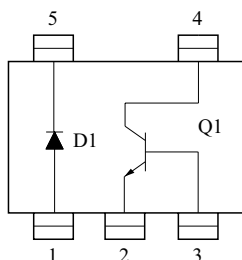


GENERAL PURPOSE APPLICATION.  
ULTRA HIGH SPEED SWITCHING APPLICATION.

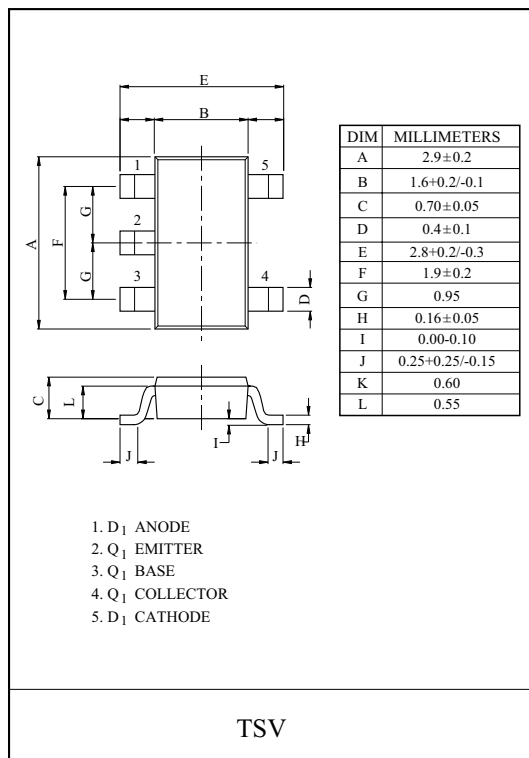
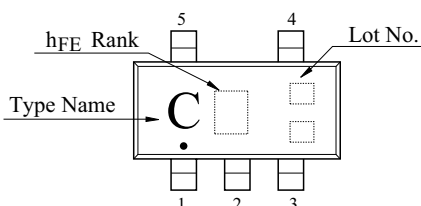
## FEATURES

- 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.

## EQUIVALENT CIRCUIT (TOP VIEW)



## Marking



## MARK SPEC

Type	KTX411T	KTX411T
	Q <sub>1</sub> h <sub>FE</sub> Rank : Y	Q <sub>1</sub> h <sub>FE</sub> Rank : GR
Mark	CE	CF

## MAXIMUM RATINGS (Ta=25 °C)

### TRANSISTOR Q<sub>1</sub>

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	20	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	1	A
Emitter Current	I <sub>E</sub>	-1	A
Collector Power Dissipation	P <sub>C</sub> *	0.9	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

\* Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm)

### DIODE D<sub>1</sub>

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	25	V
Reverse Voltage	V <sub>R</sub>	20	V
Average Forward Current	I <sub>O</sub>	1.0	A
Non-Repetitive Peak Surge current	I <sub>FSM</sub>	3	A
Junction Temperature	T <sub>j</sub>	125	°C
Storage Temperature	T <sub>stg</sub>	-55~125	°C

# KTX411T

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =20V, 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> (1) (Note)	V <sub>CE</sub> =2V, I <sub>C</sub> =50mA	120	-	400	
	h <sub>FE</sub> (2)	V <sub>CE</sub> =2V, I <sub>C</sub> =1A (Pulse)	30	-	-	
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =500 mA, I <sub>B</sub> =50 mA	-	0.1	0.3	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =500 mA, I <sub>B</sub> =50 mA	-	0.85	1.2	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50 mA	-	180	-	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1 MHz	-	15	-	pF

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

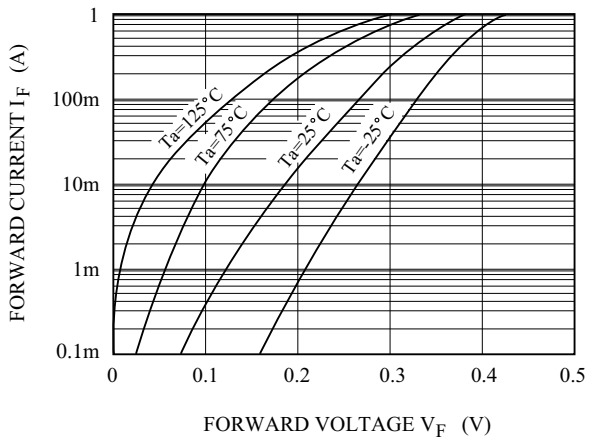
## DIODE D<sub>1</sub>

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =1.0A	-	0.4	0.45	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =20V	-	-	200	μA

