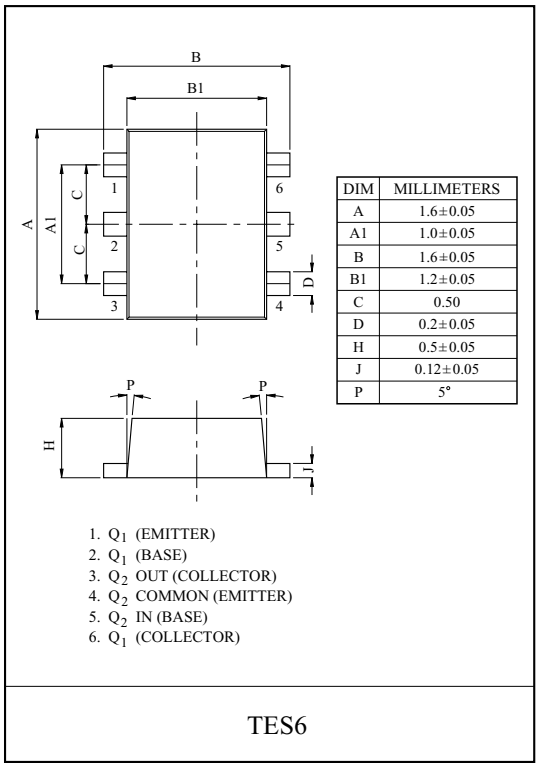
KTX214E

EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES

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

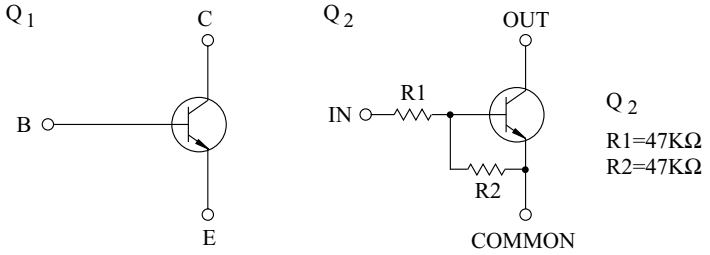


DIM	MILLIMETERS
A	1.6±0.05
A1	1.0±0.05
B	1.6±0.05
B1	1.2±0.05
C	0.50
D	0.2±0.05
H	0.5±0.05
J	0.12±0.05
P	5°

1. Q_1 (EMITTER)
2. Q_1 (BASE)
3. Q_2 OUT (COLLECTOR)
4. Q_2 COMMON (EMITTER)
5. Q_2 IN (BASE)
6. Q_1 (COLLECTOR)

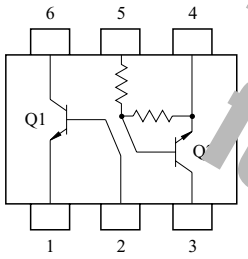
TES6

EQUIVALENT CIRCUIT

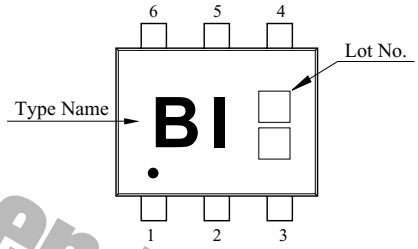


Q_2
R1=47KΩ
R2=47KΩ

EQUIVALENT CIRCUIT (TOP VIEW)



Marking



Q1 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	0	mA
	I_{CP} *		A

* Single pulse Pw=1mS.

Q2 MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Output Voltage	V_O	50	V
Input Voltage	V_I	40, -10	V
Output Current	I_O	-100	mA

Q1, Q2 MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Dissipation	P_D *	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

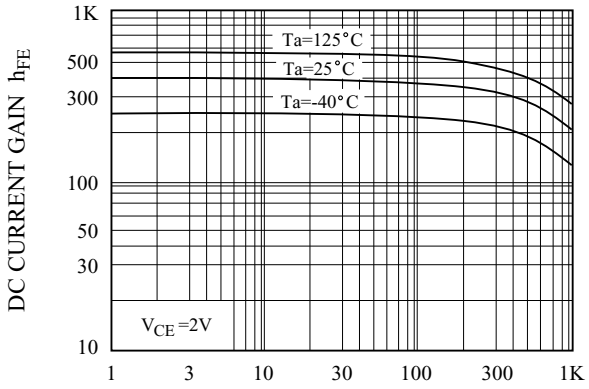
Q2 ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Output Cut-off Current	$I_{O(OFF)}$	V_O=50V, V_I=0	-	-	500	nA
DC Current Gain	G_I	V_O=5V, I_O=1mA	20	-	-	
Output Voltage	$V_{O(ON)}$	I_O=10mA, I_I=0.5mA	-	0.1	0.3	V
Input Voltage (ON)	$V_{I(ON)}$	V_O=0.2V, I_O=5mA	-	2.8	5.0	V
Input Voltage (OFF)	$V_{I(OFF)}$	V_O=5V, I_O=0.1mA	1.0	1.2	-	V
Transition Frequency	f_T *	V_O=10V, I_O=5mA	-	200	-	MHz
Input Current	I_I	V_I=5V	-	-	0.18	mA

