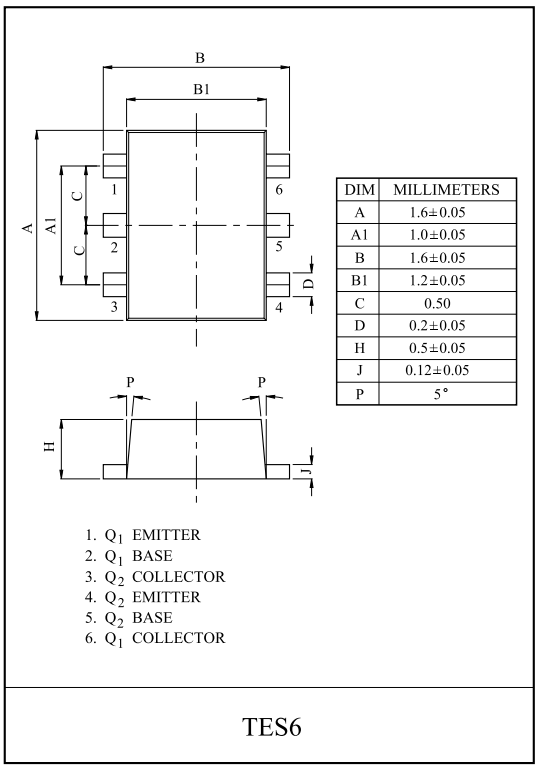
KTX103E

EPITAXIAL PLANAR NPN/PNP TRANSISTOR

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.

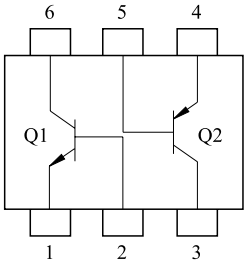


DIM	MILLIMETERS
A	1.6±0.05
A1	1.0±0.05
B	1.6±0.05
B1	1.2±0.05
C	0.50
D	0.2±0.05
H	0.5±0.05
J	0.12±0.05
P	5°

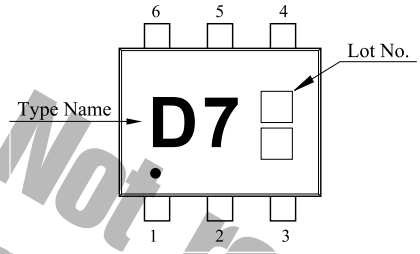
1. Q_1 EMITTER
2. Q_1 BASE
3. Q_2 COLLECTOR
4. Q_2 EMITTER
5. Q_2 BASE
6. Q_1 COLLECTOR

TES6

EQUIVALENT CIRCUIT (TOP VIEW)



Marking



Q_1 MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	15	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	500	mA

Q_2 MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-12	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-500	mA

Q_1, Q_2 MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P_C *	200	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 150	℃

* Total Raing.

Q1 ELECTRICAL CHARACTERISTICS (Ta=25°C)

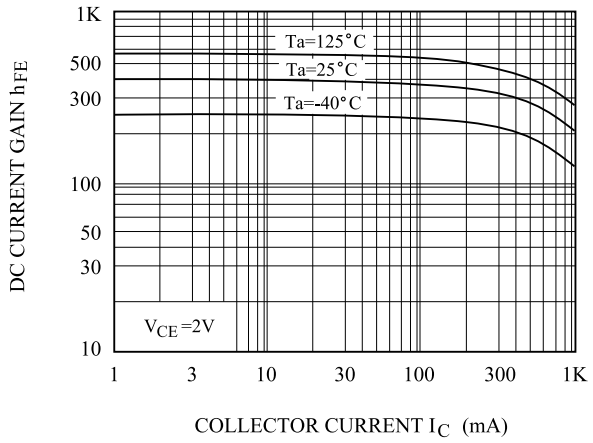
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=15V, I_E=0	-	-	100	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_E=10 μA	15	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA	12	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10 μA	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°C)

