

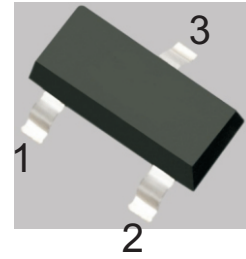
MMBTA42

NPN TRANSISTOR

FEATURES

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary to MMBTA92 (PNP)

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

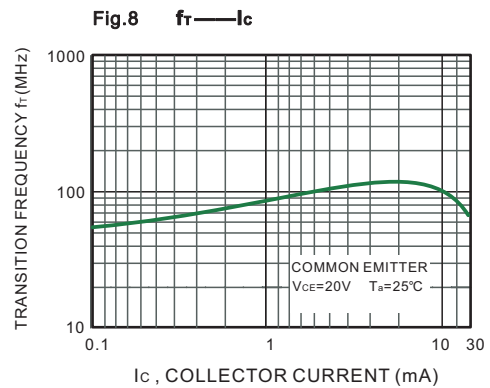
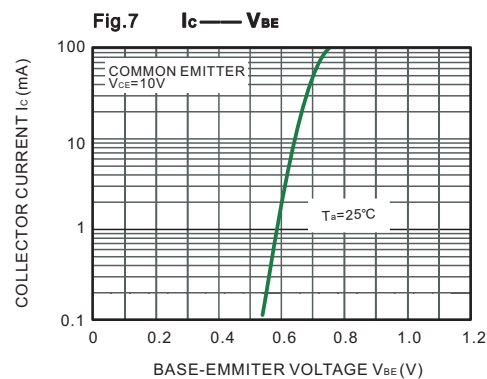
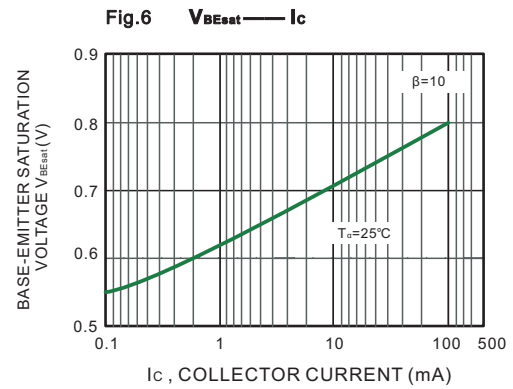
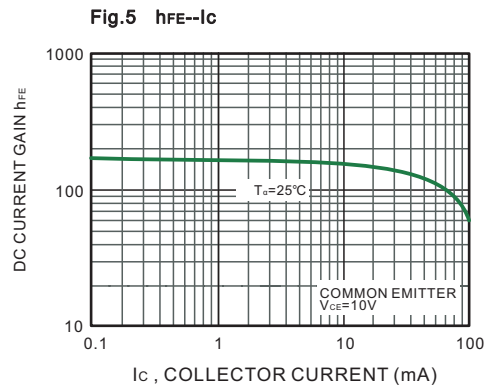
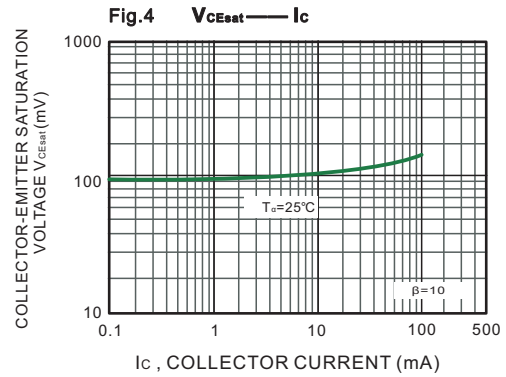
