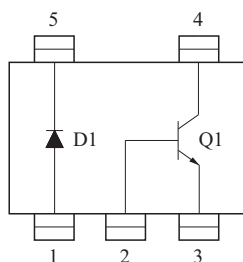


GENERAL PURPOSE APPLICATION.
LOW VOLTAGE HIGH SPEED SWITCHING.

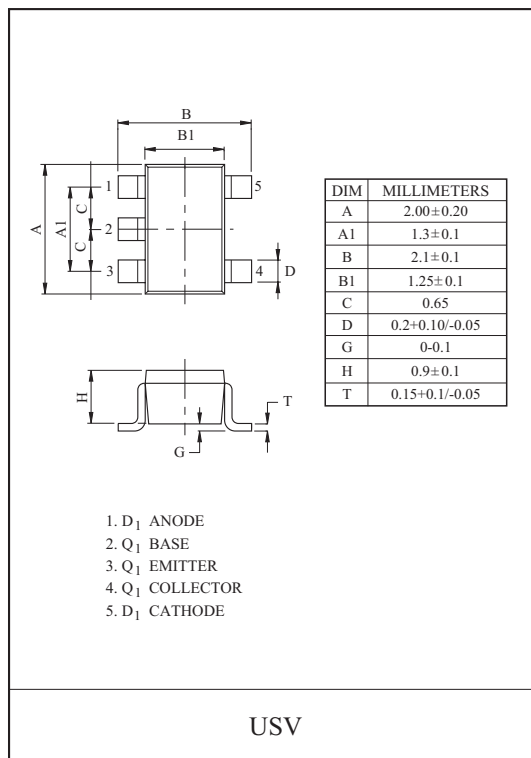
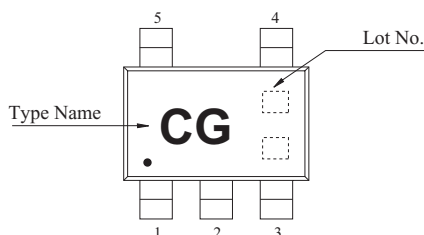
FEATURES

- 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)



Marking



MARK SPEC

Type	KTX402U	KTX402U
		Q ₁ h _{FE} Rank : Y
Mark	CG	CJ

MAXIMUM RATINGS (Ta=25 °C)

TRANSISTOR Q₁

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	5	mV
Collector Current	I _C	150	mA
Emitter Current	I _B	30	mA
Collector Power Dissipation	P _C	100	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55~125	°C

DIODE (SBD) D₁

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	mA
Average Forward Current	I _O	200	mA
Surge Current (10mS)	I _{FSM}	1	A
Junction Temperature	T _j	125	°C
Storage Temperature Range	T _{stg}	-55 ~ 125	°C

KTX402U

ELECTRICAL CHARACTERISTICS (Ta=25) TRANSISTOR Q₁

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I _{CB0}	V _{CB} =60V, I _E =0	-	-	0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} =5V, I _C =0	-	-	0.1	μA
DC Current Gain	h _{FE} (Note)	V _{CE} =6V, I _C =2mA	120	-	400	
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =100mA, I _B =10mA	-	0.1	0.25	V
Transition Frequency	f _T	V _{CE} =10V, I _C =1mA	80	-	-	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz	-	2.0	3.5	pF
Noise Figure	NF	V _{CE} =6V, I _C =0.1mA, f=1kHz, R _g =10kΩ	-	1.0	10	dB

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

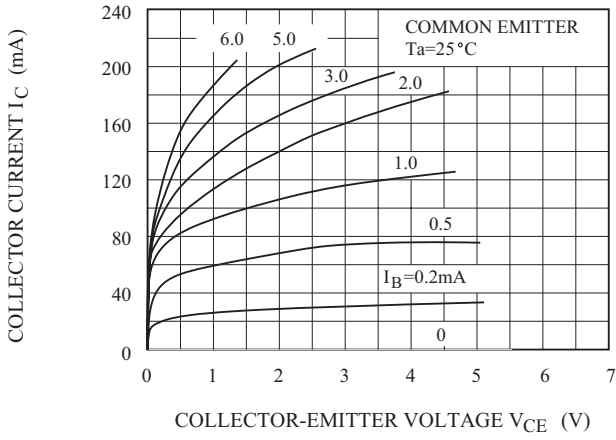
DIODE (SBD) D₁

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	μA
Total Capacitance	C _T	V _R =0, f=1MHz	-	50	-	pF

