



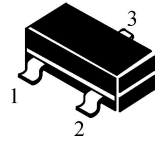
# 安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO., LTD

MMBT5401

SOT-23

- 1. BASE
- 2. EMITTER
- 3. COLLECTOR



## ■ FEATURES 特點

PNP High Voltage Transistor

## ■ MAXIMUM RATINGS 最大額定值

Characteristic 特性參數	Symbol 符號	Rating 額定值	Unit 單位
Collector-Emitter Voltage 集電極-發射極電壓	$V_{CEO}$	-150	Vdc
Collector-Base Voltage 集電極-基極電壓	$V_{CBO}$	-160	Vdc
Emitter-Base Voltage 發射極-基極電壓	$V_{EBO}$	-6.0	Vdc
Collector Current—Continuous 集電極電流-連續	$I_c$	-500	mAdc

## ■ THERMAL CHARACTERISTICS 熱特性

Characteristic 特性參數	Symbol 符號	Max 最大值	Unit 單位
Total Device Dissipation 總耗散功率 FR-5 Board(1) $T_A=25^{\circ}\text{C}$ 環境溫度 $25^{\circ}\text{C}$ Derate above $25^{\circ}\text{C}$ 超過 $25^{\circ}\text{C}$ 遞減	$P_D$	225 1.8	mW mW/ $^{\circ}\text{C}$
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	556	$^{\circ}\text{C}/\text{W}$
Total Device Dissipation 總耗散功率 Alumina Substrate 氧化鋁襯底(2) $T_A=25^{\circ}\text{C}$ Derate above $25^{\circ}\text{C}$ 超過 $25^{\circ}\text{C}$ 遞減	$P_D$	300 2.4	mW mW/ $^{\circ}\text{C}$
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	417	$^{\circ}\text{C}/\text{W}$
Junction and Storage Temperature 結溫和儲存溫度	$T_J, T_{stg}$	150 $^{\circ}\text{C}$ , -55to+150 $^{\circ}\text{C}$	

## ■ DEVICE MARKING 打標

MMBT5401=2L



MMBT5401

## ■ ELECTRICAL CHARACTERISTICS 電特性

(TA=25°C unless otherwise noted 如無特殊說明，溫度為 25°C)

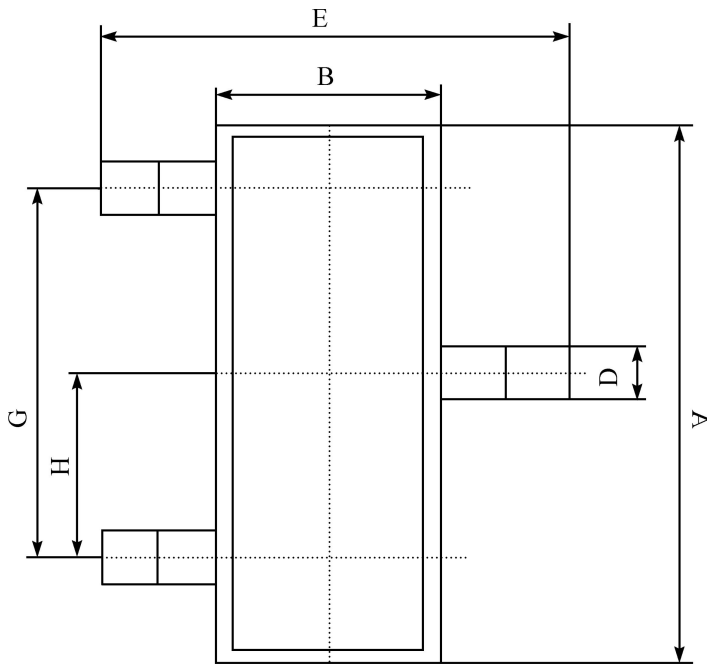
Characteristic 特性參數	Symbol 符號	Min 最小值	Max 最大值	Unit 單位
Collector-Emitter Breakdown Voltage(3) 集電極-發射極擊穿電壓(Ic=-1.0mA, IB=0)	V <sub>(BR)CEO</sub>	-150	—	Vdc
Collector-Base Breakdown Voltage 集電極-基極擊穿電壓(Ic=-100 μA, IE=0)	V <sub>(BR)CBO</sub>	-160	—	Vdc
Emitter-Base Breakdown Voltage 發射極基極擊穿電壓(IE=-10 μA, IC=0)	V <sub>(BR)EBO</sub>	-6.0	—	Vdc
Emitter Cutoff Current 發射極截止電流(V <sub>EB</sub> =-3.0Vdc, IC=0)	I <sub>EBO</sub>	—	-50	nA
Collector Cutoff Current 集電極截止電流(V <sub>CB</sub> =-120Vdc, IE=0)	I <sub>CBO</sub>	—	-50	nA
DC Current Gain 直流電流增益	H <sub>FE</sub>			—
(Ic=-1.0mA, V <sub>CE</sub> =-5.0Vdc)		50	—	
(Ic=-10mA, V <sub>CE</sub> =-5.0Vdc)		60	240	
(Ic=-50mA, V <sub>CE</sub> =-5.0Vdc)		30	—	
Collector-Emitter Saturation Voltage 集電極-發射極飽和壓降 (Ic=-10mA, IB=-1.0mA) (Ic=-50mA, IB=-10mA)	V <sub>CE(sat)</sub>	—	-0.2 -0.5	Vdc
Base-Emitter Saturation Voltage 基極-發射極飽和壓降 (Ic=-10mA, IB=-1.0mA) (Ic=-50mA, IB=-5.0mA)	V <sub>BE(sat)</sub>	—	-1.0 -1.0	Vdc
Current-Gain-Bandwidth Product 電流增益-帶寬乘積 (Ic=-10mA, V <sub>CE</sub> =-10Vdc, f=100MHz)	f <sub>T</sub>	100	300	MHz
Output Capacitance 輸出電容 (V <sub>CB</sub> =-10.0Vdc, IE=0, f=1.0MHz)	C <sub>obo</sub>	—	6.0	pF
Small-Signal Current Gain 小信號電流增益 (V <sub>CE</sub> =-10Vdc, IC=-1.0mA, f=1.0KHz)	h <sub>fe</sub>	40	200	—
Noise Figure 噪声係數 (V <sub>CE</sub> =-5.0Vdc, IC=-200 μA, R <sub>s</sub> =1.0k Ω, f=1.0KHz)	NF	—	8.0	dB

- 1 . FR-5=1.0×0.75×0.062in.
- 2 . Alumina=0.4×0.3×0.024in.99.5%alumina.
- 3 . Pulse Width≤300us;Duty Cycle≤2.0%.

销售型号 MMBT5401

## ■ DIMENSION 外形封装尺寸

单位(UNIT): mm



序号	数值及公差
A	2.90 ± 0.10
B	1.30 ± 0.10
C	1.00 ± 0.10
D	0.40 ± 0.10
E	2.40 ± 0.20
G	1.90 ± 0.10
H	0.95 ± 0.05
J	0.13 ± 0.05
K	0.00-0.10
M	≥ 0.2
N	0.60 ± 0.10
P	7 ± 2°

