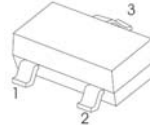


## FEATURES

### NPN General Purpose

SOT-23



1.BASE  
2.EMITTER  
3.COLLECTOR

1H

1GM

MMBTA05 Marking: 1H  
MMBTA06 Marking: 1GM

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

### Absolute Maximum Ratings 最大额定值

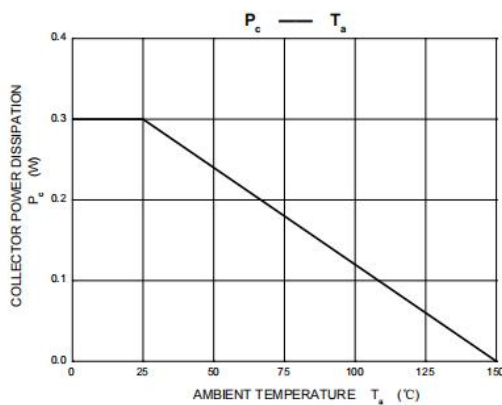
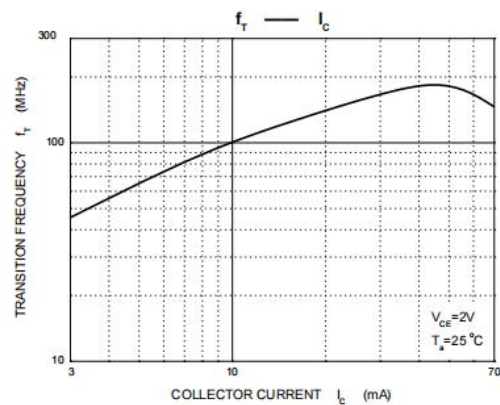
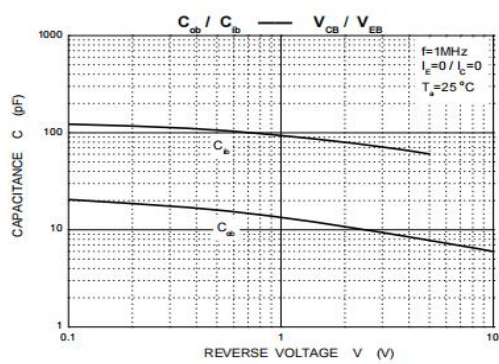
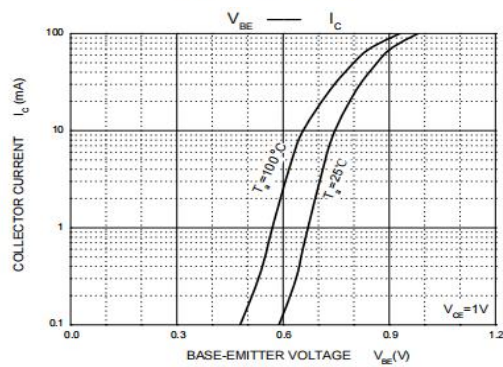
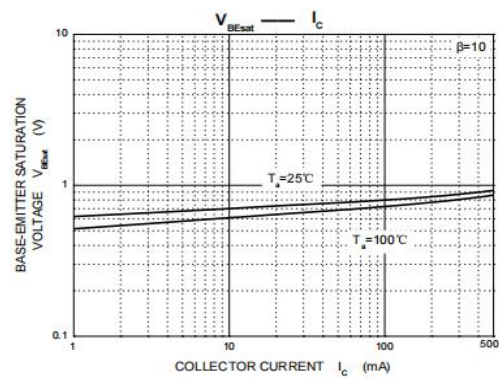
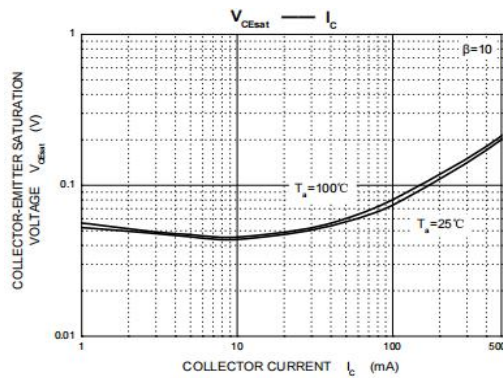
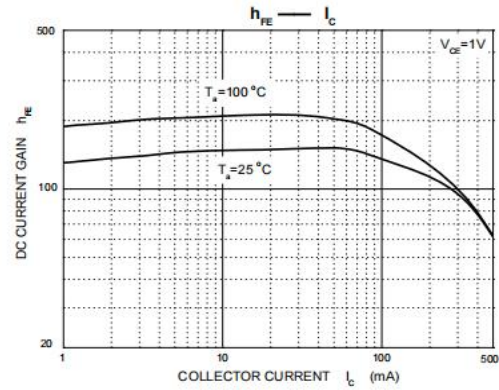
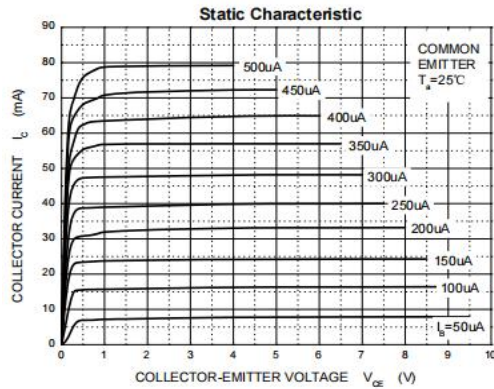
Characteristic 特性参数	Symbol 符号	Rat 额定值		Unit 单位
		MMBTA05	MMBTA06	
Collector-Base Voltage 集电极基极电压	$V_{CB0}$	60	80	V
Collector-Emitter Voltage 集电极发射极电压	$V_{CE0}$	60	80	V
Emitter-Base Voltage 发射极基极电压	$V_{EB0}$	4		V
Collector Current 集电极电流	$I_C$	500		mA
Power dissipation 耗散功率	$P_C(T_a=25^\circ\text{C})$	300		mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	417		$^\circ\text{C}/\text{W}$
Junction and Storage Temperature 结温和储藏温度	$T_J, T_{stg}$	-55to+150 $^\circ\text{C}$		