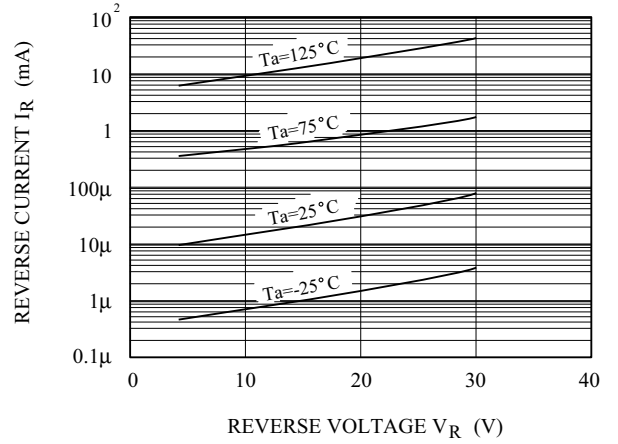
# KTX411T

D<sub>1</sub> (DIODE)

$I_F - V_F$

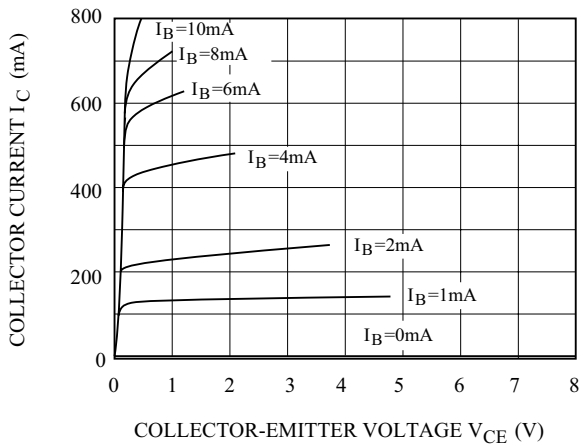


$I_R - V_R$

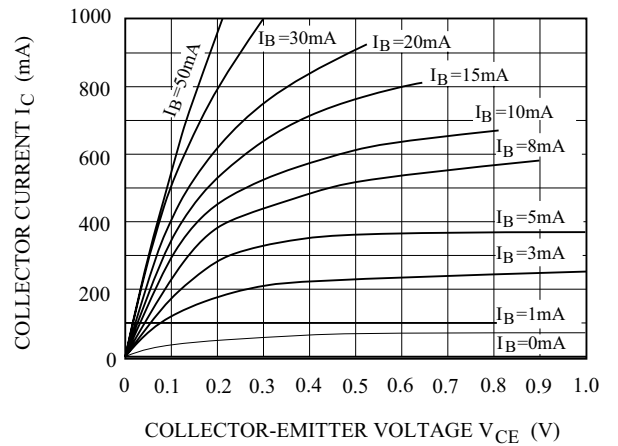


Q<sub>1</sub> (NPN TRANSISTOR)

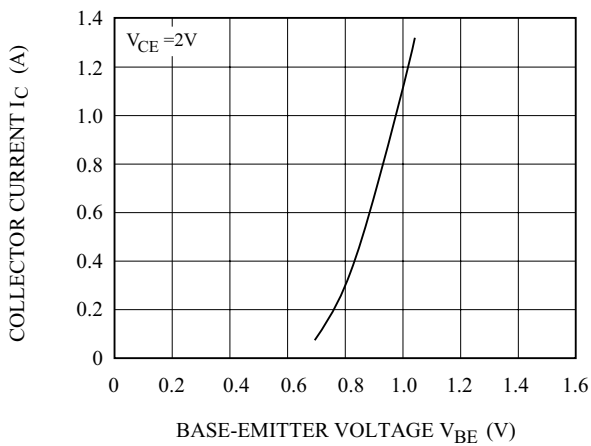
$I_C - V_{CE}$



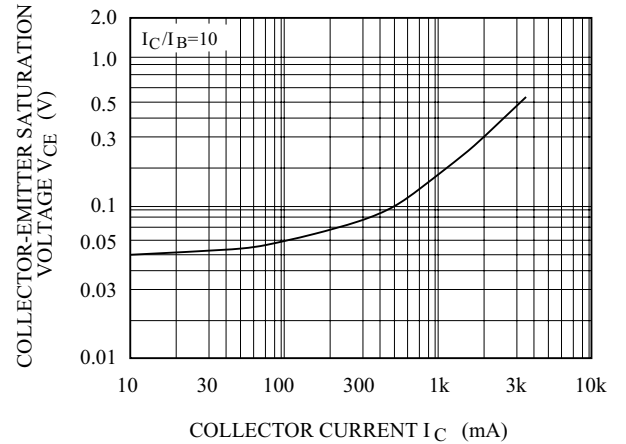
$I_C - V_{CE}$



$I_C - V_{BE}$



$V_{CE(sat)} - I_C$



# KTX411T