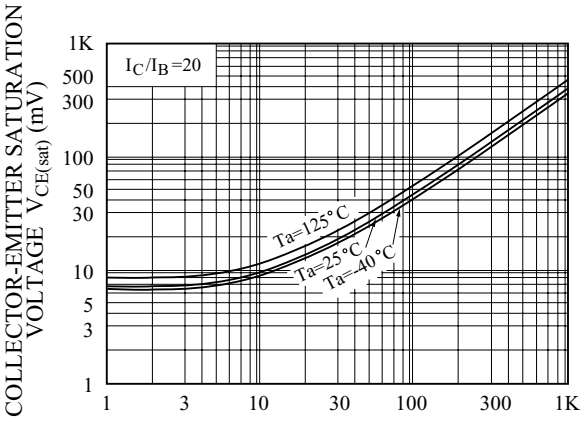
Note : * Characteristic of Transistor Only.

Q_1 (NPN TRANSISTOR)

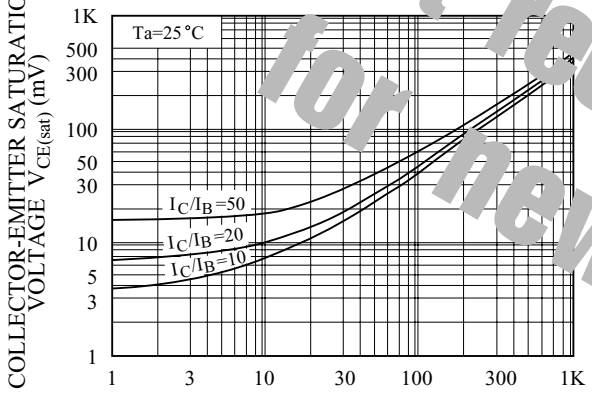
h_{FE} - I_C



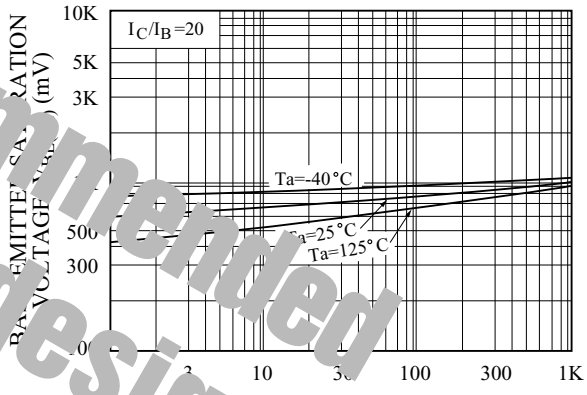
$V_{CE(sat)}$ - I_C



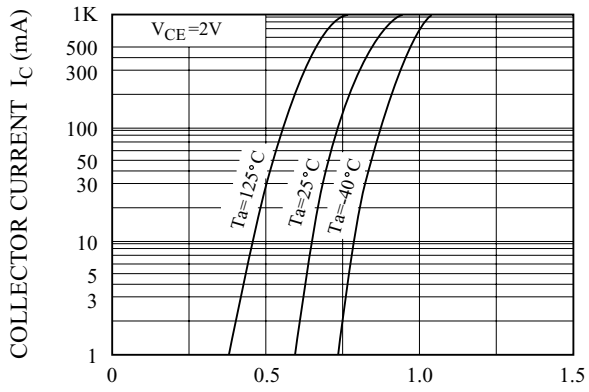
$V_{CE(sat)}$ - I_C



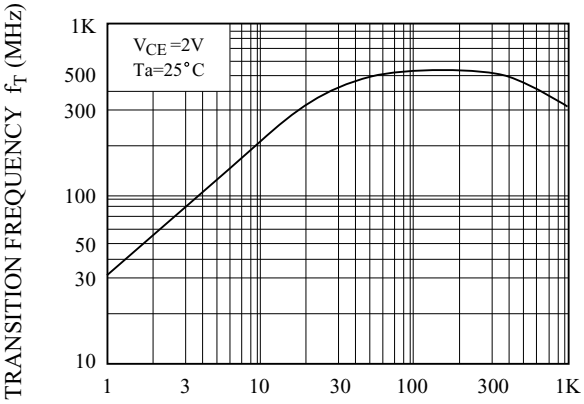
