MMBTA92

Small signal PNP transistor

Datasheet - production data

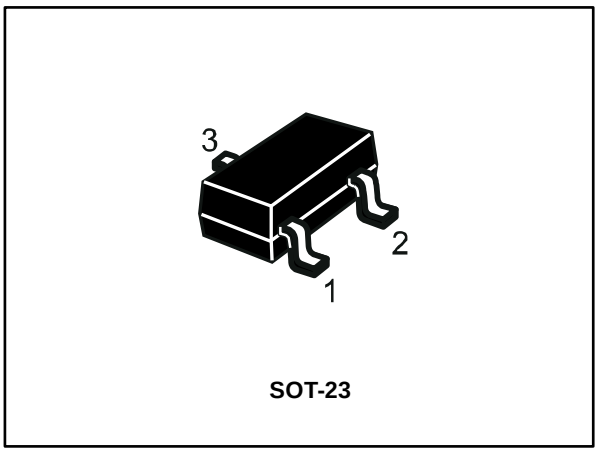
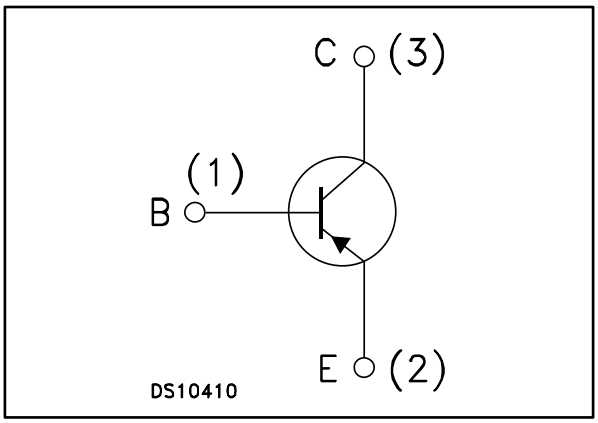


Figure 1: Internal schematic diagram



Features

- Miniature SOT-23 plastic package for surface mounting circuits
- Tape and reel packaging
- The NPN complementary type is MMBTA42

Applications

- Video amplifier circuits (rgb cathode current control)
- Telephone wireline interface (hook switches, dialer circuits)

Description

The device is manufactured in Epitaxial Planar technology.

Table 1: Device summary

Order code	Marking	Package	Packaging
MMBTA92	A92	SOT-23	Tape and reel

Contents

1 Absolute maximum ratings

(T_{case} = 25°C unless otherwise specified)

Table 2: Absolute maximum rating

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage (I_E = 0)	-300	V
V_{CEO}	Collector-emitter voltage (I_B = 0)	-300	V
V_{EBO}	Emitter-base voltage (I_C = 0)	-5	V
I_C	Collector current	-0.5	A
I_{CM}	Collector peak current (t_P < 5ms)	-0.6	A
P_{tot}	Total dissipation at T_{amb} = 25°C	350	mW
T_{stg}	Storage temperature	-65 to 150	°C
T_J	Max. operating junction temperature	150	°C

Table 3: Thermal data

Symbol	Parameter	Value	Unit
$R_{thj\text{-}amb}$	Thermal resistance junction-ambient max (1)	357.1	°C/W

Notes:

(1)Device mounted on PCB area of 1 cm^2.

2 Electrical characteristics

(T_{case} = 25°C unless otherwise specified)

Table 4: Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector cut-off current (I_E =0)	V_{CB} = -200 V			-100	vA
$V_{(BR)CBO}$	Collector-base breakdown voltage (I_E =0)	I_C = -100 µA	-300			V
$V_{(BR)CEO}$ (1)	Collector-emitter breakdown voltage (I_B =0)	I_C = -1 mA	-300			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage (I_C =0)	I_C = -100 µA	-5			V
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C = -20 mA, I_B = -2 mA			-0.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage	I_C = -20 mA, I_B = -2 mA			-0.9	V
h_{FE}	DC current gain	I_C = -1 mA; V_{CE} = -10 V	25			
		I_C = -10 mA; V_{CE} = -10 V	40			
		I_C = -30 mA, V_{CE} = -10 V	40			
f_T	Transition frequency	I_C = -10 mA; V_{CE} = -20 V; f = 100 MHz	50			MHz
C_{CBO}	Collector-base capacitance (I_E = 0)	V_{CB} = -20 V, f = 1 MHz		6		pF

Notes:

(1)Pulse test: pulse duration = 300 µs, duty cycle ≤ 1.5 %

3 Package mechanical data

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3.1 SOT-23 mechanical data

Figure 2: SOT-23 mechanical drawing

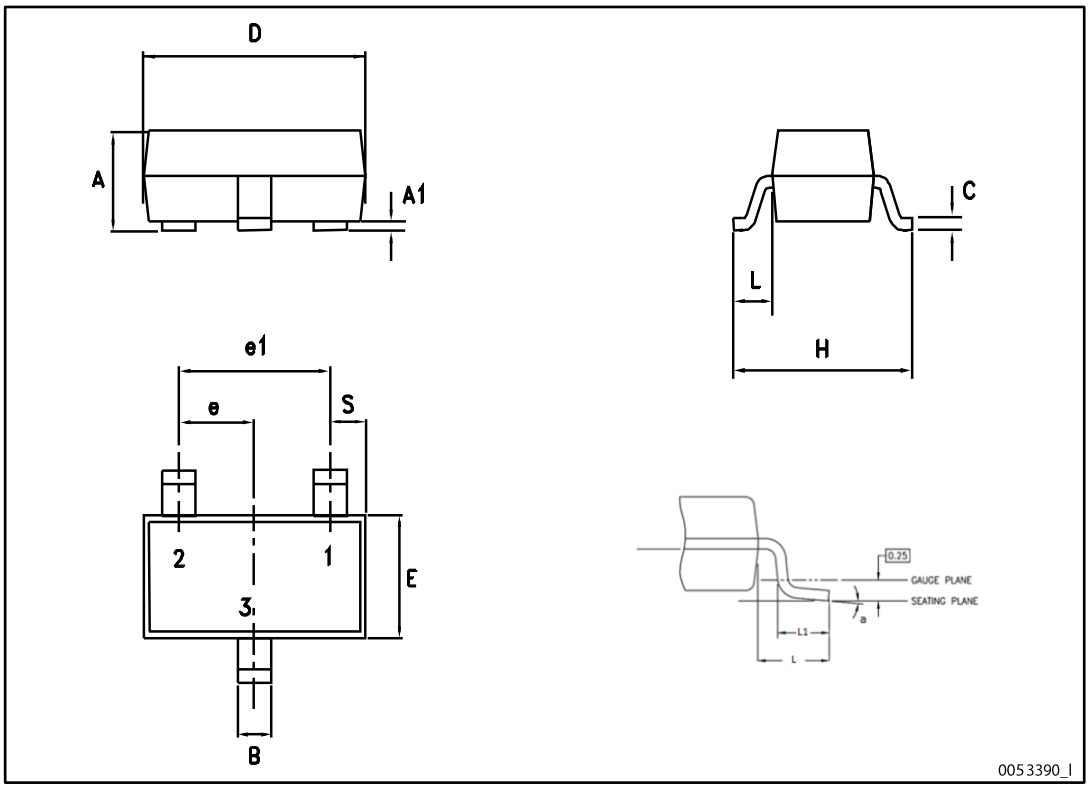
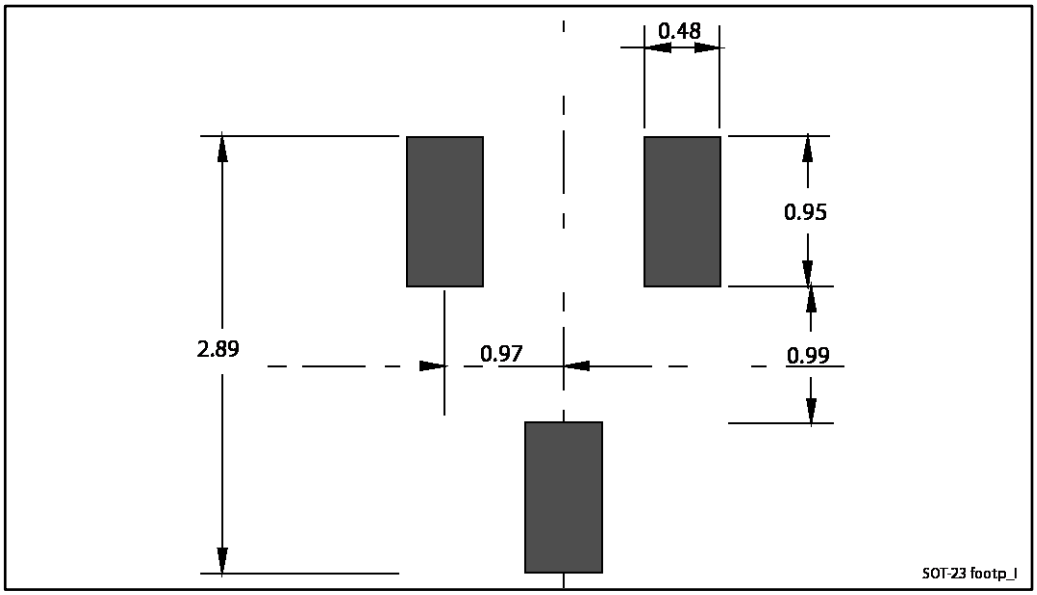


Table 5: SOT-23 mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	0.89		1.40
A1	0		0.10
B	0.30		0.51
C	0.085		0.18
D	2.75		3.04
e	0.85		1.05
e1	1.70		2.10
E	1.20		1.75
H	2.10		3.00
L		0.60	
S	0.35		0.65
L1	0.25		0.55
a	0°		8°

Figure 3: SOT-23 recommended footprint



Dimensions are in mm.

4 Revision history

Table 6: Document revision history

Date	Revision	Changes
06-Jan-2003	2	
08-Nov-2007	3	Updated mechanical data.
07-May-2014	4	Updated *Section 3: "Package mechanical data"*.

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