## Electrical Characteristics 电特性

( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^{\circ}\text{C}$ )

Characteristic 特性参数		Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector-Base Breakdown Voltage 集电极基极击穿电压 ( $I_C=100\mu\text{A}$ , $I_E=0$ )	MMBTA05 MMBTA06	$BV_{CBO}$	60 80	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压 ( $I_C=10\text{mA}$ , $I_B=0$ )	MMBTA05 MMBTA06	$BV_{CEO}$	60 80	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压 ( $I_E=100\mu\text{A}$ , $I_C=0$ )		$BV_{EBO}$	4	—	—	V
Collector-Base Leakage Current 集电极基极漏电流	MMBTA05( $V_{CB}=60\text{V}, I_E=0$ ) MMBTA06( $V_{CB}=80\text{V}, I_E=0$ )	$I_{CBO}$	—	—	100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流	MMBTA05( $V_{CB}=60\text{V}, I_B=0$ ) MMBTA06( $V_{CB}=60\text{V}, I_B=0$ )	$I_{CEO}$	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流( $V_{EB}=4\text{V}$ , $I_C=0$ )		$I_{EBO}$	—	—	100	nA
DC Current Gain( $V_{CE}=1\text{V}, I_C=10\text{mA}$ ) 直流电流增益( $V_{CE}=1\text{V}, I_C=100\text{mA}$ )		$H_{FE}$	100 100	—	400	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降( $I_C=100\text{mA}$ , $I_B=10\text{mA}$ )		$V_{CE(sat)}$	—	—	0.25	V
Base-Emitter Saturation Voltage 基极发射极饱和压降( $I_C=100\text{mA}$ , $I_B=10\text{mA}$ )		$V_{BE(sat)}$	—	—	1.2	V
Base-Emitter On Voltage 基极发射极导通电压( $V_{CE}=1\text{V}$ , $I_C=100\text{mA}$ )		$V_{BE(on)}$	—	—	1.2	V
Transition Frequency 特征频率( $V_{CE}=2\text{V}$ , $I_C=10\text{mA}$ )		$f_T$	100	—	—	MHz
Output Capacitance 输出电容( $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )		$C_{ob}$	—	10	—	pF

