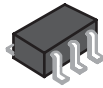


RoHS Compliant Product

*** Features**



SOT-363

Power Dissipation.

$$P_{CM} : 0.2 \text{ W (Temp.}=25^{\circ}\text{C)}$$

Collector Current

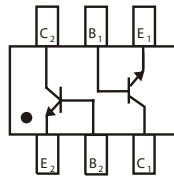
$$I_{CM} : 0.6 \text{ A}$$

Collector-Base vVoltage

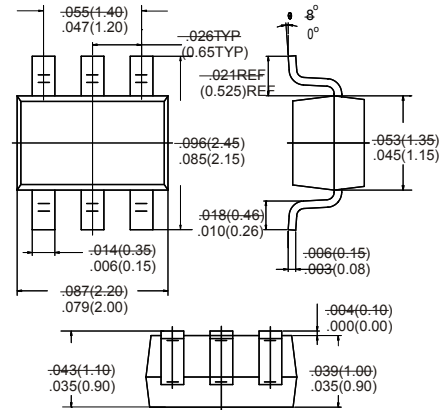
$$V_{(BR)CBO} : 60 \text{ V}$$

Operating & Storage Junction Temperature

$$T_j, T_{stg} : -55^{\circ}\text{C} \sim +150^{\circ}\text{C}$$



Marking : K2X



Dimensions in inches and (millimeters)

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------|---|--|-----|------|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$ | 40 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$ | 6 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=50\text{V}, I_E=0$ | | | 0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=35\text{V}, I_B=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\text{V}, I_C=0$ | | | 0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=1\text{V}, I_C=0.1\text{mA}$ | 20 | | | |
| | $h_{FE(2)}$ | $V_{CE}=1\text{V}, I_C=1\text{mA}$ | 40 | | | |
| | $h_{FE(3)}$ | $V_{CE}=1\text{V}, I_C=10\text{mA}$ | 80 | | | |
| | $h_{FE(4)}$ | $V_{CE}=1\text{V}, I_C=150\text{mA}$ | 100 | | 300 | |
| | $h_{FE(5)}$ | $V_{CE}=2\text{V}, I_C=500\text{mA}$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)1}$ | $I_C=150\text{mA}, I_B=15\text{mA}$ | | | 0.4 | V |
| | $V_{CE(sat)2}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 0.75 | V |
| Base-emitter saturation voltage | $V_{BE(sat)1}$ | $I_C=150\text{mA}, I_B=15\text{mA}$ | 0.75 | | 0.95 | V |
| | $V_{BE(sat)2}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 1.2 | V |
| Transition frequency | f_T | $V_{CE}=10\text{V}, I_C=20\text{mA}$ $f=100\text{MHz}$ | 250 | | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=5\text{V}, I_E=0$ $f=1\text{MHz}$ | | | 6.5 | pF |
| Delay time | t_d | $V_{CC}=30\text{V}, V_{BE}=2\text{V}$ | | | 15 | nS |
| Rise time | t_r | | $I_C=150\text{mA}, I_{B1}=15\text{mA}$ | | | 20 |
| Storage time | t_s | $V_{CC}=30\text{V}, I_C=150\text{mA}$ | | | 225 | nS |
| Fall time | t_f | | $I_{B1}=I_{B2}=15\text{mA}$ | | | 30 |

