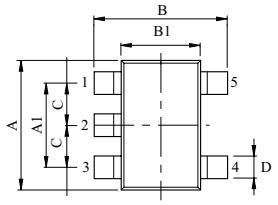
KTX403U

EPITAXIAL PLANAR NPN TRANSISTOR
SCHOTTKY BARRIER TYPE DIODE

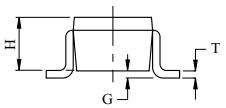
SWITCHING APPLICATION.
LOW VOLTAGE HIGH SPEED SWITCHING.

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.



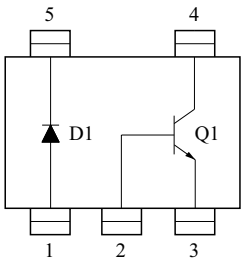
DIM	MILLIMETERS
A	2.00±0.20
A1	1.3±0.1
B	2.1±0.1
B1	1.25±0.1
C	0.65
D	0.2+0.10/-0.05
G	0-0.1
H	0.9±0.1
T	0.15+0.1/-0.05



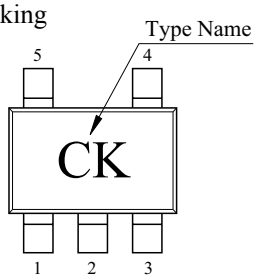
1. D_1 ANODE
2. Q_1 BASE
3. Q_1 EMITTER
4. Q_1 COLLECTOR
5. D_1 CATHODE

USV

EQUIVALENT CIRCUIT (TOP VIEW)



Marking



MAXIMUM RATINGS (Ta=25℃)

TRANSISTOR Q_1

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	15	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	6	㎃
Collector Current	I_C	500	㎃
	I_{CP} *	1	A
Collector Power Dissipation	P_C	100	㎽
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~125	℃

DIODE (SBD) D_1

CHARACTERISTIC	SYMBOL	RATING	UNIT
Maximum (Peak) Reverse Voltage	V_{RM}	30	V
Reverse Voltage	V_R	30	V
Maximum (Peak) Forward Current	I_{FM}	300	㎃
Average Forward Current	I_O	200	㎃
Surge Current (10mS)	I_{FSM}	1	A
Junction Temperature	T_j	125	℃
Storage Temperature Range	T_{stg}	-55 ~ 125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

TRANSISTOR Q_1

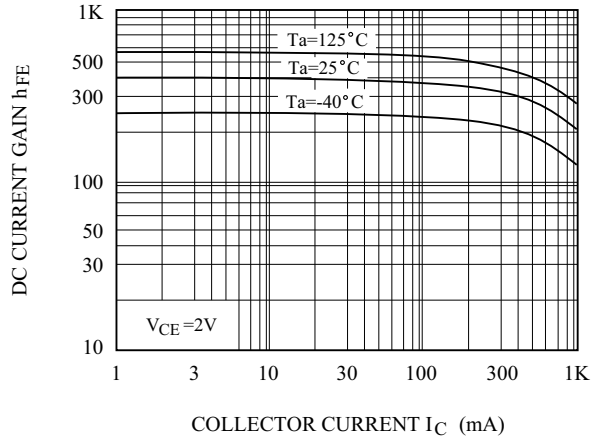
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=15V, I_E=0	-	-	100	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_E=10㎂	15	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1㎃	12	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10㎂	6	-	-	V
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=10㎃	270	-	680	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=200㎃, I_B=10㎃	-	90	250	㎷
Transition Frequency	f_T	V_{CE}=2V, I_C=10㎃, f=100㎒	-	320	-	㎒
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1㎒	-	7.5	-	pF