RATING AND CHARACTERISTIC CURVES



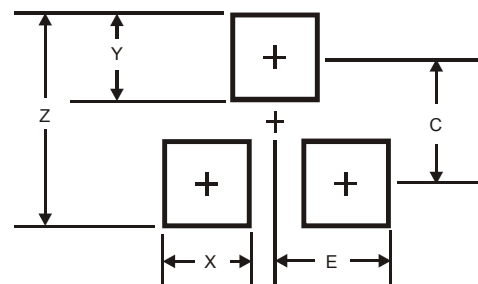
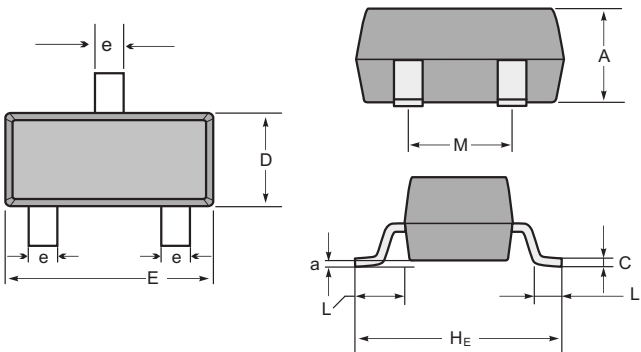
**Soldering parameters**

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C



**Package Dimensions & Suggested Pad Layout**

**SOT23**

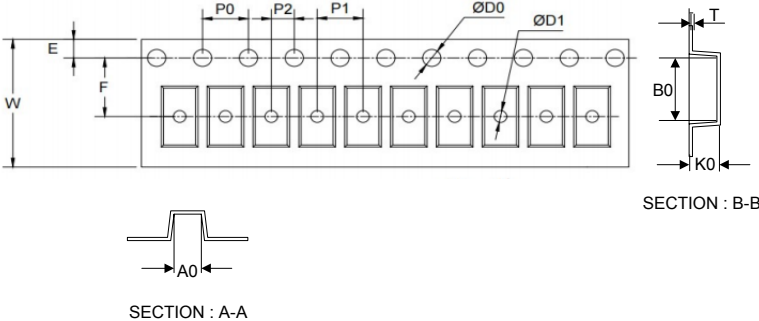
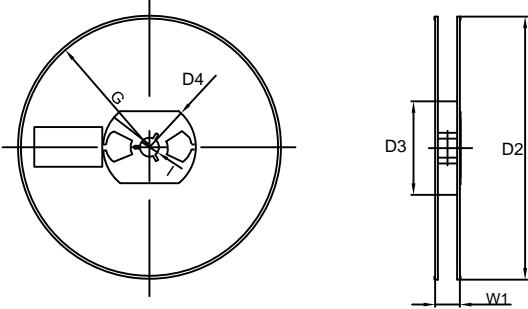


**SOT-23 mechanical data**

UNIT	A	C	D	E	He	e	M	L	L <sub>1</sub>	a	
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape	Symbol	Dimension (mm)	
	P0	4.00±0.10	
	P1	4.00±0.10	
	P2	2.00±0.10	
	D0	1.55±0.10	
	D1	1.05±0.10	
	E	1.55±0.10	
	F	3.60±0.10	
	W	8.00±0.10	
	A0	3.80±0.20	
	B0	3.25±0.20	
	K0	1.45±0.10	
	T	0.25±0.05	
	<p>7" Reel</p> 	D2	178.0±3.0
		D3	55Min.
		D4	R24.0±3.0
G		R82.0±3.0	
I		13.0±2.0	
W1		11.0±3.0	
Quantity: 3000PCS			