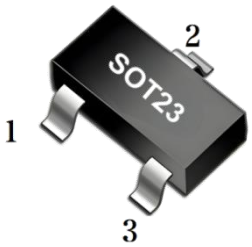
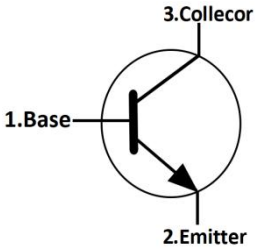
MMBTA44

NPN SILICON TRANSISTOR

FEATURES

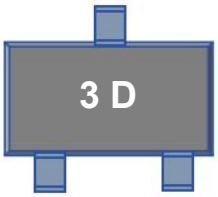
* High Collector-Emitter Voltage
* Complement to MMBTA94





MARKING

Type Code: Marking: 3 D



ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise specified)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-base voltage	400	V
V_{CEO}	Collector-emitter voltage	400	V
V_{EBO}	Emitter-base voltage	6	V
I_C	Collector Current-Continuous	200	mA
I_{CM}	Collector Current -Pulsed	300	mA
P_C	Collector Power Dissipation	350	mW
T_j	Junction Temperature	150	°C
Tstg	Storage Temperature	-55~150	°C
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	357	°C/W

ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	400		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=1mA,I_B=0	400		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	6		V
Collector cutoff current	I_{CBO}	V_{CB}=400V,I_E=0		0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V,I_C=0		0.1	μA
DC Current Gain	h_{FE1}*	V_{CE}=10V,I_C=1mA	40		
	h_{FE2}*	V_{CE}=10V,I_C=10mA	50	200	
	h_{FE3}*	V_{CE}=10V,I_C=50mA	45		
	H_{FE4}*	V_{CE}=10V,I_C=100mA	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=1mA,I_B=0.1mA		0.4	V
	$V_{CE(sat)}$*	I_C=10mA,I_B=1mA		0.5	V
	$V_{CE(sat)}$*	I_C=50mA,I_B=5mA		0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$*	I_C=10mA,I_B=1mA		0.75	V

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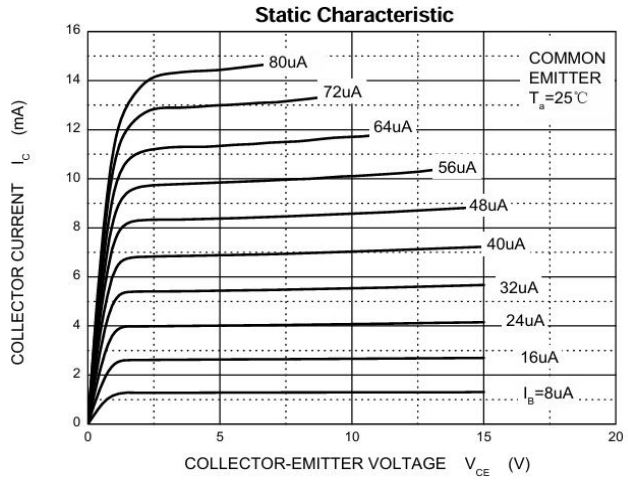
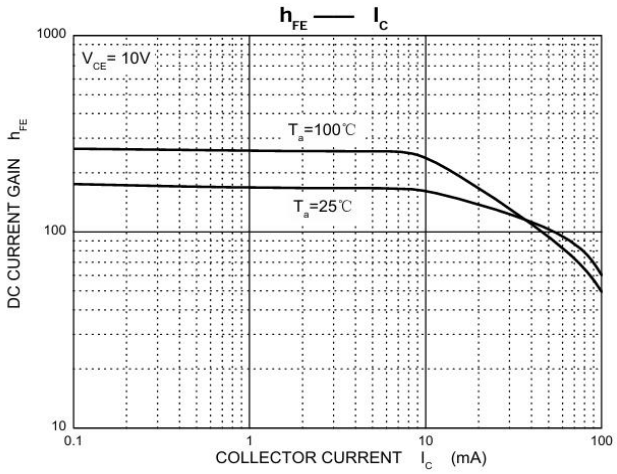
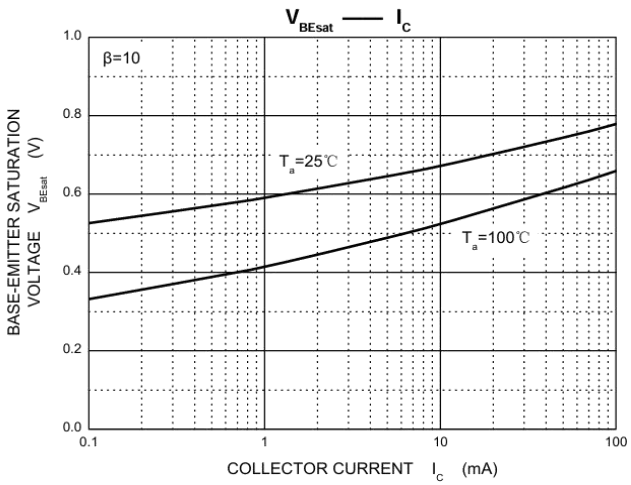
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
Collector output capacitance	C_{ob}	V_{CB}=20V, I_E=0, f=1MHz		7	pF
Emitter input capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz		130	pF
Transition frequency	f_T	V_{CE}=20V, I_C=10mA,f=30MHz	50		MHz

