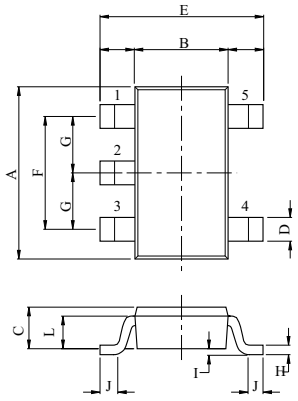
KTX311T

EPITAXIAL PLANAR PNP TRANSISTOR
SILICON EPITAXIAL PLANAR TYPE DIODE

GENERAL PURPOSE APPLICATION.
ULTRA HIGH SPEED SWITCHING APPLICATION.

FEATURES

- Including two(TR, Diode) devices in TSV.
  (Thin Super Mini type with 5 pin)
- Simplify circuit design.
- Reduce a quantity of parts and manufacturing process.

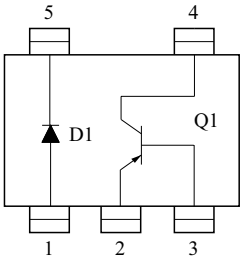


DIM	MILLIMETERS
A	2.9±0.2
B	1.6+0.2/-0.1
C	0.70±0.05
D	0.4±0.1
E	2.8+0.2/-0.3
F	1.9±0.2
G	0.95
H	0.16±0.05
I	0.00-0.10
J	0.25+0.25/-0.15
K	0.60
L	0.55

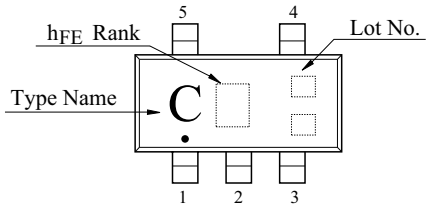
1. D_1 ANODE
2. Q_1 EMITTER
3. Q_1 BASE
4. Q_1 COLLECTOR
5. D_1 CATHODE

TSV

EQUIVALENT CIRCUIT (TOP VIEW)



Marking



MARK SPEC

Type	KTX311T	KTX311T
	Q_1 h_{FE} Rank : Y	Q_1 h_{FE} Rank : GR
Mark	CB	CC

MAXIMUM RATINGS (Ta=25℃)

TRANSISTOR Q_1

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-20	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-1	A
Emitter Current	I_E	1	A
Collector Power Dissipation	P_C *	0.9	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

* Package mounted on a ceramic board (600㎟×0.8㎜)

DIODE D_1

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	25	V
Reverse Voltage	V_R	20	V
Average Forward Current	I_O	1.0	A
Non-Repetitive Peak Surge current	I_{FSM}	3	A
Junction Temperature	T_j	125	℃
Storage Temperature	T_{stg}	-55~125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

TRANSISTOR Q_1

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut-off Current	I_{CBO}	V_{CB}=-20V, I_E=0	-	-	-0.1	㎂
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-0.1	㎂
DC Current Gain	h_{FE}(1) (Note)	V_{CE}=-2V, I_C=-50㎃	120	-	400	
	h_{FE}(2)	V_{CE}=-2V, I_C=-1A (Pulse)	30	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-500㎃, I_B=-50㎃	-	-0.15	-0.3	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=-500㎃, I_B=-50㎃	-	-0.85	-1.2	V
Transition Frequency	f_T	V_{CE}=-10V, I_C=-50㎃	-	180	-	㎒
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1㎒	-	25	-	pF

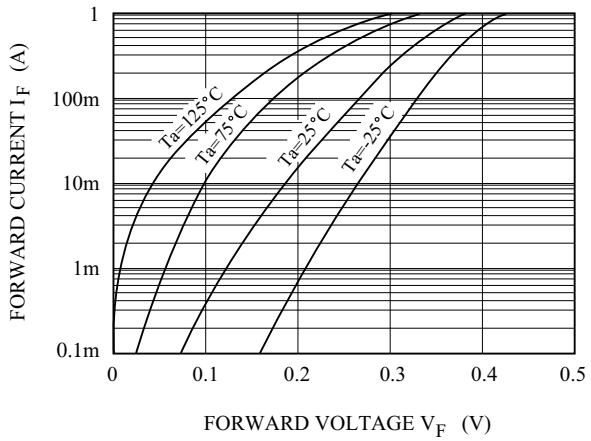
Note) h_{FE} Classification Y:120~240, GR:200~400.