DIODE (SBD) D_1

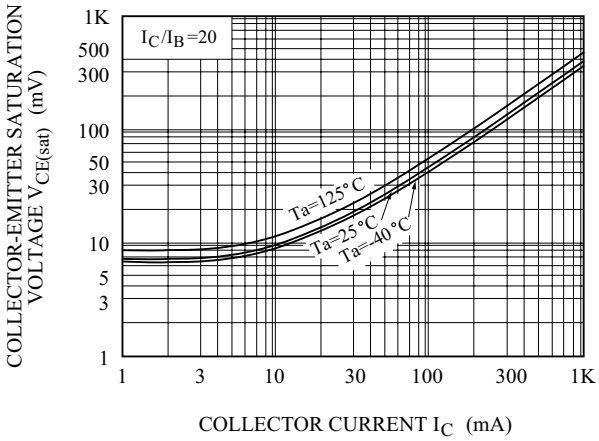
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	$V_{F(1)}$	I_F=1mA	-	0.22	-	V
	$V_{F(2)}$	I_F=10mA	-	0.29	-	
	$V_{F(3)}$	I_F=100mA	-	0.38	-	
	$V_{F(4)}$	I_F=200mA	-	0.43	0.55	
Reverse Current	I_R	V_R=30V	-	-	50	㎂
Total Capacitance	C_T	V_R=0, f=1㎒	-	50	-	pF

Q_1 (NPN TRANSISTOR)

