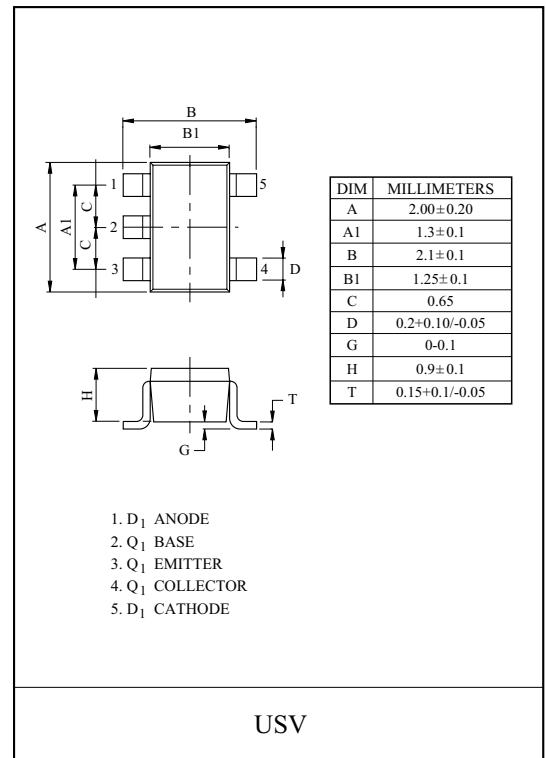
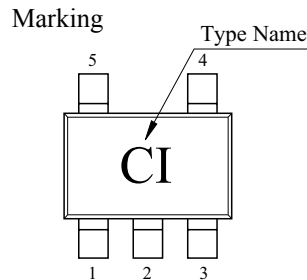
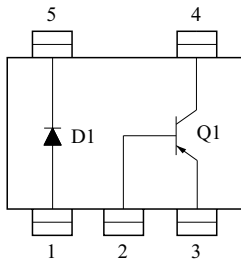


SWITCHING APPLICATION.
LOW VOLTAGE HIGH SPEED SWITCHING.

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 Q₁

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------|---------|------|
| Collector-Base Voltage | V_{CB0} | -15 | V |
| Collector-Emitter Voltage | V_{CEO} | -12 | V |
| Emitter-Base Voltage | V_{EBO} | -6 | mA |
| Collector Current | I_C | -500 | mA |
| | I_{CP}^* | -1 | A |
| 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 |

KTX303U

ELECTRICAL CHARACTERISTICS (Ta=25 °C) TRANSISTOR Q₁

| 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 =-10μA | -15 | - | - | V |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | I _C =-1mA | -12 | - | - | V |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | I _E =-10μA | -6 | - | - | V |
| DC Current Gain | h _{FE} | V _{CE} =-2V, I _C =-10mA | 270 | - | 680 | - |
| Collector-Emitter Saturation Voltage | V _{CE(SAT)} | I _C =-200mA, I _B =-10mA | - | -100 | -250 | mV |
| Transition Frequency | f _T | V _{CE} =-2V, I _C =-10mA, f=100MHz | - | 260 | - | MHz |
| Collector Output Capacitance | C _{ob} | V _{CB} =-10V, I _E =0, f=1MHz | - | 6.5 | - | pF |

