

# MSKSEMI 美森科

SEMICONDUCTOR



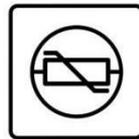
ESD



TVS



TSS



MOV



GDT



PLED

## MMBTA44-MS

Product specification

TRANSISTOR ((NPN))

**FEATURES**

- High Collector-Emitter Voltage
- Complement to MMBTA94-MS

**Reference News**

PACKAGE OUTLINE	MARKING
 <p>1. BASE 2. EMITTER 3. COLLECTOR</p>	
SOT-23	

**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

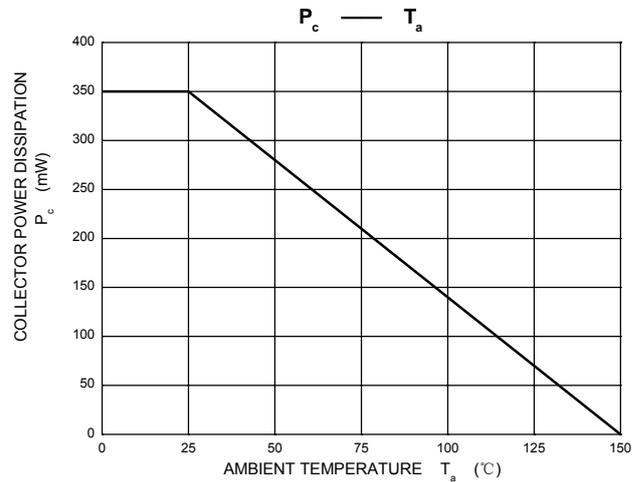
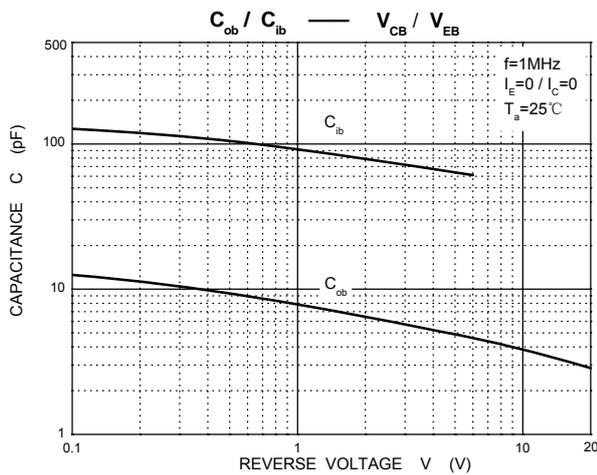
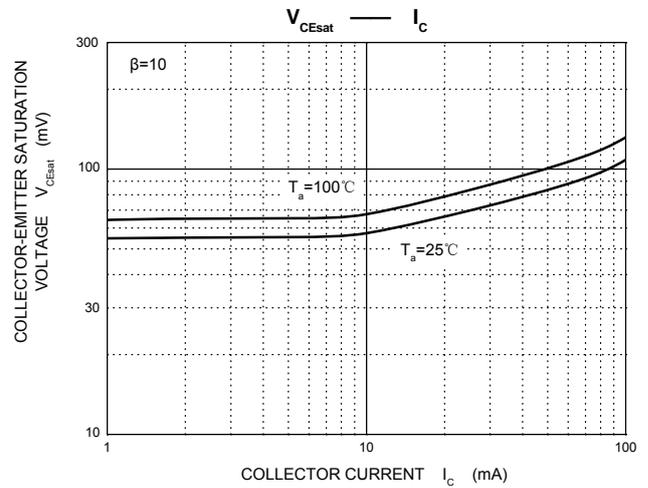
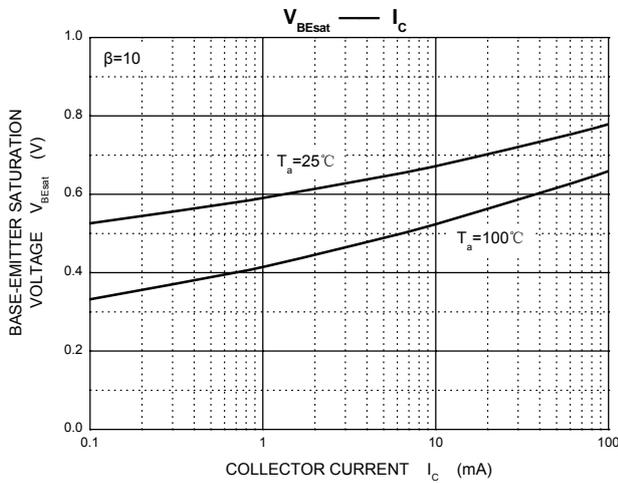
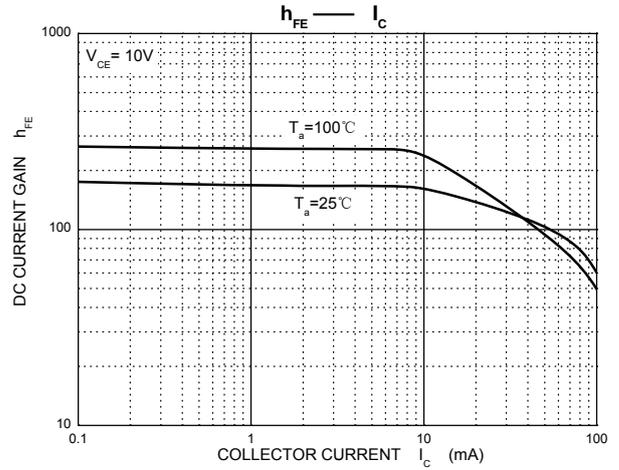
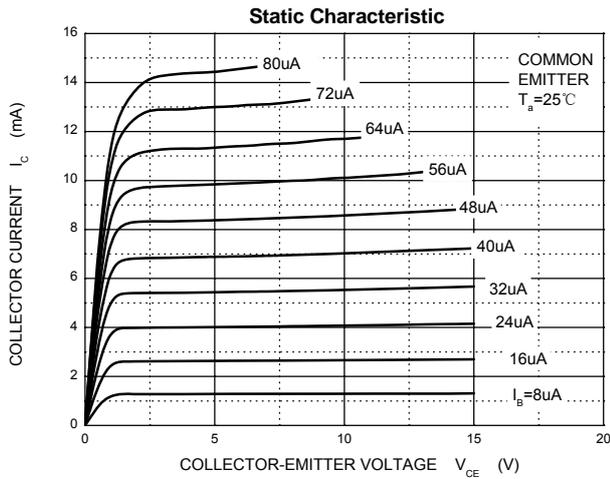
Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	400	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>c</sub>	Collector Current-Continuous	200	mA
I <sub>CM</sub>	Collector Current -Pulsed	300	mA
P <sub>C</sub>	Collector Power Dissipation	350	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	357	°C/W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55 ~ +150	°C

