



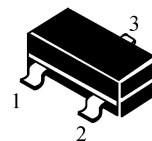
安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO., LTD

MMBT5551

SOT-23

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



■ FEATURES 特點

NPN 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}	160	Vdc
Collector Base Voltage 集電極-基極電壓	V_{CBO}	180	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	600	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) $T_A=25^{\circ}\text{C}$ 環境溫度為 25°C Derate above 25°C 超過 25°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°C 超過 25°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

MMBT5551=G1



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■ ELECTRICAL CHARACTERISTICS 電特性

(T_A=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(I _C =1.0mA _{dc} , I _B =0)	V _{(BR)CEO}	160	—	V _{dc}
Collector Base Breakdown Voltage 集電極-基極擊穿電壓(I _C =100 μA _{dc} , I _E =0)	V _{(BR)CBO}	180	—	V _{dc}
Emitter-Base Breakdown Voltage 發射極-基極擊穿電壓(I _E =10 μA _{dc} , I _C =0)	V _{(BR)EBO}	6.0	—	V _{dc}
Emitter Cutoff Current 發射極截止電流(V _{EB} =4.0V _{dc} , I _C =0)	I _{EBO}	—	50	nA _{dc}
Collector Cutoff Current 集電極截止電流(V _{CB} =120V _{dc} , I _E =0)	I _{CBO}	—	50	nA _{dc}
DC Current Gain 直流電流增益	H _{FE}			—
(I _C =1.0mA _{dc} , V _{CE} =5.0V _{dc})		80	—	
(I _C =10mA _{dc} , V _{CE} =5.0V _{dc})		80	250	
(I _C =50mA _{dc} , V _{CE} =5.0V _{dc})		30	—	
Collector-Emitter Saturation Voltage 集電極-發射極飽和壓降 (I _C =10mA _{dc} , I _B =1.0mA _{dc}) (I _C =50mA _{dc} , I _B =5.0mA _{dc})	V _{CE(sat)}	— —	0.15 0.2	V _{dc}
Base-Emitter Saturation Voltage 基極-發射極飽和壓降 (I _C =10mA _{dc} , I _B =1.0mA _{dc}) (I _C =50mA _{dc} , I _B =5.0mA _{dc})	V _{BE(sat)}	— —	1.0 1.0	V _{dc}
Current-Gain-Bandwidth Product 電流增益-帶寬乘積 (I _C =-10mA _{dc} , V _{CE} =-10V _{dc} , f=100MHz)	f _T	100	300	MHz
Output Capacitance 輸出電容 (V _{CB} =-10.0V _{dc} , I _E =0, f=1.0MHz)	C _{obo}	—	6.0	pF
Small-Signal Current Gain 小信號電流增益 (V _{CE} =-10V _{dc} , I _C =-1.0mA _{dc} , f=1.0KHz)	h _{fe}	40	200	—
Noise Figure 噪声係數 (V _{CE} =-5.0V _{dc} , I _C =-200 μA _{dc} , R _S =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.

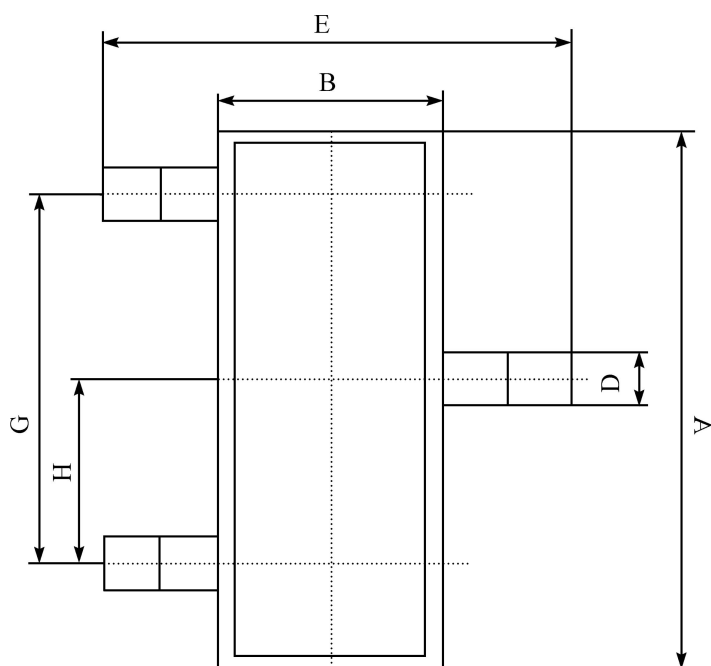
3 . ulse Width≤300us;Duty Cycle≤2.0%.



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■ DIMENSION 外形封装尺寸

單位(UNIT): mm



序號	數值及公差
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	$7 \pm 2^\circ$

