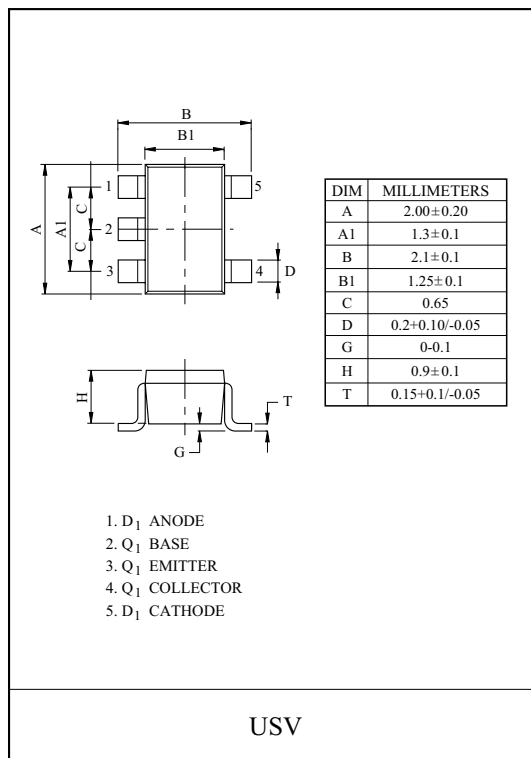
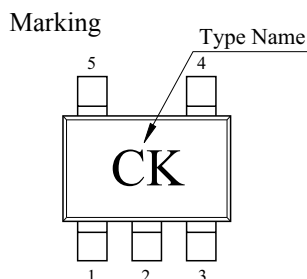
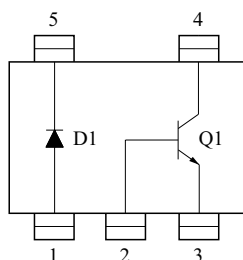


SWITCHING APPLICATION.  
LOW VOLTAGE HIGH SPEED SWITCHING.

#### FEATURES

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

#### EQUIVALENT CIRCUIT (TOP VIEW)



#### MAXIMUM RATINGS (Ta=25 °C)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	12	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	mA
Collector Current	I <sub>C</sub>	500	mA
	I <sub>CP</sub> *	1	A
Collector Power Dissipation	P <sub>C</sub>	100	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Maximum (Peak) Reverse Voltage	V <sub>RM</sub>	30	V
Reverse Voltage	V <sub>R</sub>	30	V
Maximum (Peak) Forward Current	I <sub>FM</sub>	300	mA
Average Forward Current	I <sub>O</sub>	200	mA
Surge Current (10mS)	I <sub>FSM</sub>	1	A
Junction Temperature	T <sub>j</sub>	125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ 125	°C

# KTX403U

## 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> =15V, I <sub>E</sub> =0	-	-	100	nA
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>E</sub> =10μA	15	-	-	V
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA	12	-	-	V
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA	6	-	-	V
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =10mA	270	-	680	-
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =200mA, I <sub>B</sub> =10mA	-	90	250	mV
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =10mA, f=100MHz	-	320	-	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz	-	7.5	-	pF

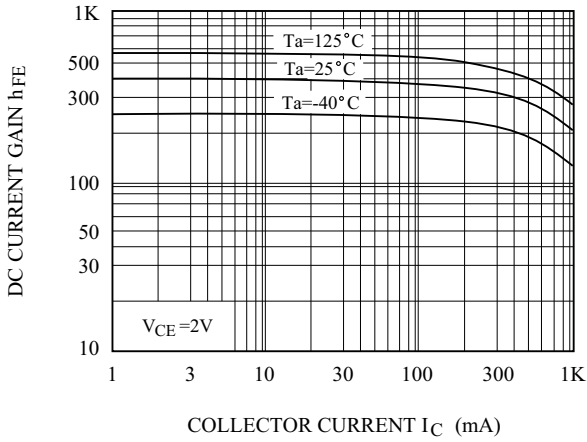
## DIODE (SBD) D<sub>1</sub>

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V <sub>F(1)</sub>	I <sub>F</sub> =1mA	-	0.22	-	V
	V <sub>F(2)</sub>	I <sub>F</sub> =10mA	-	0.29	-	
	V <sub>F(3)</sub>	I <sub>F</sub> =100mA	-	0.38	-	
	V <sub>F(4)</sub>	I <sub>F</sub> =200mA	-	0.43	0.55	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =30V	-	-	50	μA
Total Capacitance	C <sub>T</sub>	V <sub>R</sub> =0, f=1MHz	-	50	-	pF

