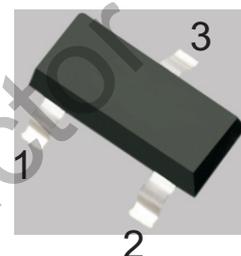**WildGoosE**

MMBT4403

FEATURES
• Switching Transistor

SOT-23

1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector–Base Voltage	V_{CBO}	-40	V
Collector–Emitter Voltage	V_{CEO}	-40	V
Emitter–Base Voltage	V_{EBO}	-5	V
Collector Current — Continuous	I_C	-600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction To Ambient	R_{thJA}	417	℃/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	℃

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = -100uA, I_E = 0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = -1 mA, I_B = 0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = -100uA, I_C = 0	-5			V
Collector cut-off current	I_{CBO}	V_{CB} = -35V, I_E = 0			-0.1	uA
Collector cut-off current	I_{CEX}	V_{CE} = -35V, V_{EB} =0.4V			-0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB} = -4V, I_C =0			-0.1	uA
DC current gain	h_{FE1}	V_{CE} = -1V, I_C=-0.1mA	30			
	h_{FE2}	V_{CE} = -1V, I_C=-1mA	60			
	h_{FE3}	V_{CE} = -1V, I_C=-10mA	100			
	h_{FE4}	V_{CE} = -2V, I_C = -150mA	100		300	
	h_{FE5}	V_{CE} = -2V, I_C = -500mA	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -150mA, I_B = -15mA			-0.4	V
		I_C = -500mA, I_B = -50mA			-0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = -150mA, I_B = -15mA			-0.95	V
		I_C = -500mA, I_B = -50mA			-1.3	V
Transition frequency	f_T	V_{CE} = -10V, I_C = -20mA, f=100MHz	200			MHz
Delay time	t_d	V_{CC}=-30V,$V_{BE(off)}$=-0.5V I_C=-150mA,I_{B1}=-15mA			15	ns
Rise time	t_r				20	ns
Storage time	t_s	V_{CC} = -30V, I_C = -150mA I_{B1}=I_{B2}=-15mA			225	ns
Fall time	t_f				60	ns

TYPICAL CHARACTERICS

Fig.1 Static characteristics

COMMON EMITTER
T_a=25℃

COLLECTOR CURRENT I_C (A)

I_B=-0.1mA

I_B=-0.1mA

COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

Fig.2 Pc —— Ta

COLLECTOR POWER DISSIPATION Pc (mW)

AMBIENT TEMPERATURE Ta (℃)

Fig.3 Cob / Cib —— VCB / VEB

CAPACITANCE C (pF)

f=1MHz
I_E=0/I_C=0
Ta=25℃

Cib

Cob

REVERSE BIAS VOLTAGE V (V)

Fig.4 VCEsat —— Ic

COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (V)

T_a=25℃

β=10

I_C , COLLECTOR CURRENT (mA)

Fig.5 hFE--Ic

DC CURRENT GAIN h_{FE}

T_a=25℃

COMMON EMITTER
V_{CE}=-2V

I_C , COLLECTOR CURRENT (mA)

Fig.6 VBEsat —— Ic

BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (V)

T_a=25℃

β=10

I_C , COLLECTOR CURRENT (mA)

Fig.7 Ic —— VBE

COLLECTOR CURRENT I_C (mA)

COMMON EMITTER
V_{CE}=-2V

T_a=25℃

BASE-EMMITER VOLTAGE V_{BE} (V)

Fig.8 fT —— Ic

TRANSITION FREQUENCY f_T (MHz)

COMMON EMITTER
V_{CE}=-10V
T_a=25℃

I_C , COLLECTOR CURRENT (mA)