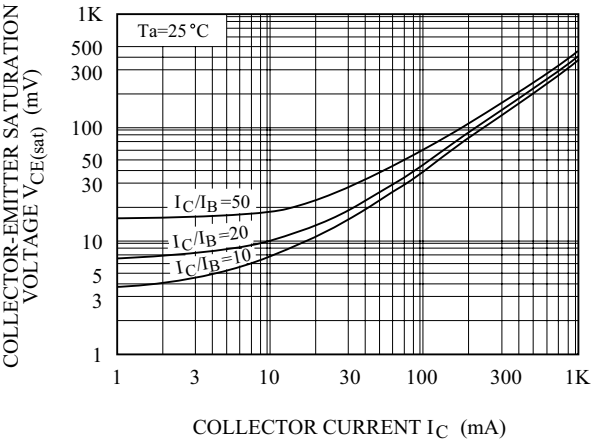
h_{FE} - I_C



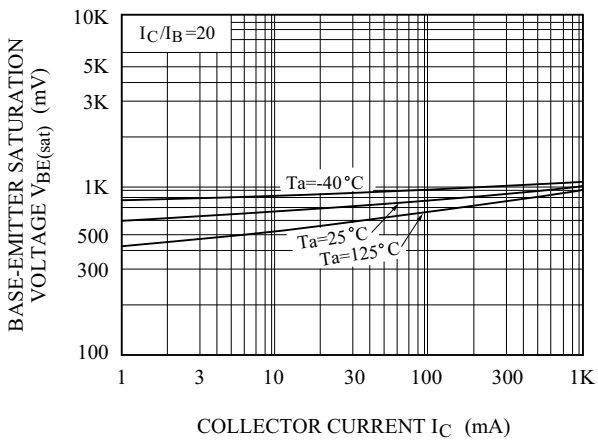
$V_{CE(sat)}$ - I_C



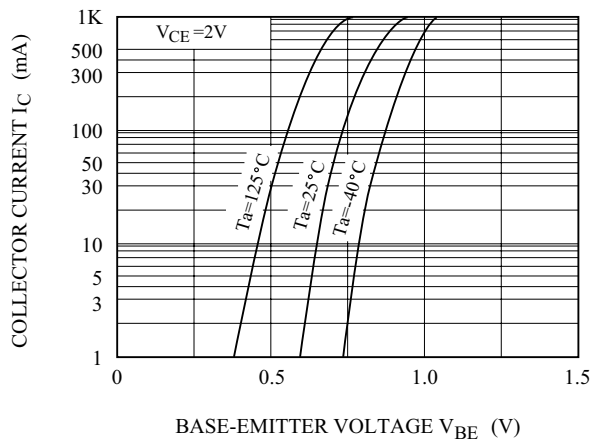
$V_{CE(sat)}$ - I_C



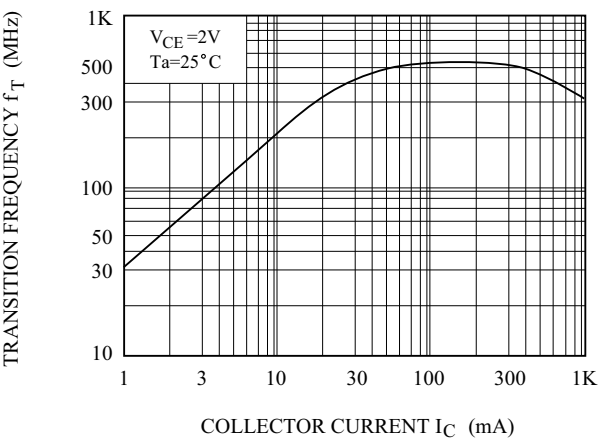
$V_{BE(sat)}$ - I_C



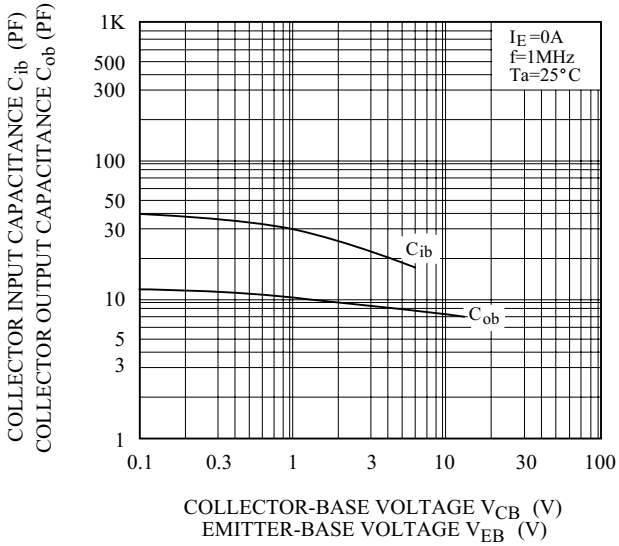
I_C - V_{BE}



f_T - I_C

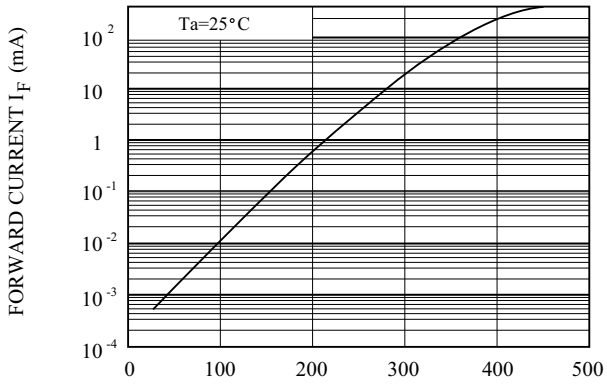


C_{ob} - V_{CB} , C_{ib} - V_{EB}

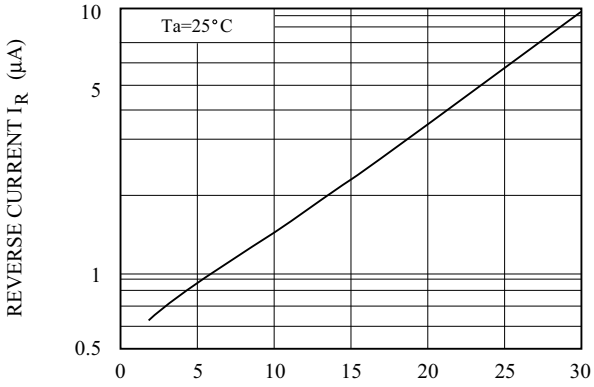


D_1 (SBD)

I_F - V_F



I_R - V_R



C_T - V_R