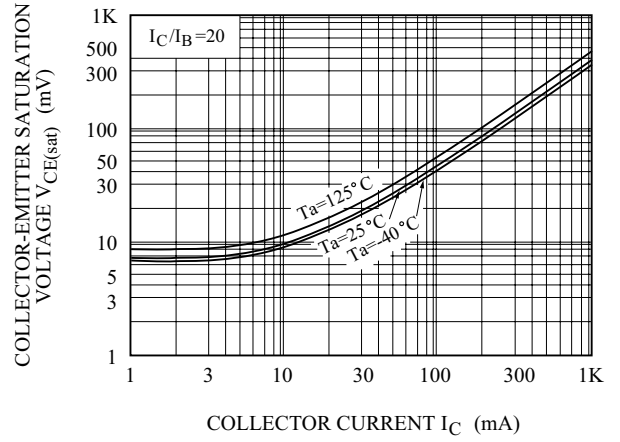
# KTX403U

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

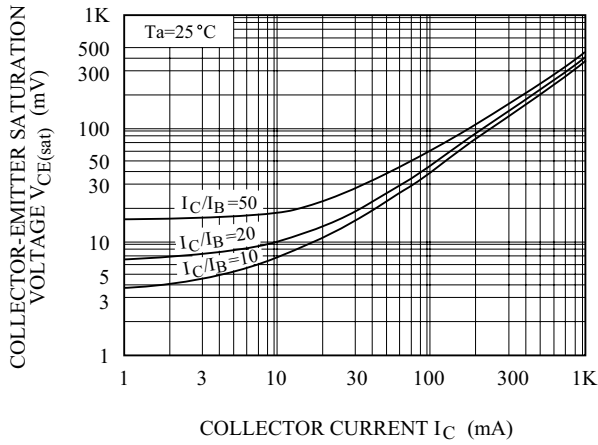
$h_{FE} - I_C$



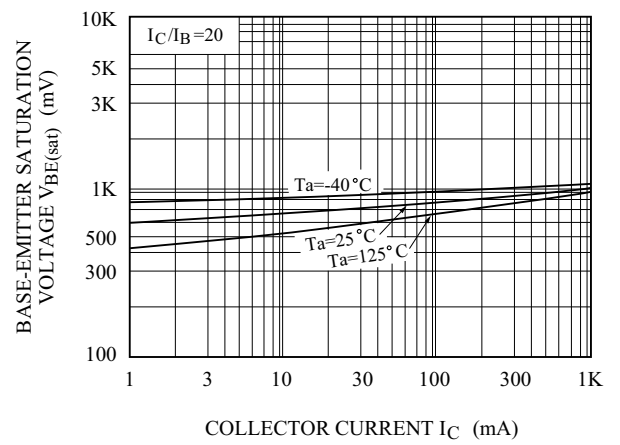
$V_{CE(sat)} - I_C$



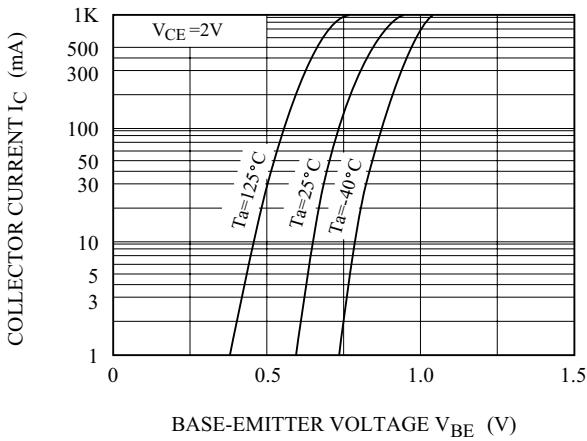
$V_{CE(sat)} - I_C$



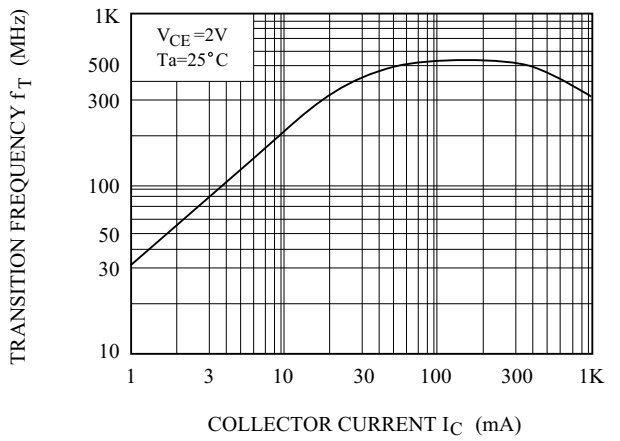