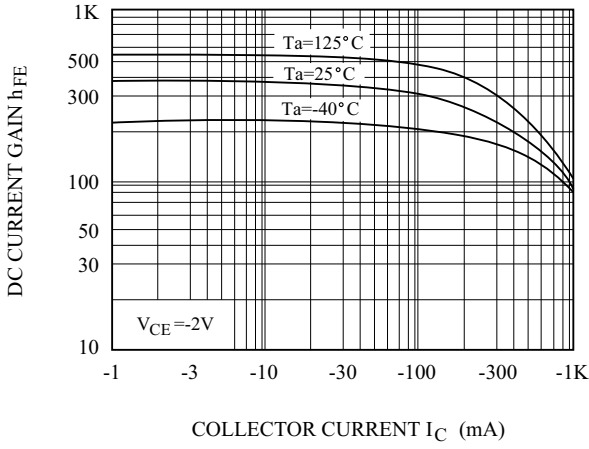
DIODE (SBD) D₁

| 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 |

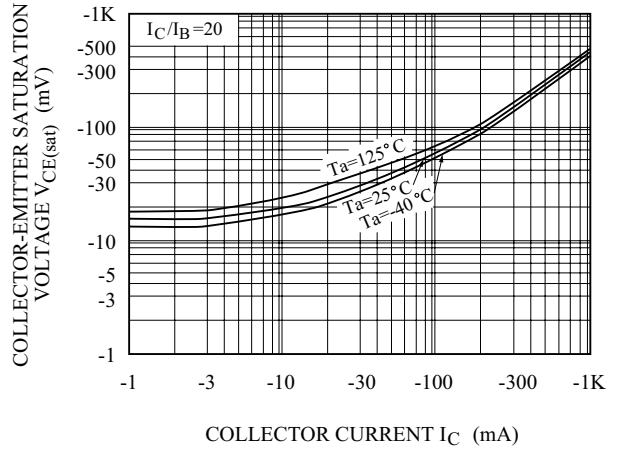
KTX303U

Q₁ (PNP TRANSISTOR)

