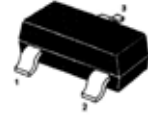


**FUKUCOM COMPANY LTD.****福 靈 有 限 公 司**FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

MMBT4401LT1**General Purpose Transistor**

- Collector Dissipation: $P_c=225\text{mW}$
- Collector-Emitter Voltage : $V_{CEO}=40\text{V}$

1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package**PNP Epitaxial Silicon Transistor****Absolute Maximum Ratings** $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Dissipation	225	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55~150	$^\circ\text{C}$

Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=100\ \mu\text{A}, I_E=0$	60		V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$	40		V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=-100\ \mu\text{A}, I_C=0$	6		V
I_{CEX}	Emitter Cut-off Current	$V_{CE}=35\text{V}, V_{EB}=0.4\text{V}$		100	$\eta\ \text{A}$
I_{BEV}	Collector Cut-off Current	$V_{EB}=35\text{V}, V_{EB}=0.4\text{V}$		100	$\eta\ \text{A}$
h_{FE}	DC Current Gain	$V_{CE}=1\text{V}, I_C=0.1\text{mA}$ $V_{CE}=1\text{V}, I_C=1\text{mA}$ $V_{CE}=1\text{V}, I_C=10\text{mA}$ $V_{CE}=1\text{V}, I_C=150\text{mA}$ $V_{CE}=2\text{V}, I_C=500\text{mA}$	20 40 80 100 40	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=150\text{mA}, I_B=15\text{mA}$		0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=150\text{mA}, I_B=15\text{mA}$ $I_C=500\text{mA}, I_B=50\text{mA}$	0.75	0.95 1.2	V
f_T	Current Gain-Bandwidth Product	$V_{CE}=20\text{V}, I_C=10\text{mA},$ $f=100\text{MHz}$	250		MHz

* Total Device Dissipation : $FR=1 \times 0.75 \times 0.062$ in Board, Derate 25°C # Pulse Test : Pulse Width $\leq 300\ \mu\text{s}$, Duty cycle $\leq 2\%$

