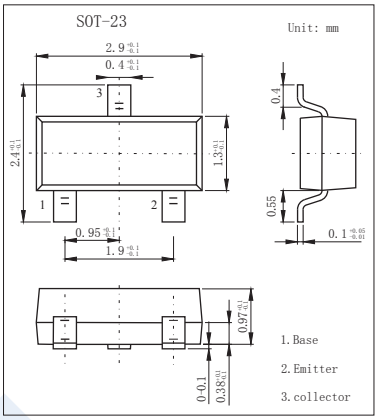
PNP Transistors

MMBT4403 (KMBT4403)



■ Features

- Ideal for Medium Power Amplification and Switching
- Complementary NPN Type Available (MMBT4401)

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-40	V
Collector-emitter voltage	V_{CEO}	-40	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-600	mA
Total Device Dissipation Alumina Substrate	P_D	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	℃/W
Junction and Storage Temperature	T_J, T_{stg}	-55 to150	℃

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1.0 mA, I_B = 0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E =100μA, I_C = 0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-35 V, I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V, I_C=0			-0.1	μA
DC current gain *	h_{FE}	I_C = -0.1 mA, V_{CE} = -1.0 V I_C = -1.0 mA, V_{CE} = -1.0 V I_C = -10 mA, V_{CE} = -1.0 V I_C = -150 mA, V_{CE} = -2.0 V I_C = -500 mA, V_{CE} = -2.0 V	30 60 100 100 20		300	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C = -150 mA, I_B = -15 mA			-0.4	V
		I_C = -500 mA, I_B = -50 mA			-0.75	
Base-emitter saturation voltage *	$V_{BE(sat)}$	I_C = 150 mA, I_B = 15 mA	-0.75		-0.95	V
		I_C = 500 mA, I_B = 50 mA			-1.3	
Transition frequency	f_T	I_C = 20 mA, V_{CE} = 10 V, f = 100 MHz	200			MHz
Delay time	t_d	V_{CC} = 30 V, V_{EB} = 2.0 V,			15	ns
Rise time	t_r	I_C = 150 mA, I_{B1} = 15 mA			20	ns
Storage time	t_s	V_{CC} = 30 V, I_C = 150 mA,			225	ns
Fall time	t_f	I_{B1} = I_{B2} = 15 mA			30	ns

* Pulse test: pulse width ⩽ 300 μs, duty cycle ⩽ 2.0%.

■ Marking

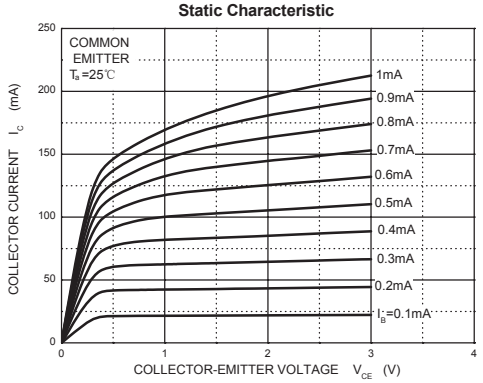
Marking	2T

PNP Transistors

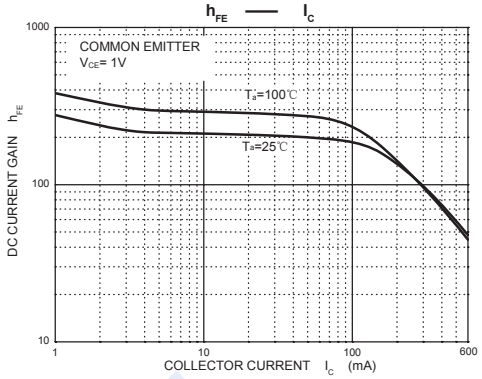
MMBT4403 (KMBT4403)

■ Typical Characterisitics

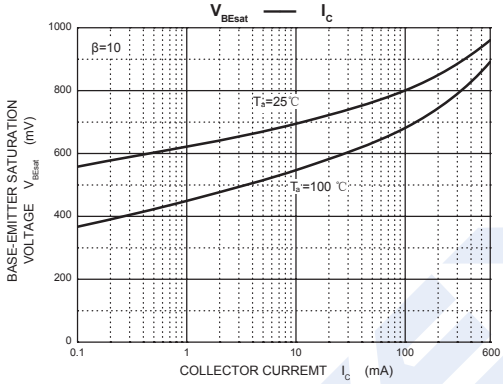
Static Characteristic



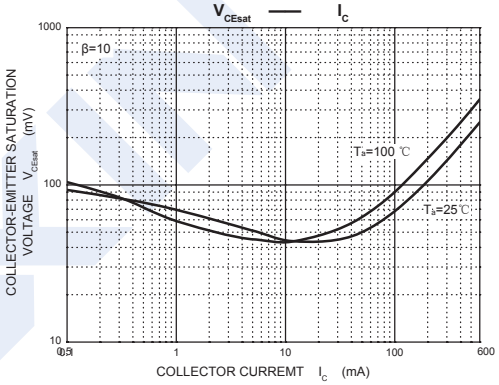
h_{FE} — I_C



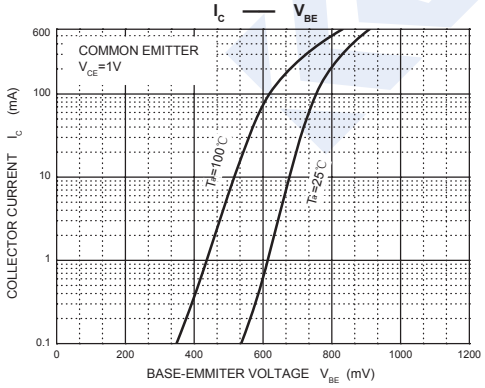
V_{BEsat} — I_C



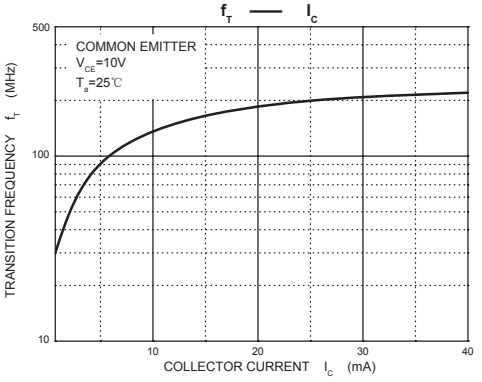
V_{CEsat} — I_C



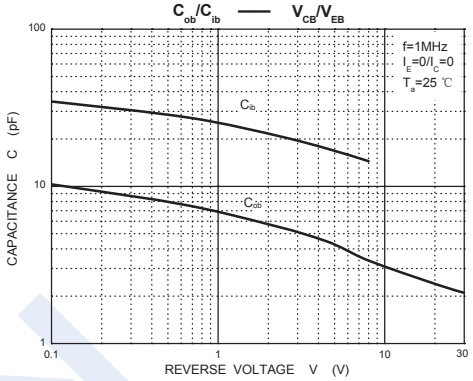
I_C — V_{BE}



f_T — I_C



C_{ob}/C_{ib} — V_{CB}/V_{EB}



P_C — T_a