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

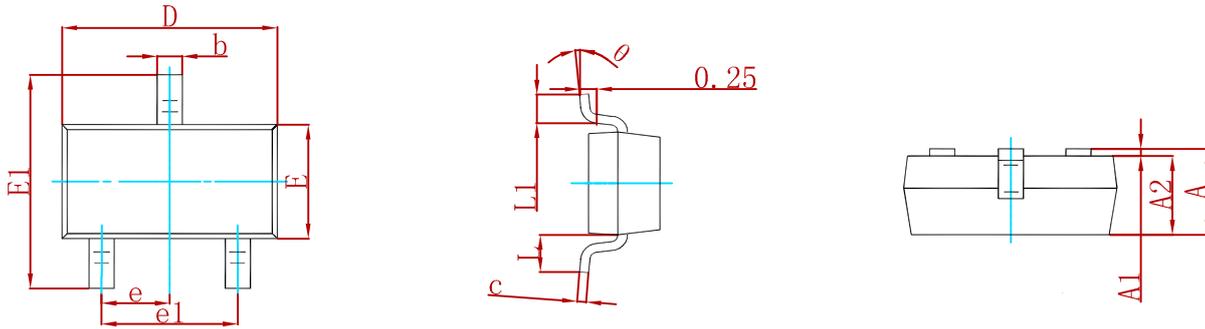
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>c</sub> =100μA, I <sub>E</sub> =0	400			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub> *	I <sub>c</sub> =1mA, I <sub>B</sub> =0	400			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>c</sub> =0	6			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =400V, I <sub>E</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>c</sub> =0			0.1	μA
DC current gain	h <sub>FE(1)</sub> *	V <sub>CE</sub> =10V, I <sub>c</sub> =1mA	40			
	h <sub>FE(2)</sub> *	V <sub>CE</sub> =10V, I <sub>c</sub> =10mA	50		200	
	h <sub>FE(3)</sub> *	V <sub>CE</sub> =10V, I <sub>c</sub> =50mA	45			
	h <sub>FE(4)</sub> *	V <sub>CE</sub> =10V, I <sub>c</sub> =100mA	40			
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub> *	I <sub>c</sub> =1mA, I <sub>B</sub> =0.1mA			0.4	V
	V <sub>CE(sat)2</sub> *	I <sub>c</sub> =10mA, I <sub>B</sub> =1mA			0.5	V
	V <sub>CE(sat)3</sub> *	I <sub>c</sub> =50mA, I <sub>B</sub> =5mA			0.75	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub> *	I <sub>c</sub> =10mA, I <sub>B</sub> =1mA			0.75	V
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz			7	pF
Emitter input capacitance	C <sub>ib</sub>	V <sub>EB</sub> =0.5V, I <sub>c</sub> =0, f=1MHz			130	pF

\*Pulse test: pulse width ≤300μs, duty cycles ≤ 2.0%.

Typical Characteristics

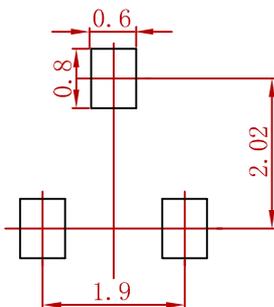


**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

**Suggested Pad Layout**



Note:  
 1. Controlling dimension: in millimeters.  
 2. General tolerance: ± 0.05mm.  
 3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
MMBTA44-MS	SOT-23	3000

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