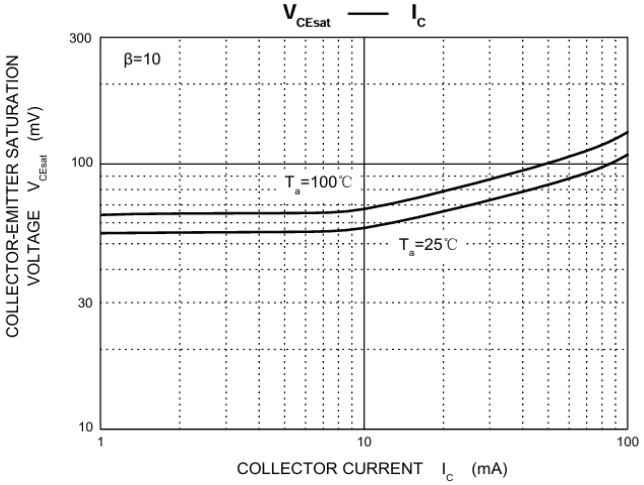
*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.

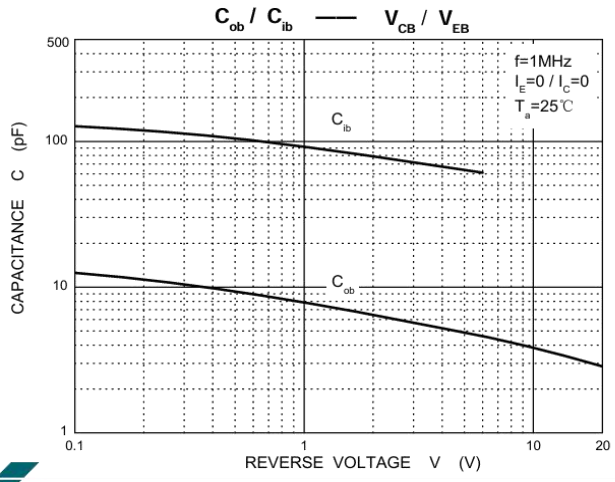
■ TYPICAL CHARACTERISTICS

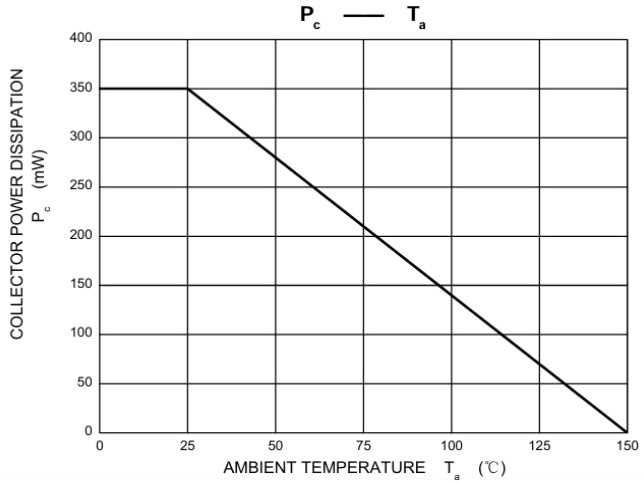












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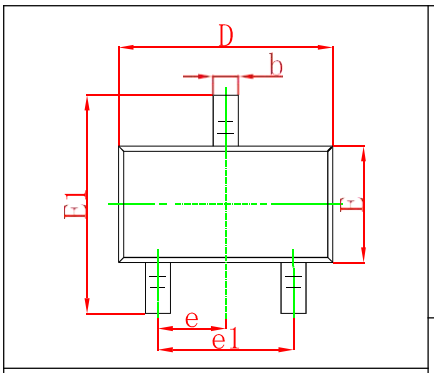
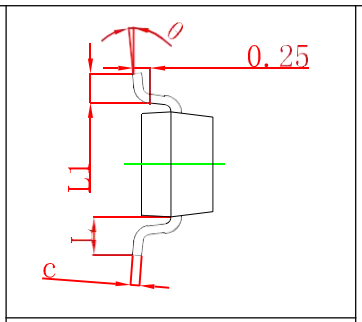
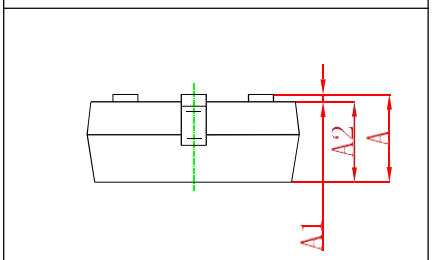
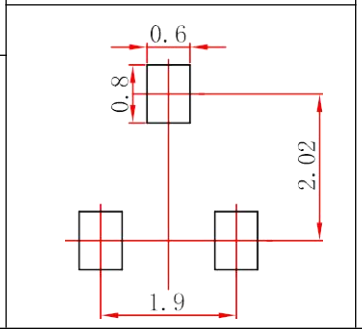
■ SOT23 PACKAGE OUTLINE DIMENSIONS









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°