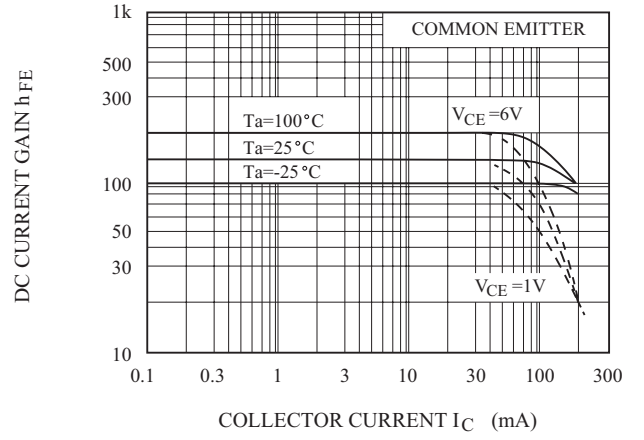
KTX402U

Q₁ (NPN TRANSISTOR)

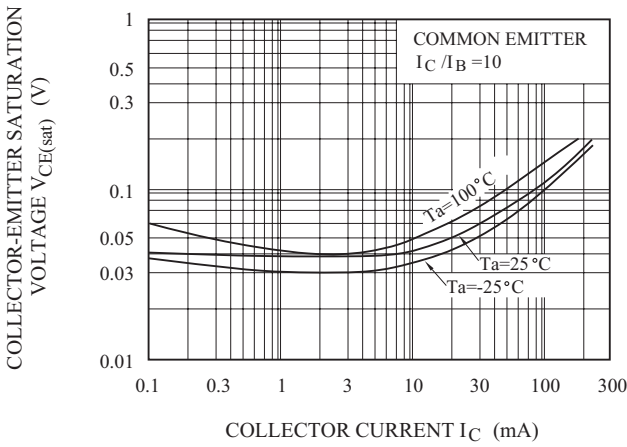
$I_C - V_{CE}$



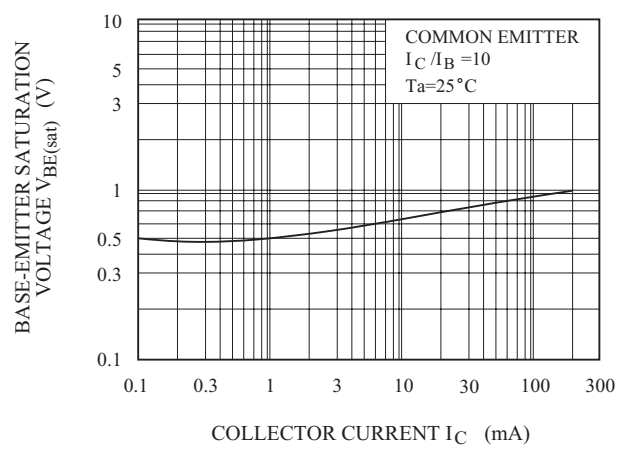
$h_{FE} - I_C$



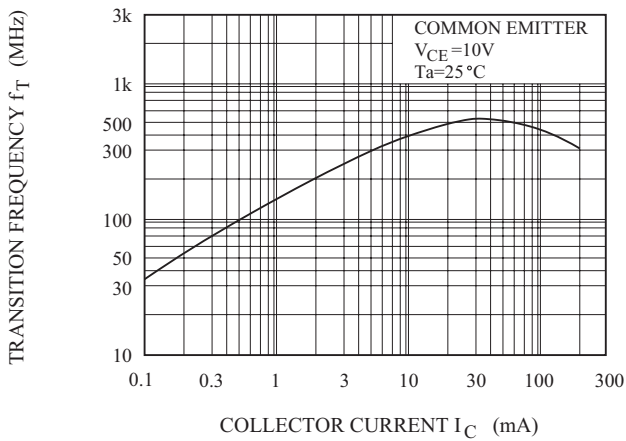
$V_{CE(sat)} - I_C$



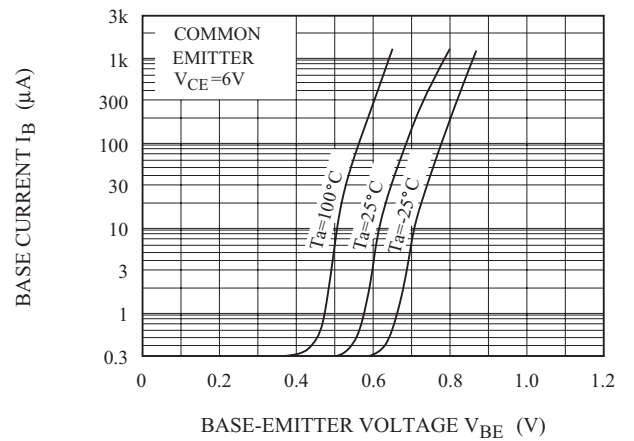
$V_{BE(sat)} - I_C$



