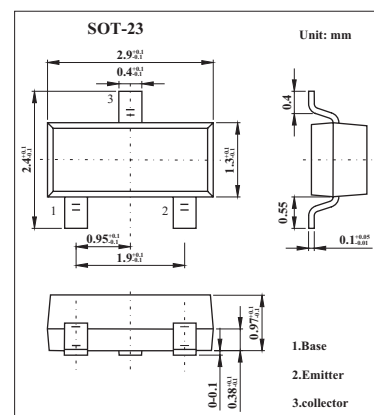


PNP Transistors

KMBT5401(MMBT5401)

■ Features

- High Voltage Transistors
- Pb-Free Packages are Available



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	-160	V
Collector-emitter voltage	V_{CE0}	-150	V
Emitter-base voltage	V_{EB0}	-5	V
Collector current-continuous	I_C	-0.6	A
Collector Power Dissipation	P_C	300	mW
Junction and storage temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CB0}	$I_C = -100 \mu\text{A}, I_E = 0$	-160			V
Collector-emitter breakdown voltage *	V_{CE0}	$I_C = -1.0 \text{ mA}, I_B = 0$	-150			V
Emitter-base breakdown voltage	V_{EB0}	$I_E = -10 \mu\text{A}, I_C = 0$	-5			V
Collector cutoff current	I_{CBO}	$V_{CB} = -120 \text{ V}, I_E = 0$			-0.1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -4.0 \text{ V}, I_C = 0$			-0.1	μA
DC current gain *	h_{FE}	$I_C = -1.0 \text{ mA}, V_{CE} = -5 \text{ V}$	80			
		$I_C = -10 \text{ mA}, V_{CE} = -5 \text{ V}$	100		300	
		$I_C = -50 \text{ mA}, V_{CE} = -5 \text{ V}$	50			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -50 \text{ mA}, I_B = -5.0 \text{ mA}$			-0.5	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = -50 \text{ mA}, I_B = -5.0 \text{ mA}$			-1.0	V
Transistor frequency	f_T	$V_{CE} = -5 \text{ V}, I_C = -10 \text{ mA}, f = 30 \text{ MHz}$	100			MHz

* Pulse Test: Pulse Width = 300 μs , Duty Cycle=2.0%.

■ Marking

Marking	2L
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KMBT5401(MMBT5401)

■ Typical Characteristics

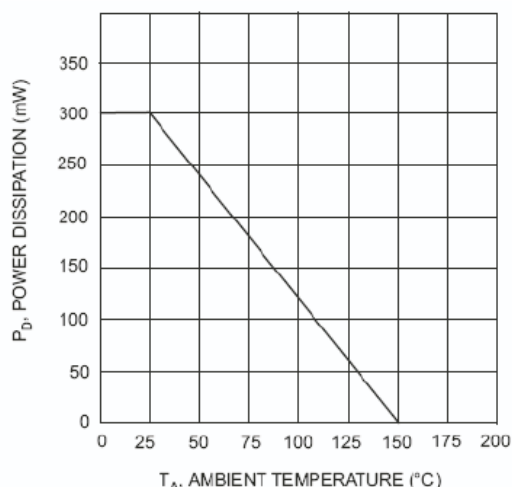


Fig.1 Max Power Dissipation vs. Ambient Temperature

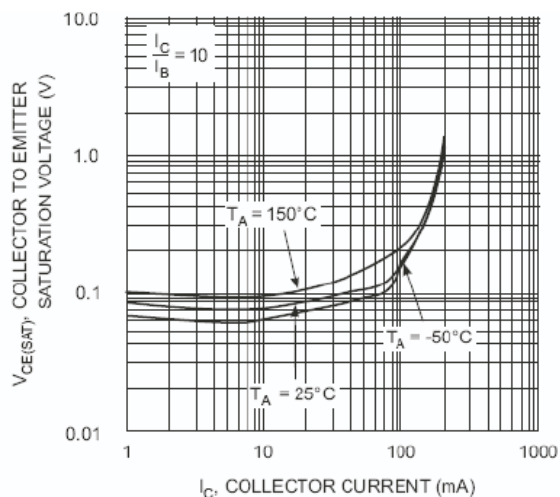


Fig.2 Collector Emitter Saturation Voltage vs. Collector Current

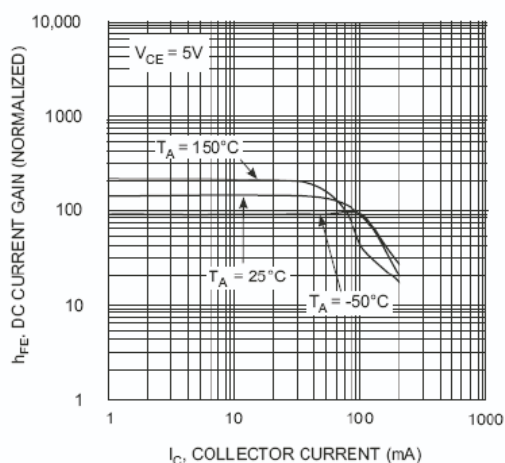


Fig.3 DC Current Gain vs. Collector Current

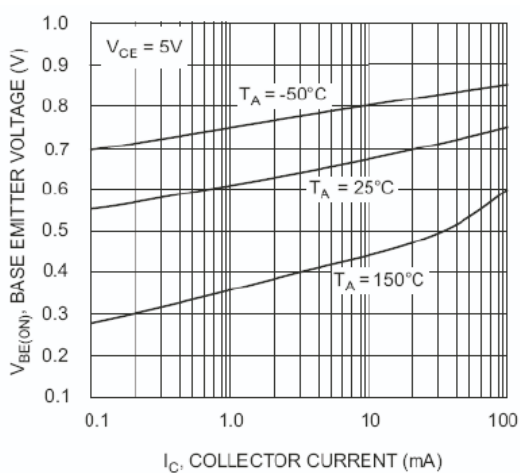


Fig.4 Base Emitter Voltage vs. Collector Current

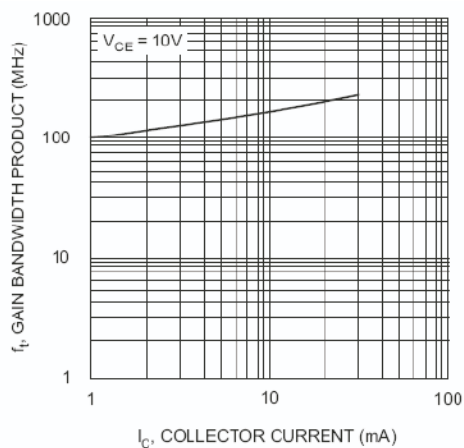


Fig.5 Gain Bandwidth Product vs. Collector Current