Marking:MMBT4401LT1 = 2X / H2X



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MMBT4401LT1

SWITCHING TIME EQUIVALENT TEST CIRCUITS

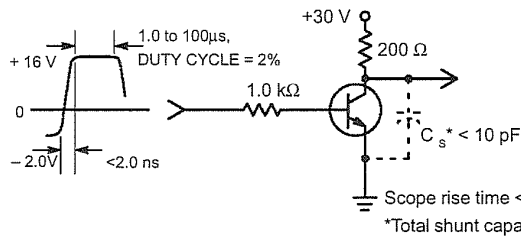


Figure 1. Turn-On Time

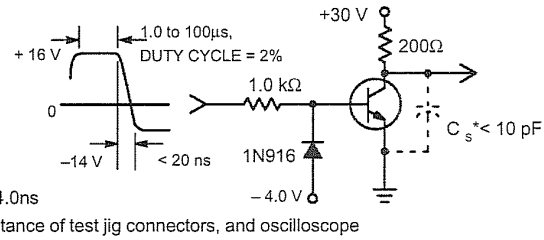


Figure 2. Turn-Off Time

SMALL-SIGNAL CHARACTERISTICS

NOISE FIGURE

$V_{CE} = 10 \text{ Vdc}$, $T_A = 25^\circ\text{C}$

Bandwidth = 1.0 Hz

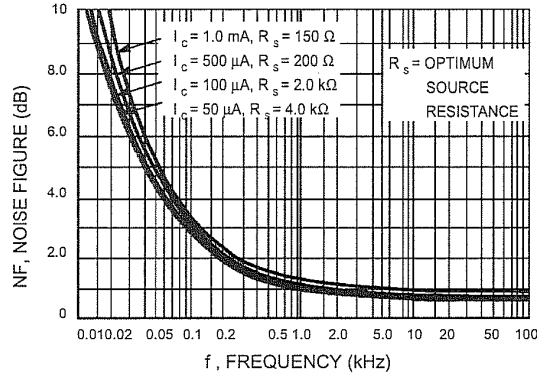


Figure 3. Frequency Effects

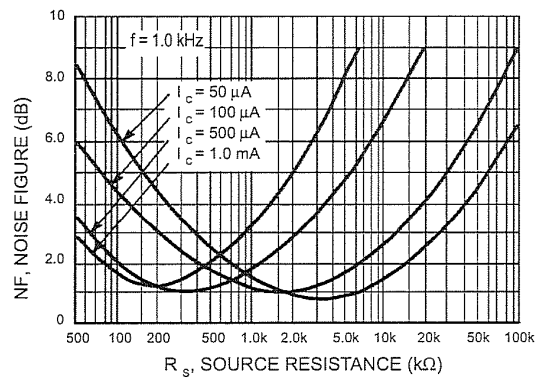


Figure 4. Source Resistance Effects



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STATIC CHARACTERISTICS

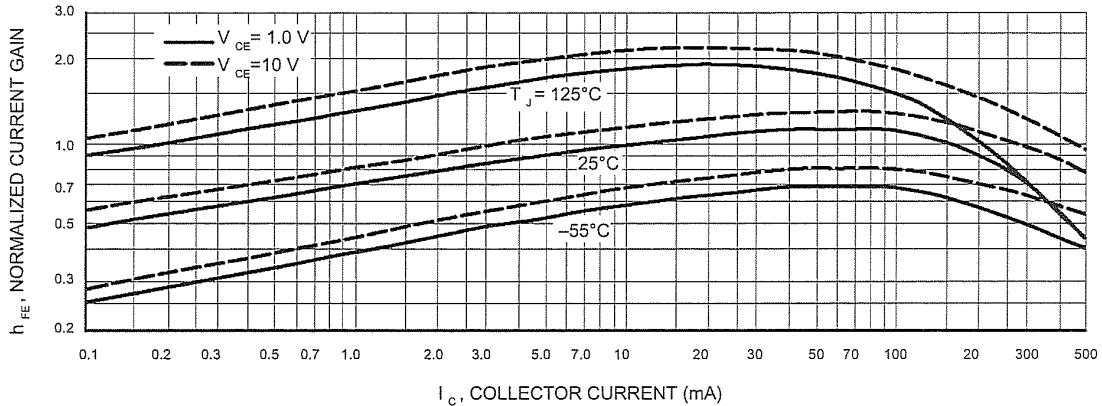


Figure 11. DC Current Gain