$f_T - I_C$

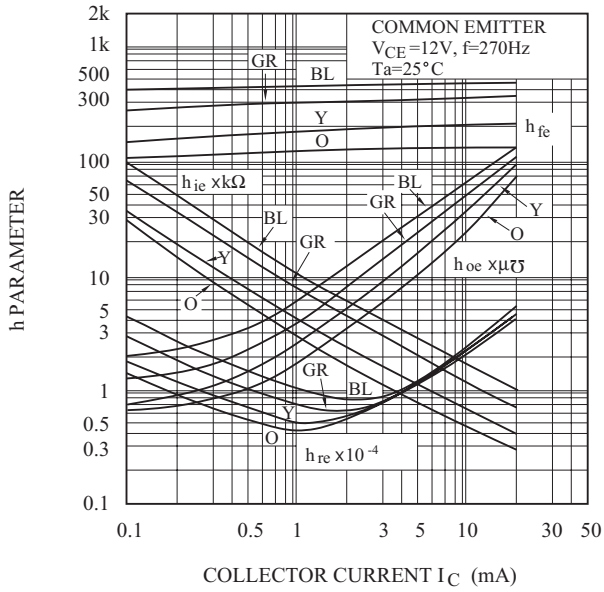


$I_B - V_{BE}$

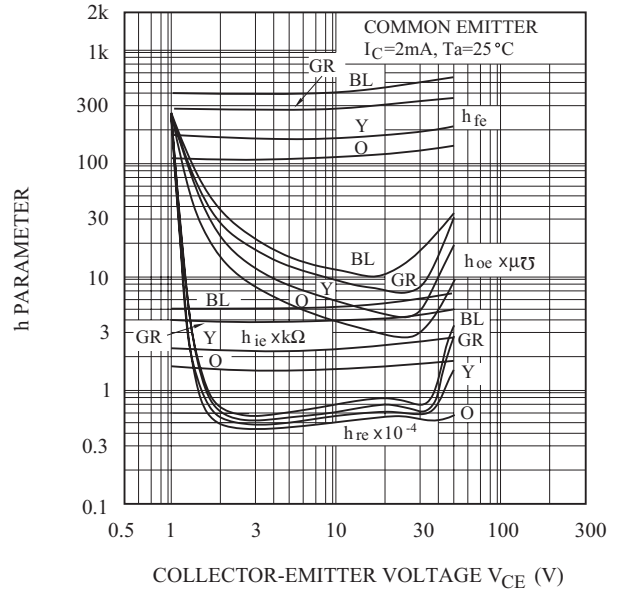


KTX402U

h PARAMETER - I_C

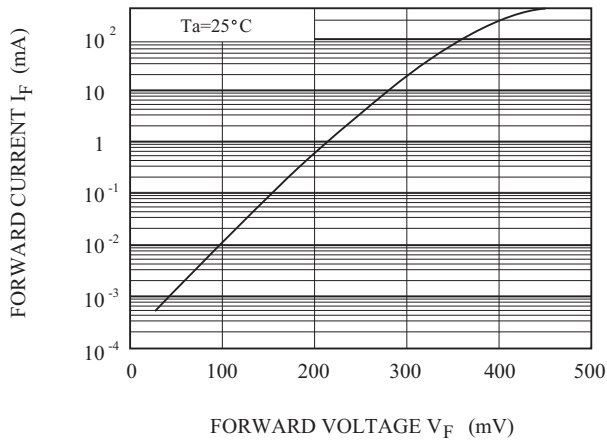


h PARAMETER - V_{CE}

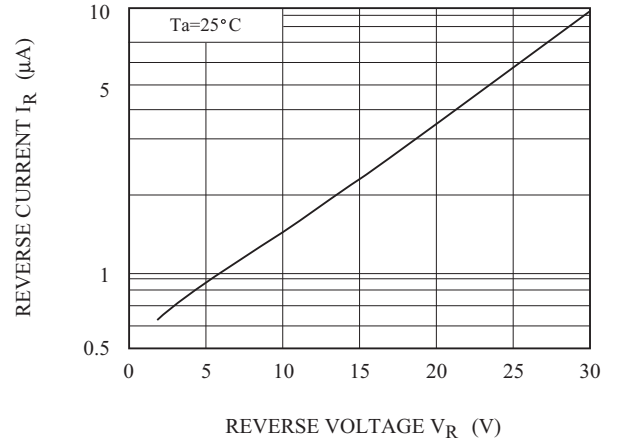


D_1 (SBD)

$I_F - V_F$



$I_R - V_R$



$C_T - V_R$