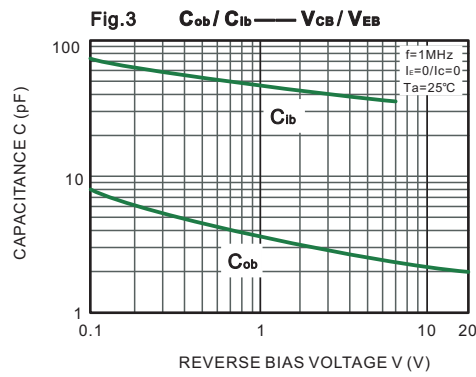
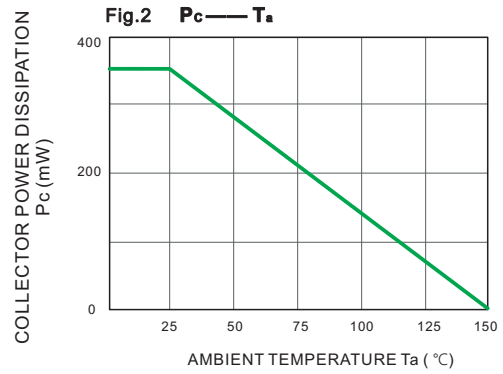
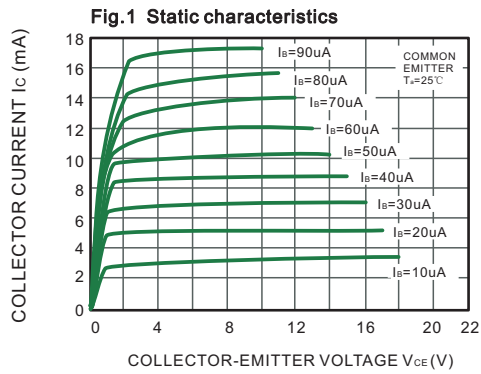
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current — Continuous	I_C	0.3	A
Collector Current-Peak	I_{CM}	0.5	A
Collector Power Dissipation	P_C	0.35	W
Thermal Resistance, junction to Ambient	R_{thJA}	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

