

SOT-23 Plastic-Encapsulate Transistors



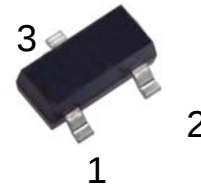
MMBTA92 (PNP)

Features:

- ☐ High breakdown voltage
- ☐ Low collector-emitter saturation voltage
- ☐ Complementary to MMBTA42 (NPN)

Marking:2D

SOT-23



- 1.Base (B)
- 2. Emitter (E)
- 3.Collector (C)

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

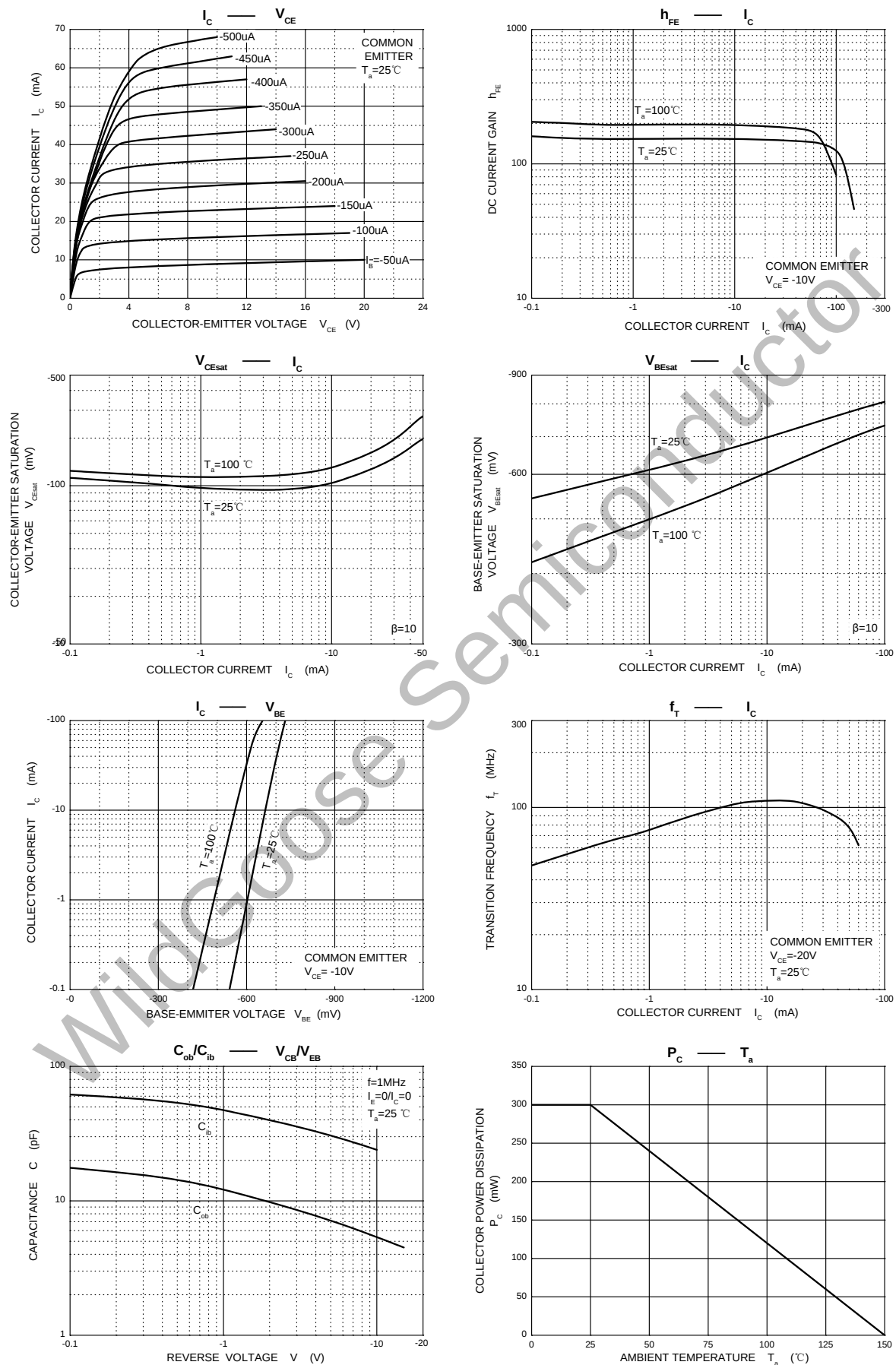
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-300	V
V_{CEO}	Collector-Emitter Voltage	-300	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-200	mA
I_{CM}	Collector Current -Pulsed	-500	mA
P_C	Collector Power Dissipation	300	mW
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

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

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Typical Characteristics



TEST DATA						
TEST CONDITION	ICBO≤-250nA Vcb=-200V	IEBO≤-100nA Veb=-4V	BVCBO≥- 300V Ic=-100uA	BVCEO≥- 300V Ic=-1mA	HFE=100- 300 Vce=1V	Vcesat≤-0.5V Vce=3V Ic=-20mA
NO.	ICBO(nA)	IEBO(nA)	BVCBO(V)	BVCEO(V)	HFE	Vcesat(mV)
1	-10.685	-0.396	-398.180	-398.640	139.460	-83.352
2	-11.356	-0.335	-393.340	-395.960	142.360	-84.449
3	-11.326	-0.335	-400.590	-402.750	128.830	-84.022
4	-13.524	-0.244	-383.590	-385.880	148.290	-79.876
5	-11.814	-0.305	-396.020	-398.430	148.820	-82.955
6	-11.997	-0.244	-396.600	-399.100	145.720	-85.516
7	-11.509	-0.092	-389.020	-389.650	149.230	-79.907
8	-12.058	-0.092	-386.490	-389.350	142.740	-89.937
9	-12.150	-0.213	-382.500	-385.120	144.050	-87.163
10	-11.692	-0.305	-408.630	-405.670	141.990	-82.681
11	-11.814	-0.152	-380.400	-382.620	149.840	-79.510
12	-11.784	-0.366	-393.800	-397.330	152.920	-86.156
13	-10.623	-0.366	-410.390	-411.150	139.100	-85.669
14	-11.020	-0.335	-390.170	-391.660	145.650	-81.980
15	-11.723	-0.335	-384.540	-377.110	140.660	-77.315
16	-11.570	-0.274	-387.070	-389.810	141.080	-85.882
17	-11.600	-0.305	-401.410	-404.210	137.590	-84.906
18	-11.265	-0.427	-406.860	-407.680	135.210	-84.541
19	-11.845	-0.366	-395.620	-390.360	143.360	-79.693
20	-11.387	-0.274	-397.330	-399.030	143.800	-83.748
MIN	-13.524	-0.427	-410.390	-411.150	128.830	-89.937
MAX	-10.623	-0.092	-380.400	-377.110	152.920	-77.315
X	-11.637	-0.288	-394.128	-395.076	143.035	-83.463