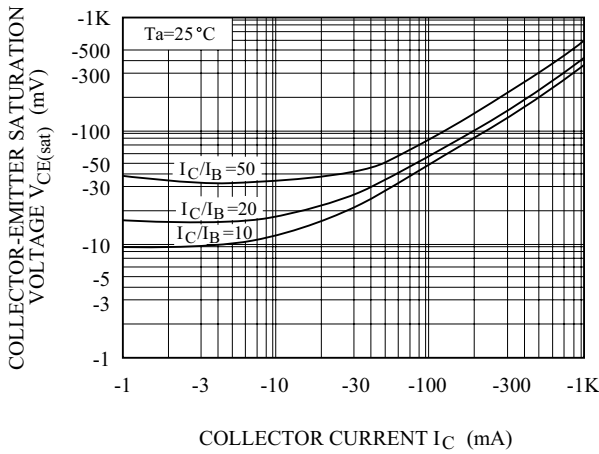
$h_{FE} - I_C$



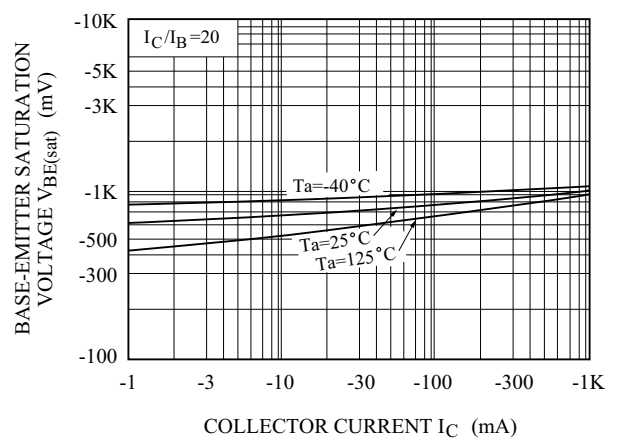
$V_{CE(sat)} - I_C$



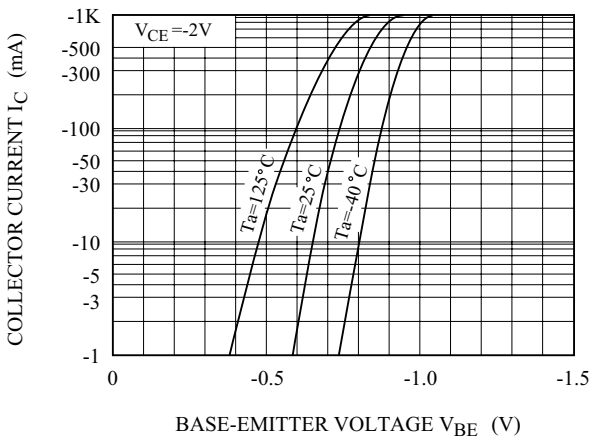
$V_{CE(sat)} - I_C$



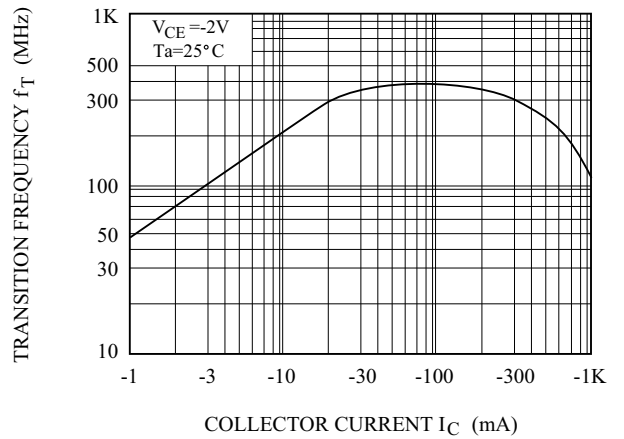
$V_{BE(sat)} - I_C$



$I_C - V_{BE}$

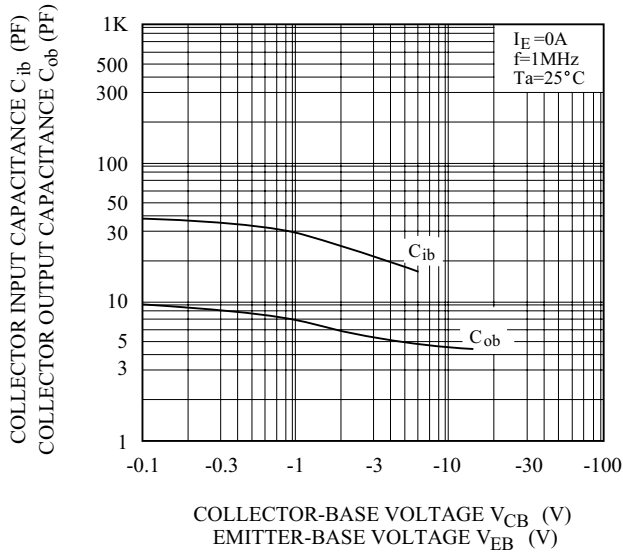


$f_T - I_C$



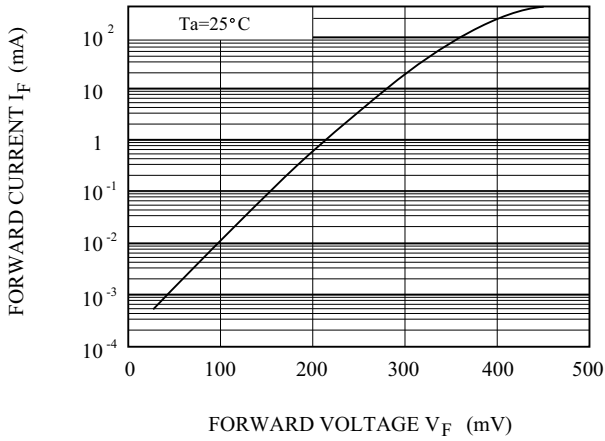
KTX303U

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

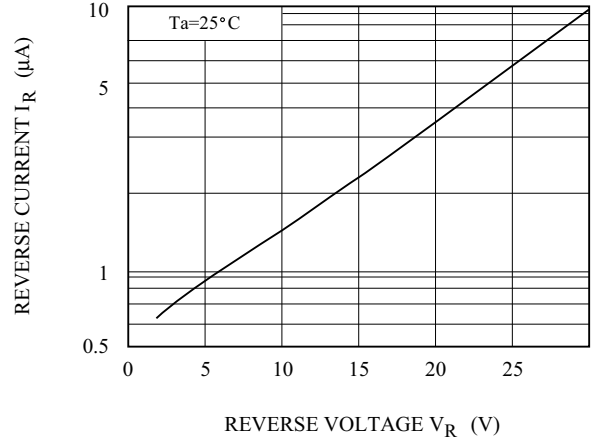


D_1 (SBD)

$I_F - V_F$



$I_R - V_R$



$C_T - V_R$