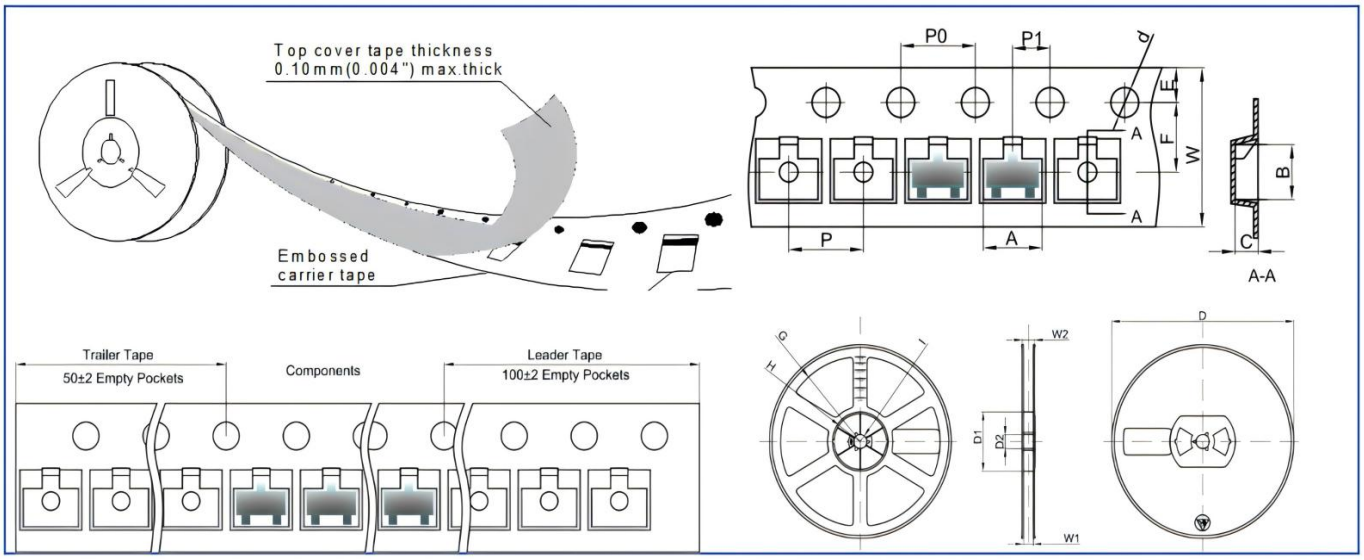
Note:

1.Controlling dimension:in millimeters.

2.General tolerance:±0.05mm.

3.The pad layout is for reference purposes only.

■ REEL PACKING



Dimensions are in millimeter										
PKG TYPE	A	B	C	d	E	F	Po	P	P1	W
SOT-23	3.15	2.77	1.22	Φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
Reel Optiom	D	D1	D2	G	H	I	W1	W2	Q.TY PER REEL	
7" Dia	Φ178.0	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30	3000PCS	
13"Dia	φ330.0	/	13.00	/	/	R6.50	9.50	12.30	10000PCS	