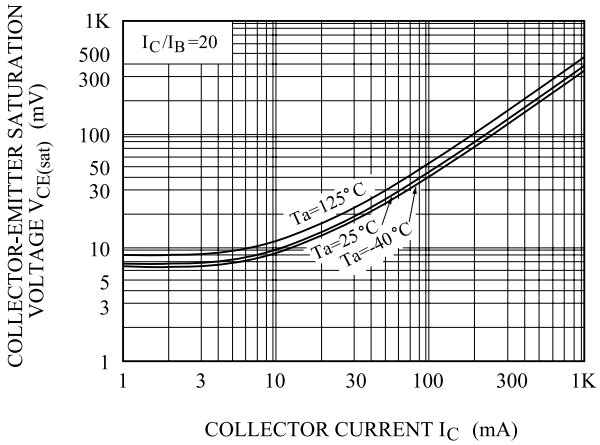
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-15V, I_E=0	-	-	-100	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_E=-10 μA	-15	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1mA	-12	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10 μA	-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

Q1 (NPN TRANSISTOR)

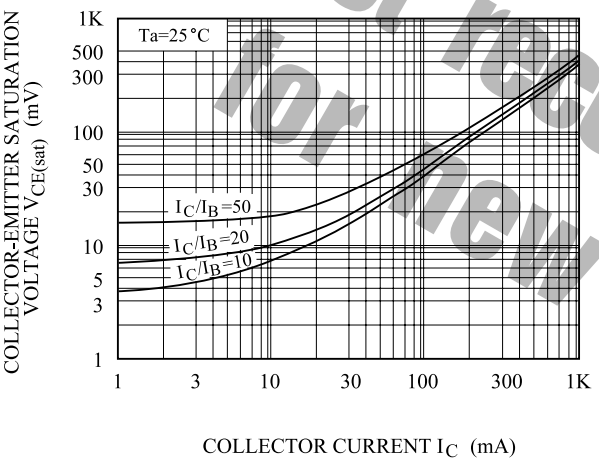
h_{FE} - I_C



