

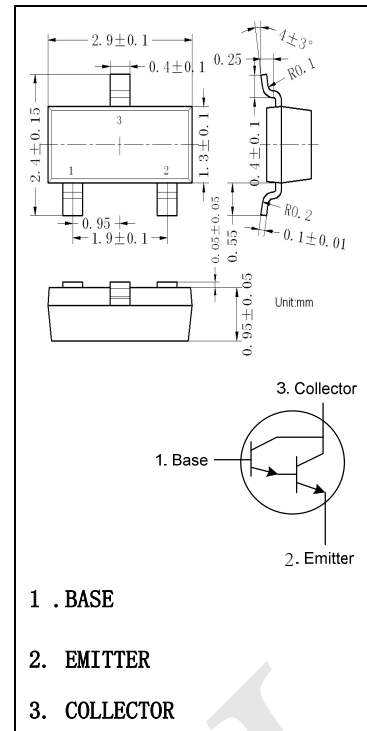
# SOT-23 Plastic-Encapsulate Transistors

## MMBTA29

NPN EPITAXIAL SILICON TRANSISTOR

■ FEATURES

\* High DC current gain



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

SYMBOL	PARAMETER	RATINGS	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	100	V
V <sub>CES</sub>	Collector-Emitter Voltage	100	V
V <sub>EBO</sub>	Emitter-Base Voltage	12	V
I <sub>C</sub>	Collector Current-Continuous	500	mA
P <sub>D</sub>	Power Dissipation	350	mW
T <sub>J</sub>	Junction Temperature	-55 ~ +150	°C
T <sub>STG</sub>	Storage Temperature	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	RATINGS	UNIT
θ <sub>JA</sub>	Junction to Ambient	357	°C/W

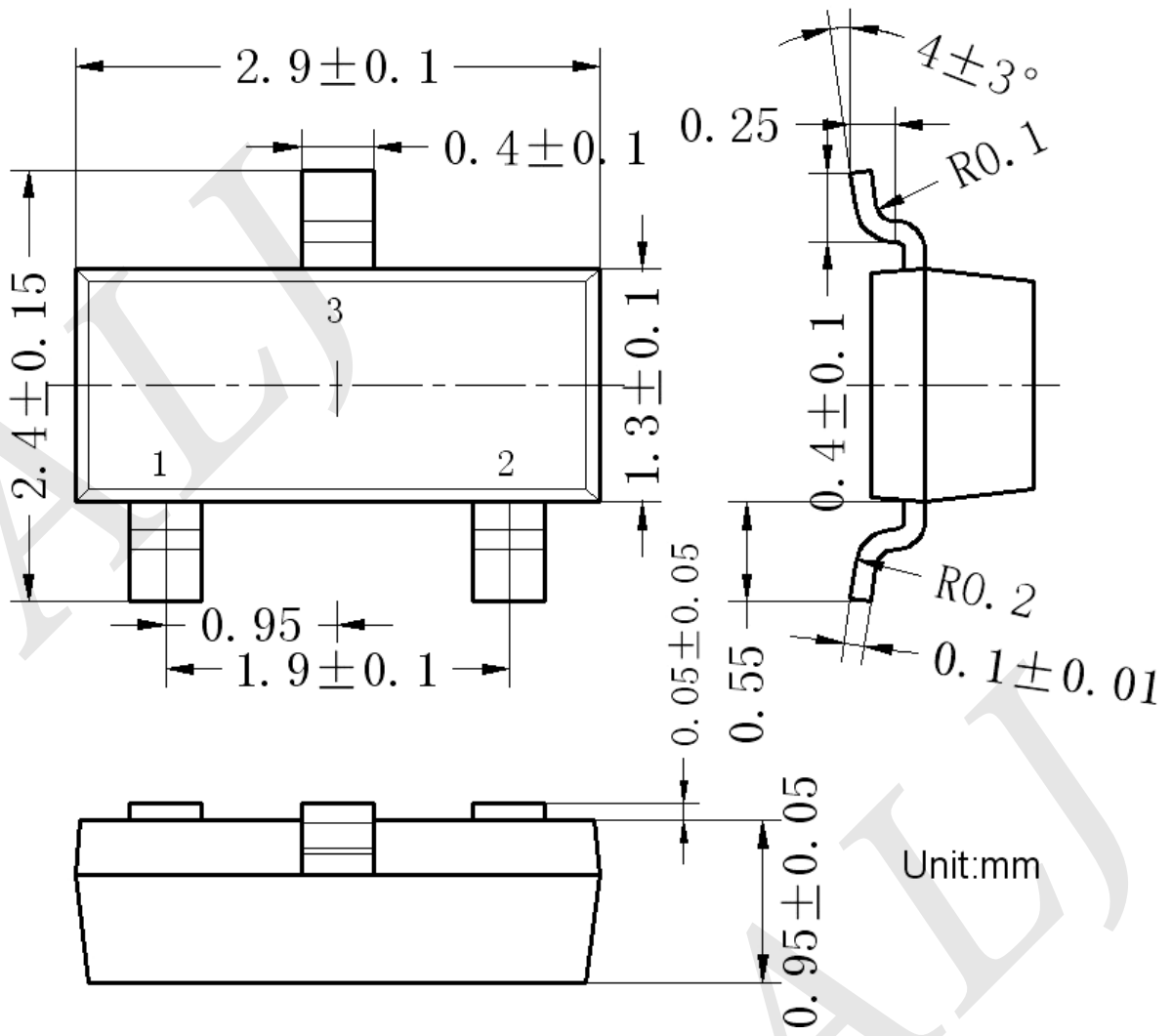
Note: The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.