DIODE D_1

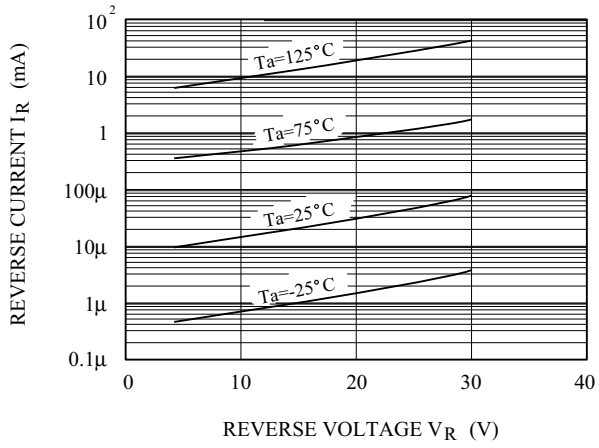
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Forward Voltage	V_F	I_F=1.0A	-	0.4	0.45	V
Reverse Current	I_R	V_R=20V	-	-	200	㎂

D_1 (DIODE)

I_F - V_F

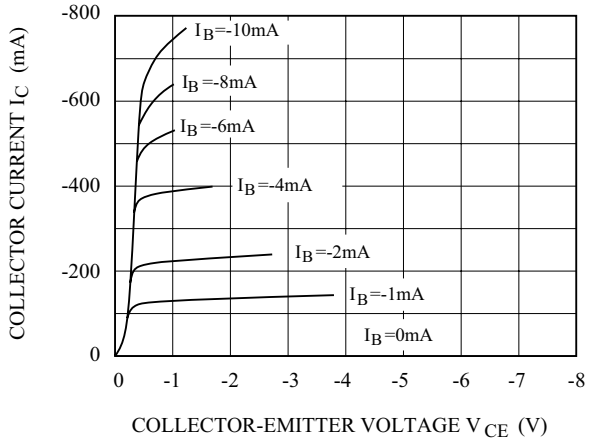


I_R - V_R

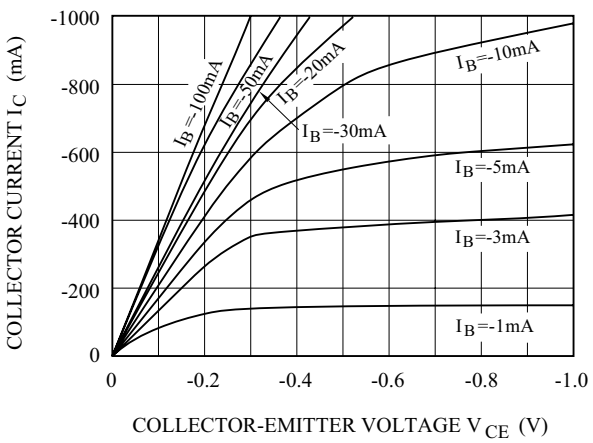


Q_1 (PNP TRANSISTOR)