Typical Characteristics

MMDT4401

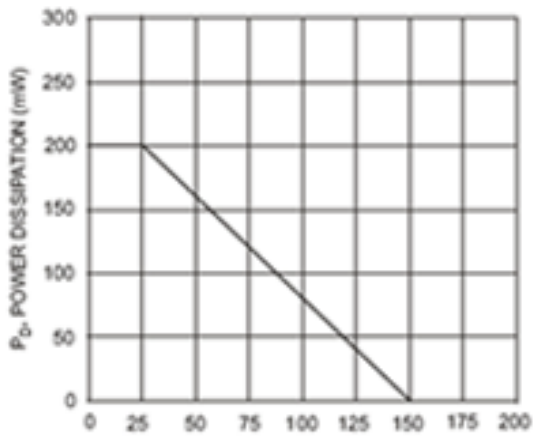


Fig. 1 Max Power Dissipation vs Ambient Temperature

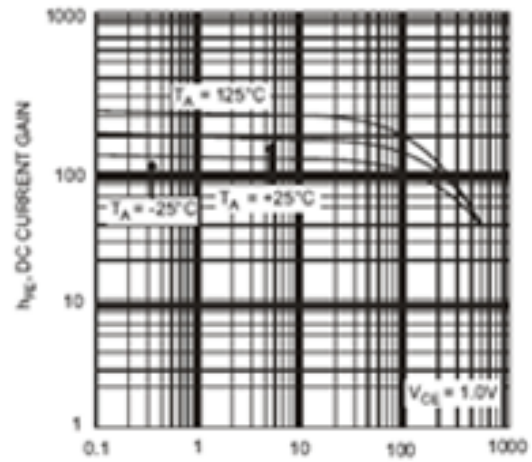


Fig. 2 Typical DC Current Gain vs Collector Current

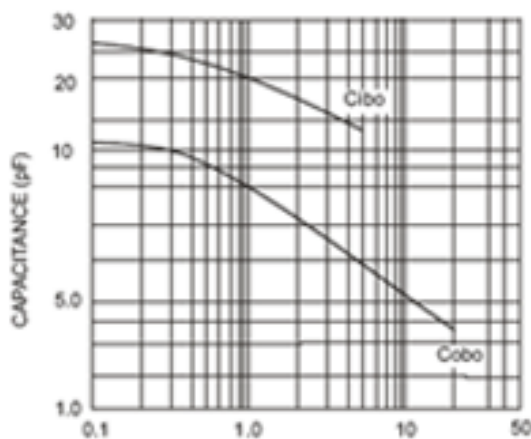


Fig. 3 Typical Capacitance

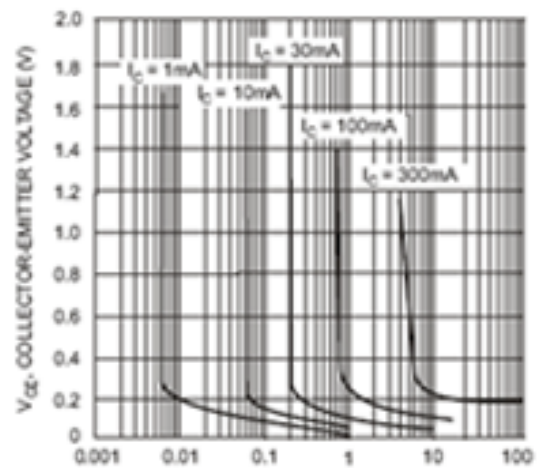


Fig. 4 Typical Collector Saturation Region

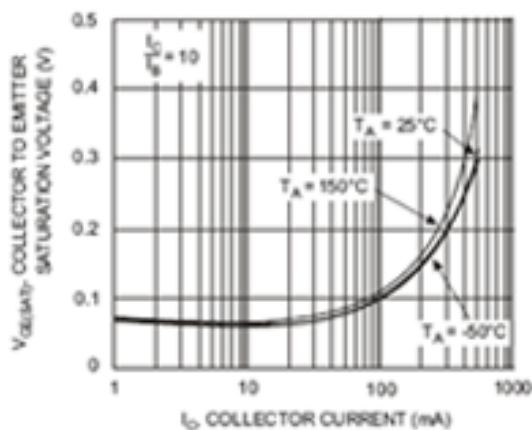


Fig. 5 Collector Emitter Saturation Voltage vs. Collector Current

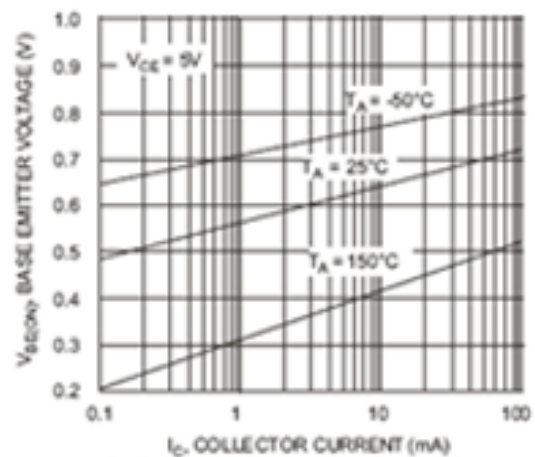


Fig. 6 Base Emitter Voltage vs. Collector Current