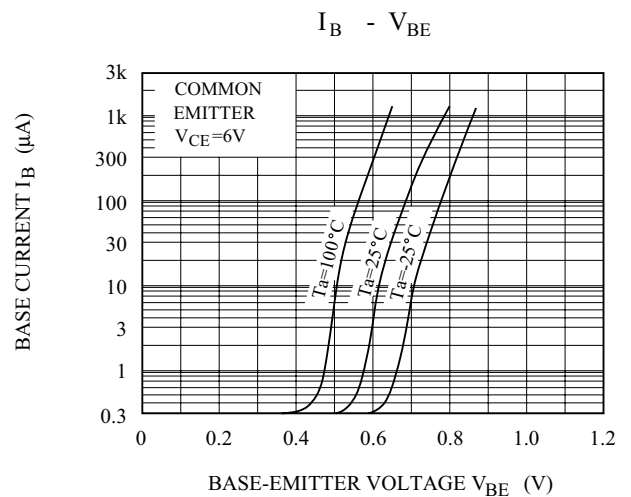
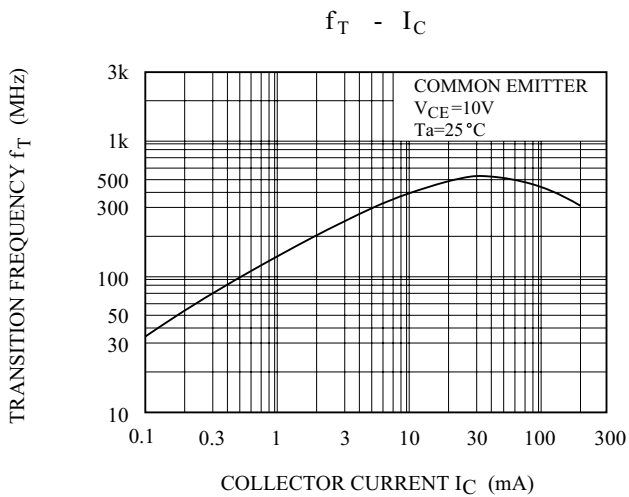
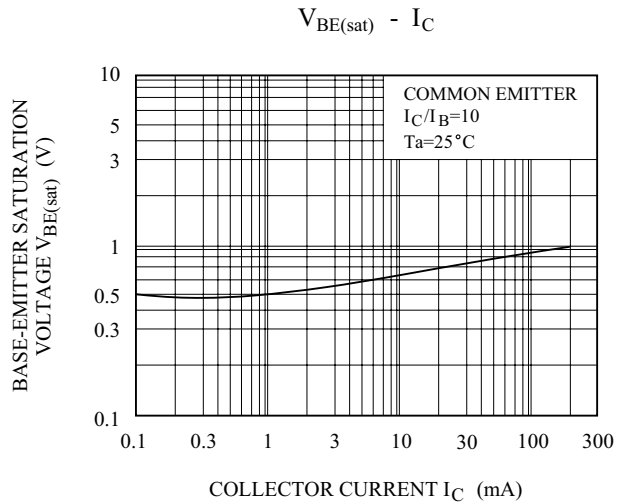
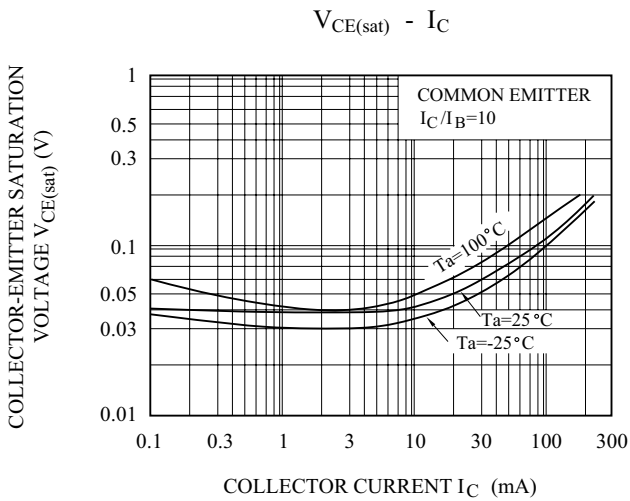
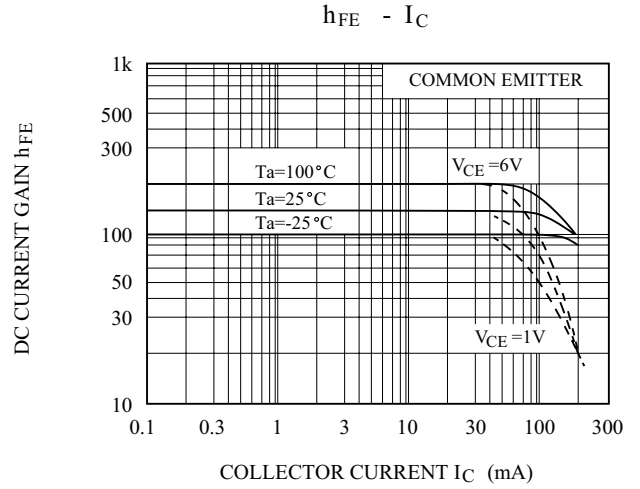
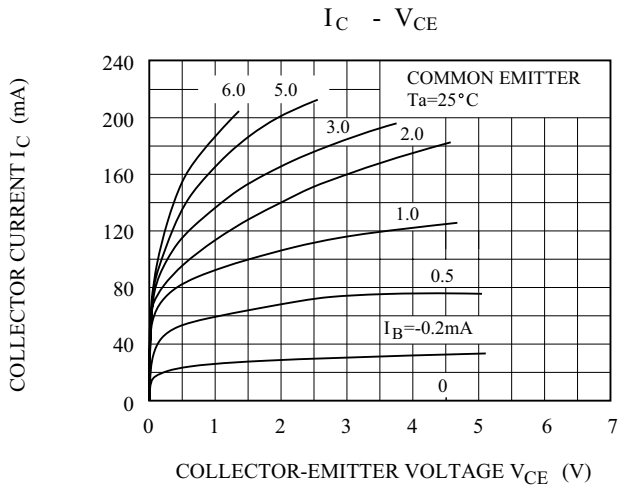


$I_B - V_{BE}$



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Q<sub>2</sub> (NPN TRANSISTOR)



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