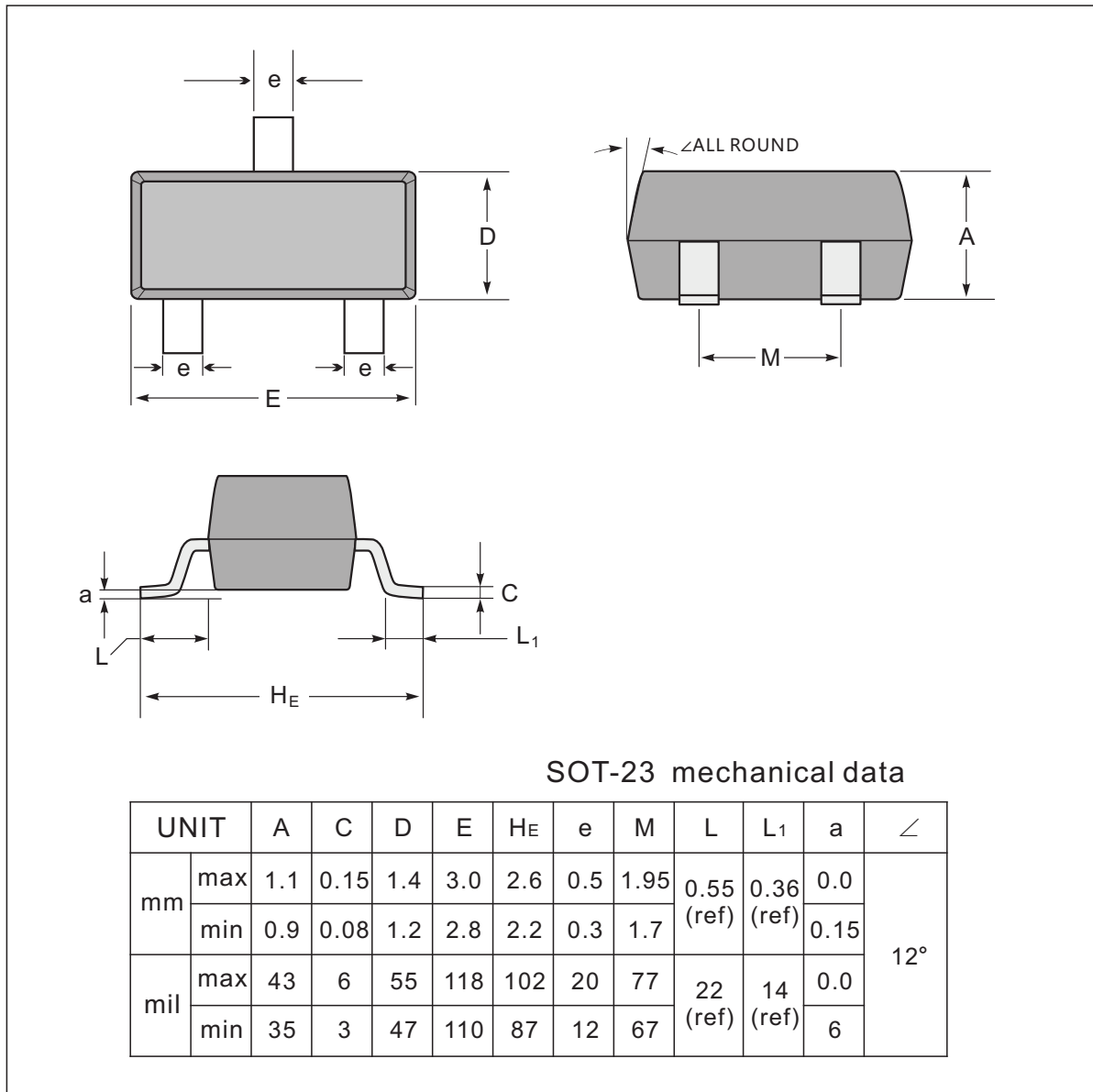
ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0$	300		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, I_B = 0$	300		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu A, I_C = 0$	5		V
Collector cut-off current	I_{CBO}	$V_{CB} = 200V, I_E = 0$		0.25	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$		0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = 10V, I_C = 1mA$	60		
	$h_{FE(2)}$	$V_{CE} = 10V, I_C = 10mA$	100	200	
	$h_{FE(3)}$	$V_{CE} = 10V, I_C = 30mA$	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20mA, I_B = 2mA$		0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20mA, I_B = 2mA$		0.9	V
Transition frequency	f_T	$V_{CE} = 20V, I_C = 10mA, f=30MHz$	50		MHz