$V_{BE(sat)} - I_C$



$I_C - V_{BE}$

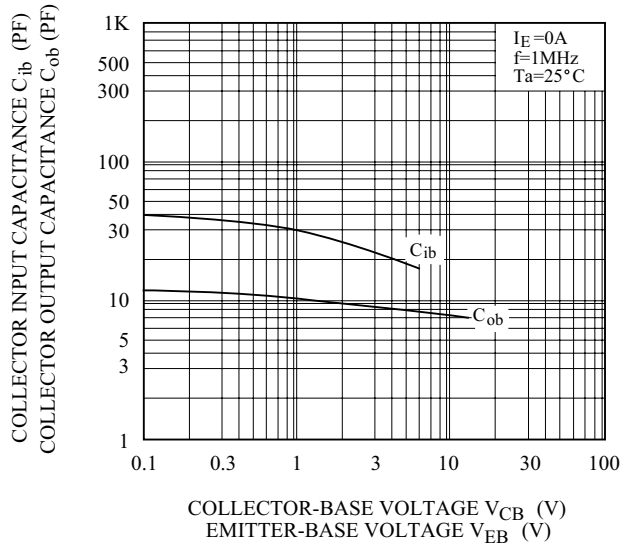


$f_T - I_C$



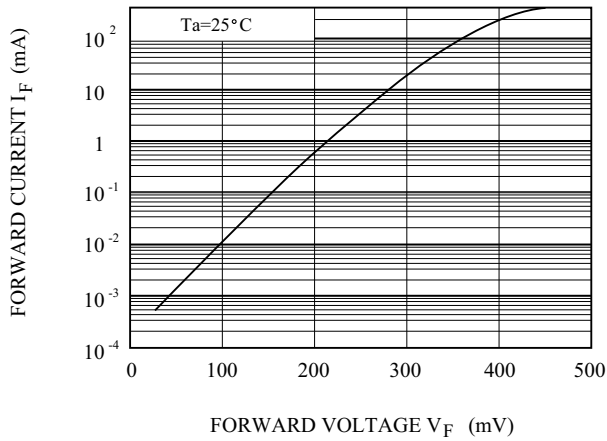
# KTX403U

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

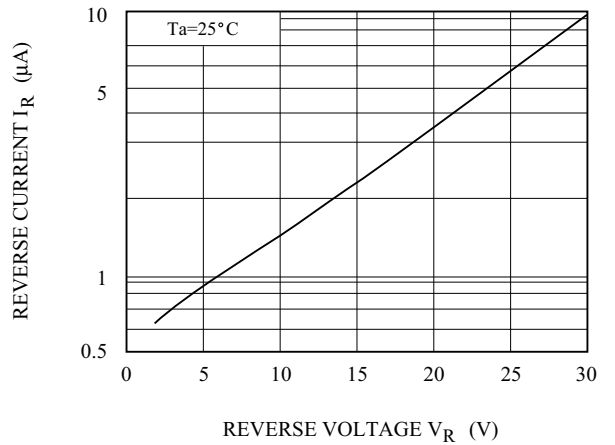


$D_1$  (SBD)

$I_F - V_F$



$I_R - V_R$



$C_T - V_R$