$V_{BE(sat)}$ - I_C



I_C - V_{BE}

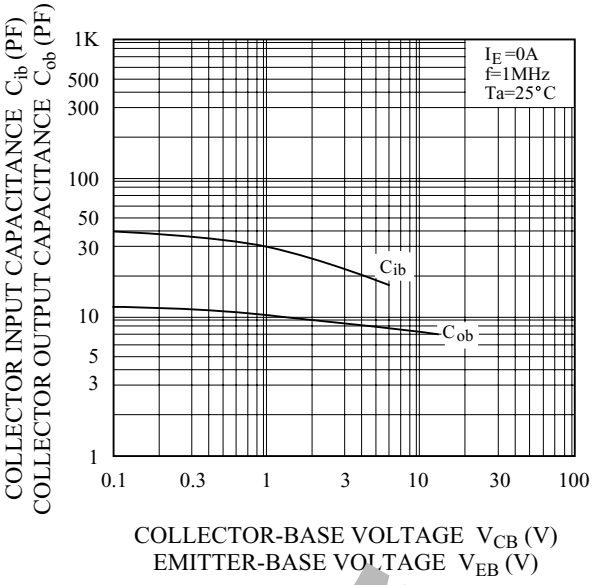


f_T - I_C

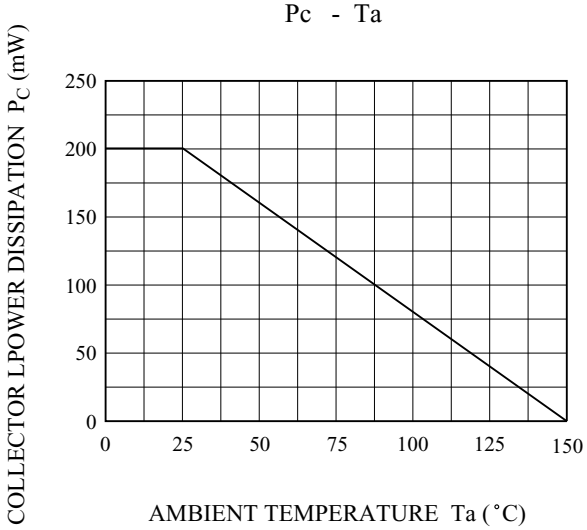


Q_1 (NPN TRANSISTOR)

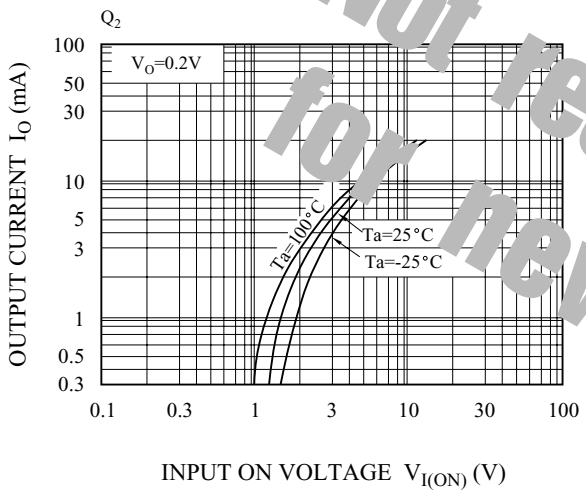
C_{ob} - V_{CB} , C_{ib} - V_{EB}



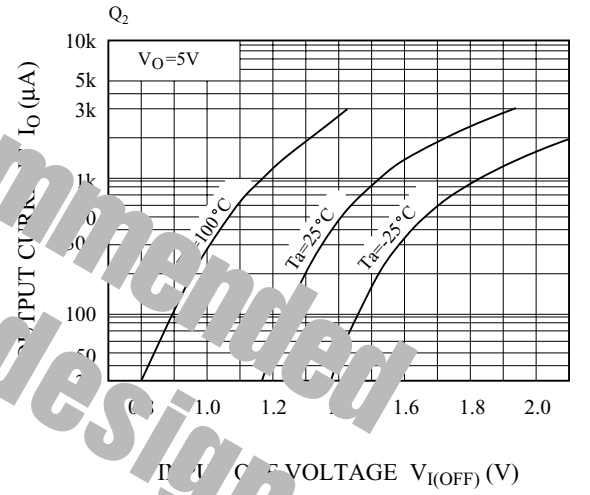
Pc - Ta



I_O - $V_{I(ON)}$



I_O - $V_{I(OFF)}$



G_I - I_O