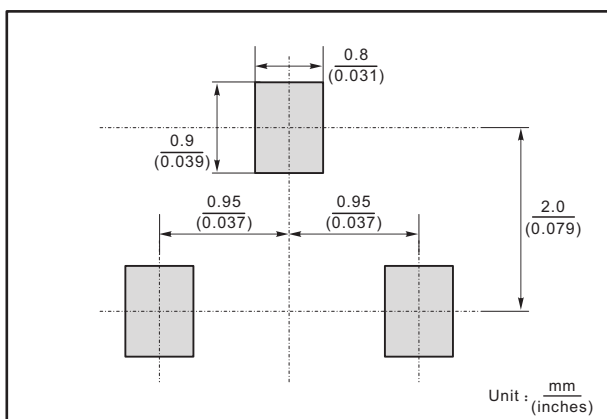
TYPICAL CHARACTERISTICS



SOT-23 Package Outline Dimensions



The recommended mounting pad size

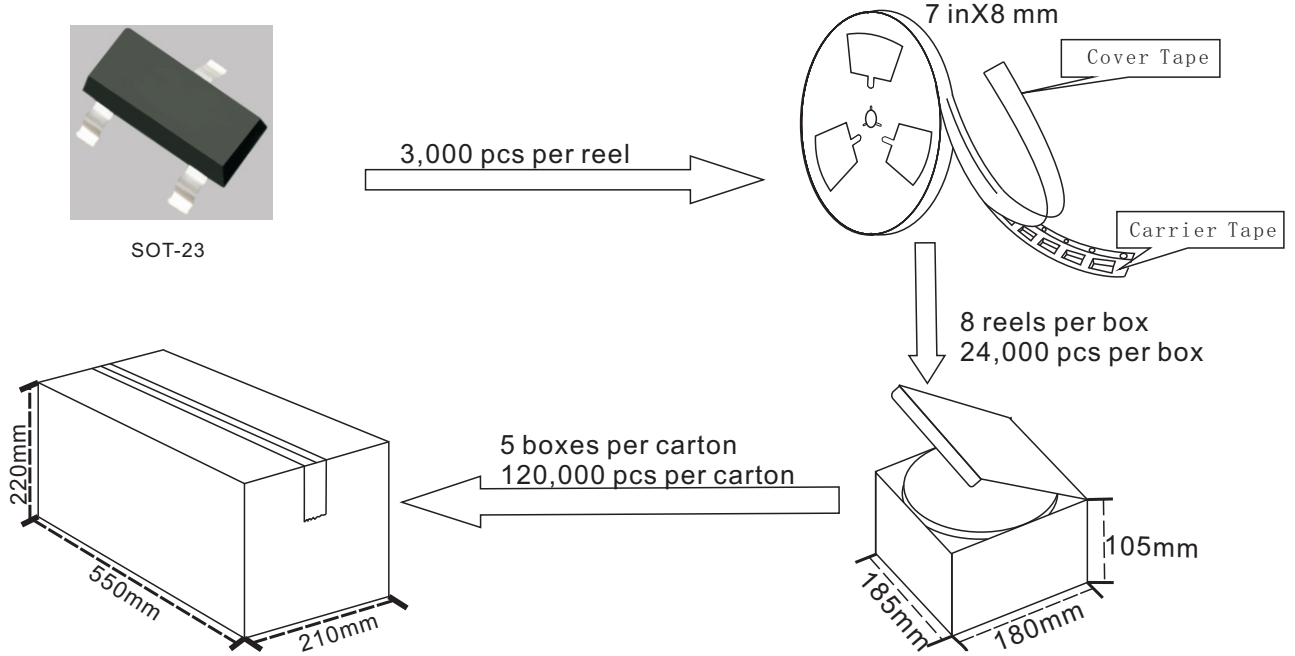


Marking

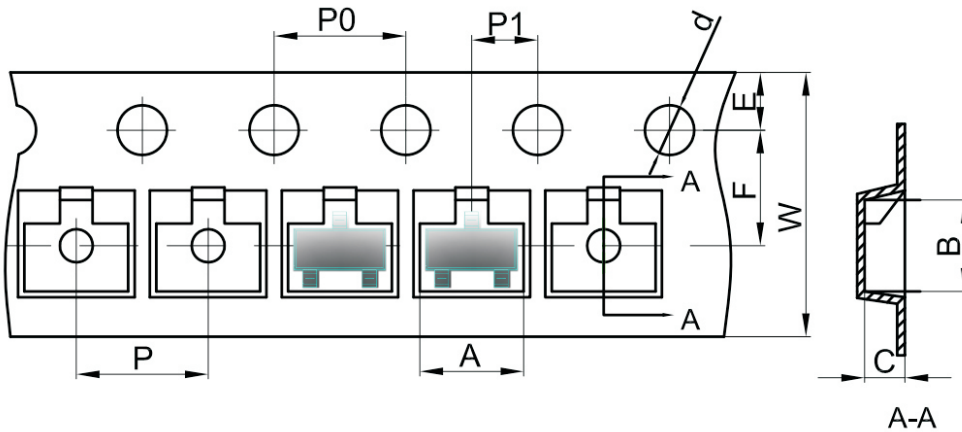
Type number	Marking code
MMBTA42	1D

SOT-23 Packing

1. The method of packaging and dimension are shown as below figure. (Dimension in mm)



SOT-23 Embossed Carrier Tape



Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer