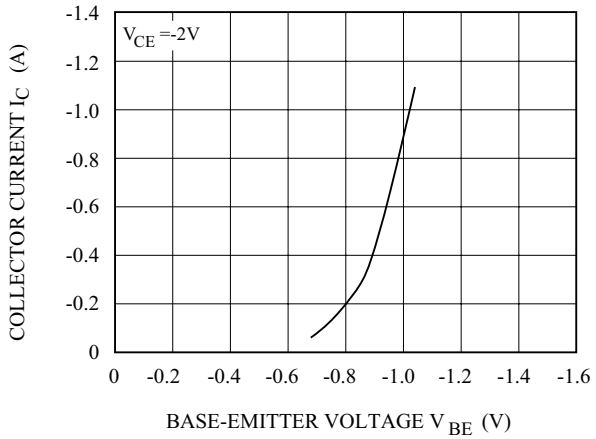
I_C - V_{CE}



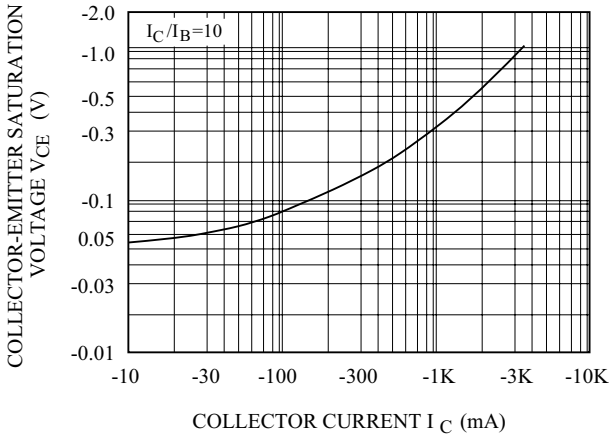
I_C - V_{CE}



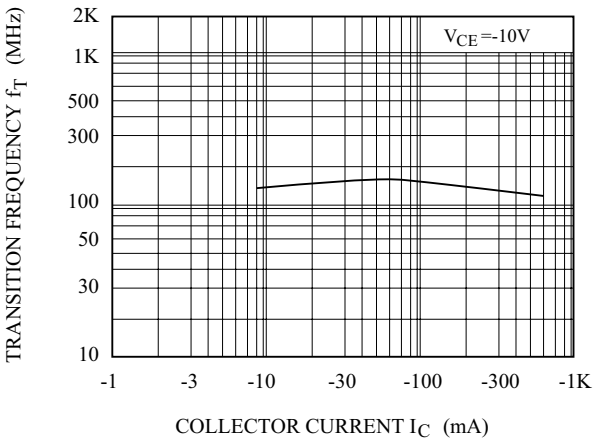
I_C - V_{BE}



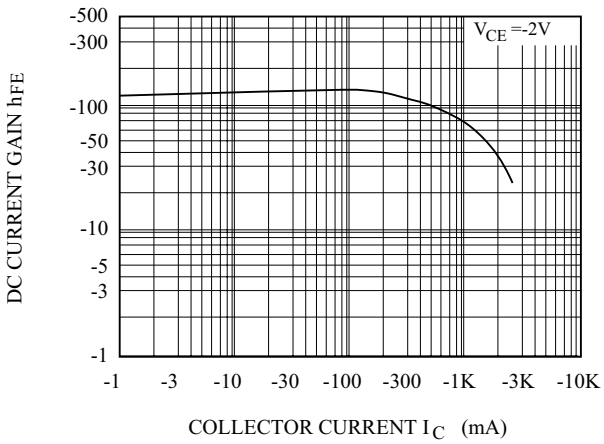
$V_{CE(sat)}$ - I_C



f_T - I_C


TRANSITION FREQUENCY f_T (MHz)
2K
1K
500
300
100
50
30
10
V_{CE}=-10V
-1
-3
-10
-30
-100
-300
-1K
COLLECTOR CURRENT I_C (mA)

h_{FE} - I_C


DC CURRENT GAIN h_{FE}
-500
-300
-100
-50
-30
-10
-5
-3
-1
V_{CE}=-2V
-1
-3
-10
-30
-100
-300
-1K
-3K
-10K
COLLECTOR CURRENT I_C (mA)