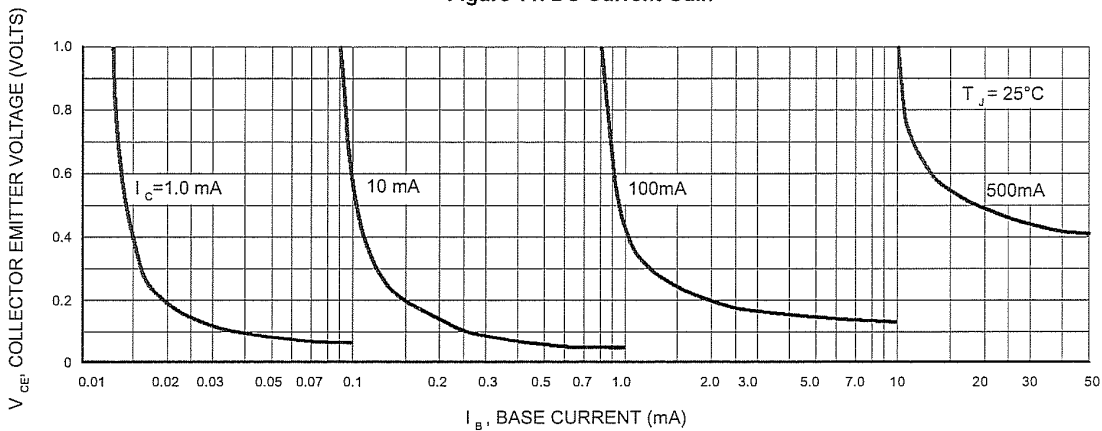


Figure 12. Collector Saturation Region

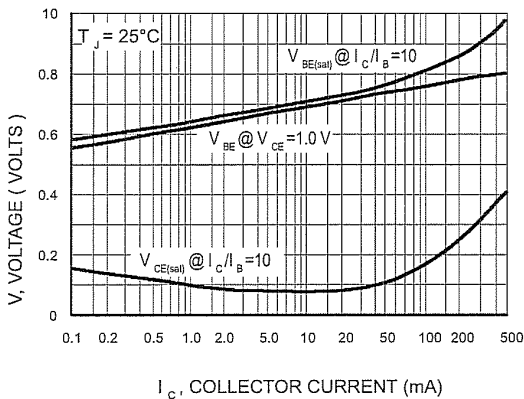


Figure 13. "On" Voltages

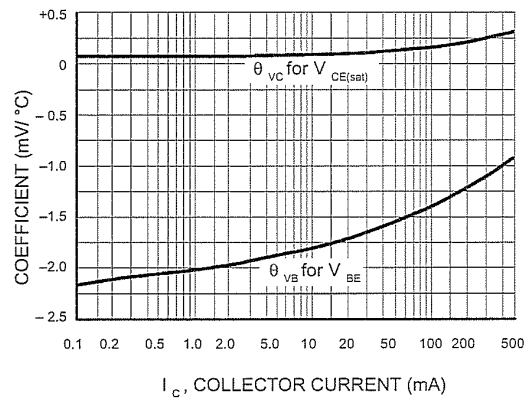


Figure 14. Temperature Coefficients



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TRANSIENT CHARACTERISTICS

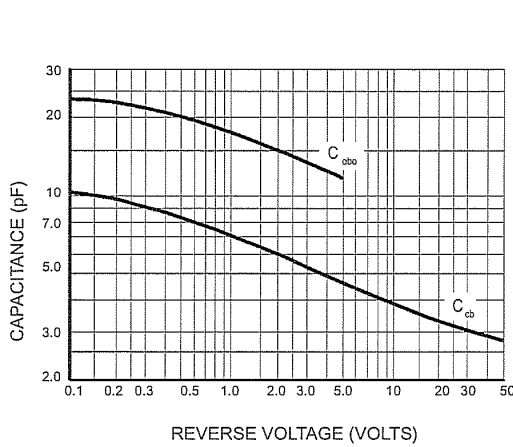


Figure 5. Capacitance

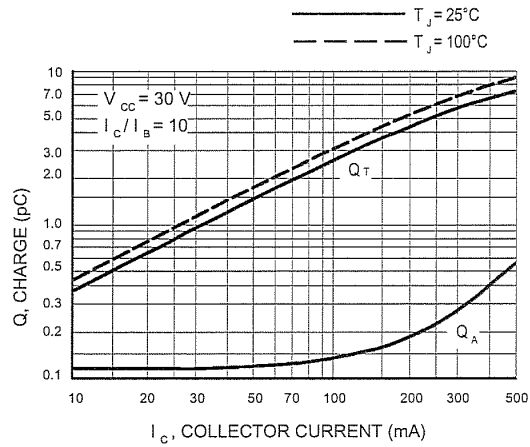


Figure 6. Charge Data

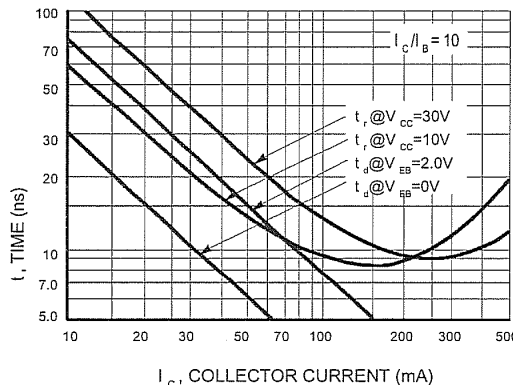


Figure 7. Turn-On Time

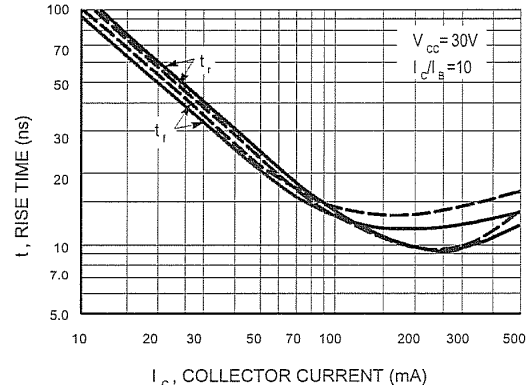


Figure 8. Rise and Fall Time

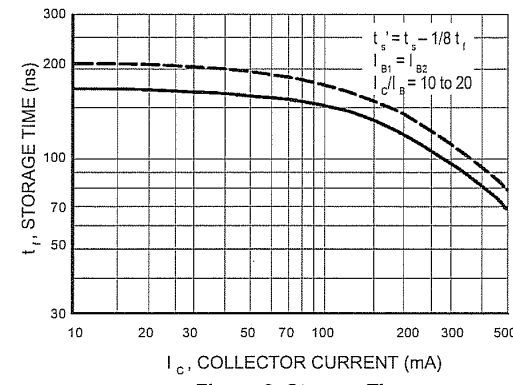


Figure 9. Storage Time

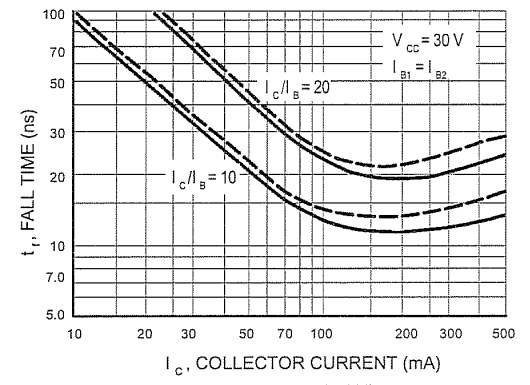


Figure 10. Fall Time