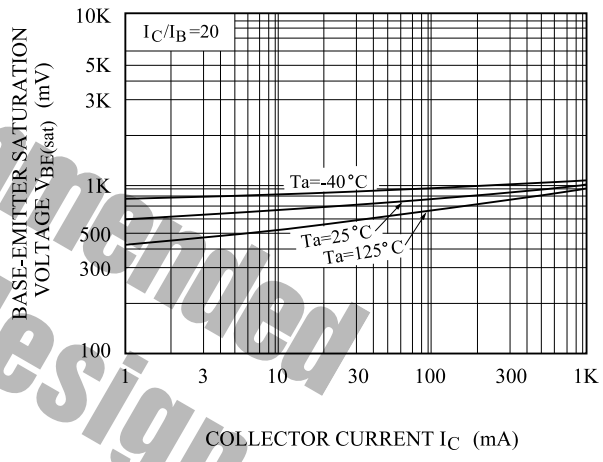
$V_{CE(sat)}$ - I_C



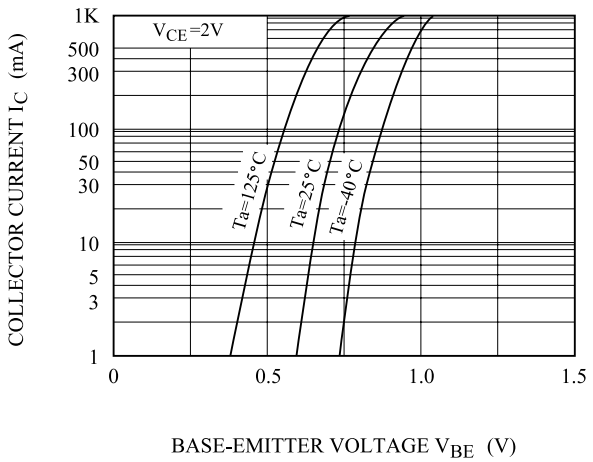
$V_{CE(sat)}$ - I_C



$V_{BE(sat)}$ - I_C

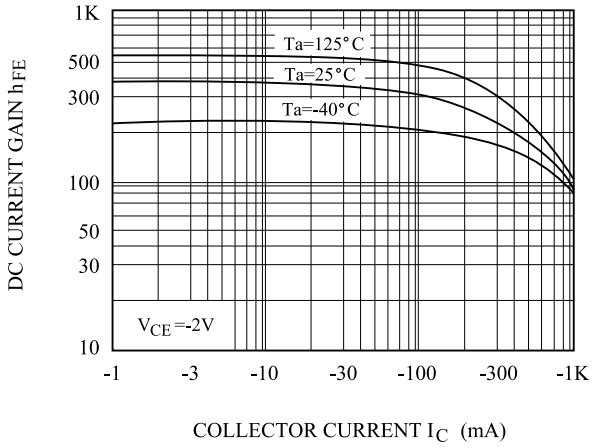


I_C - V_{BE}

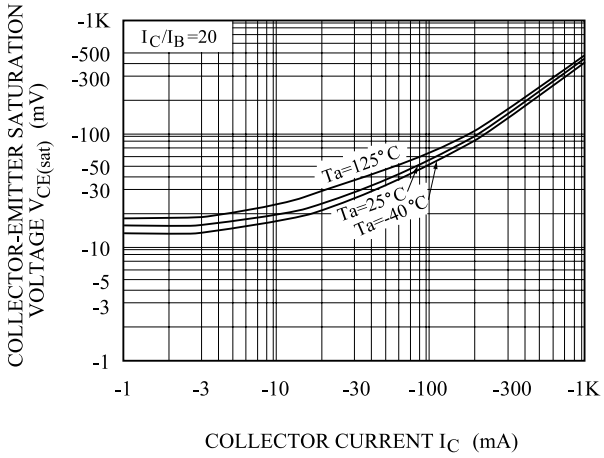


Q2 (PNP TRANSISTOR)

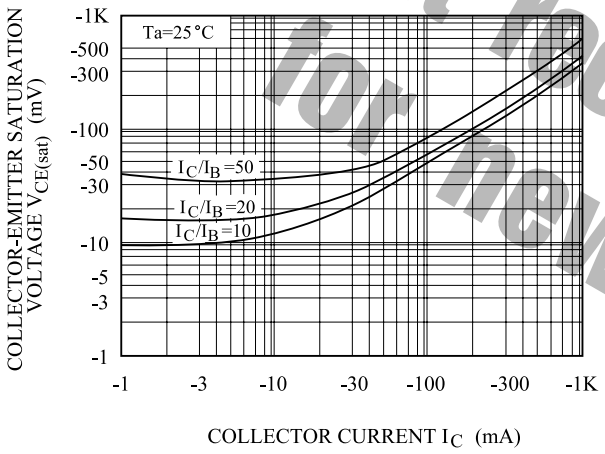
h_{FE} - I_C



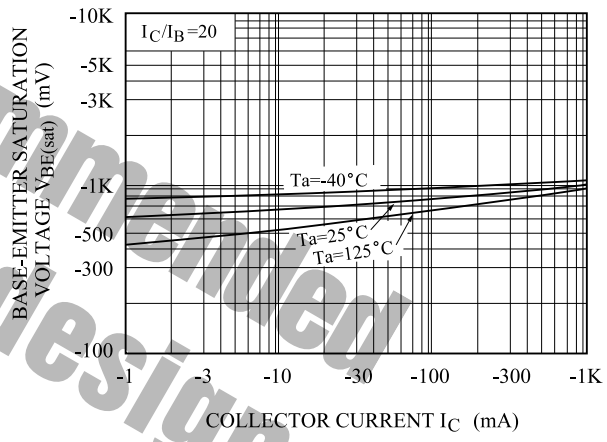
$V_{CE(sat)}$ - I_C



$V_{CE(sat)}$ - I_C



$V_{BE(sat)}$ - I_C



I_C - V_{BE}