■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise noted)

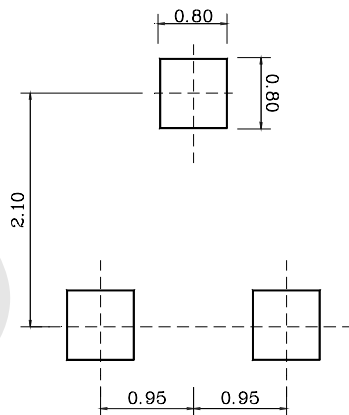
SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
BV <sub>CES</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> =100μA, V <sub>BE</sub> =0	100			V
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> =100μA, I <sub>E</sub> =0	100			V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> =10μA, I <sub>C</sub> =0	12			V
I <sub>CBO</sub>	Collector Cut-Off Current	V <sub>CB</sub> =80V, I <sub>E</sub> =0			100	nA
I <sub>CES</sub>		V <sub>CE</sub> =80V, V <sub>BE</sub> =0			500	nA
I <sub>EBO</sub>	Emitter Cut-Off Current	V <sub>EB</sub> =10V, I <sub>C</sub> =0			100	nA
<b>ON CHARACTERISTICS (Note 1)</b>						
h <sub>FE</sub>	DC Current Gain	V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA	10000			
		V <sub>CE</sub> =5.0V, I <sub>C</sub> =100mA	10000			
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> =10mA, I <sub>B</sub> =0.01mA			1.2	V
		I <sub>C</sub> =100mA, I <sub>B</sub> =0.1mA			1.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> =100mA, V <sub>CE</sub> =5.0V			2.0	V

Note: Pulse Test: Pulse Width≤300μs, Duty Cycles≤2.0%.

# Outline Dimension

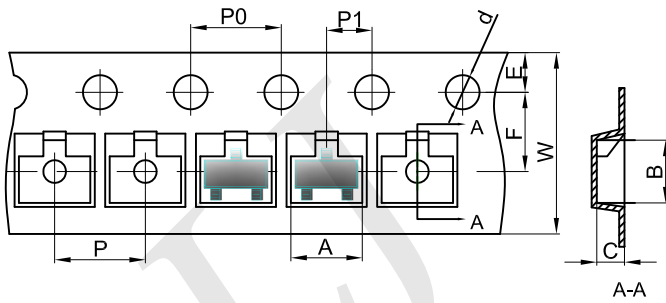


Recommend PCB solder land [Unit: mm]



# SOT-23 Tape and Reel

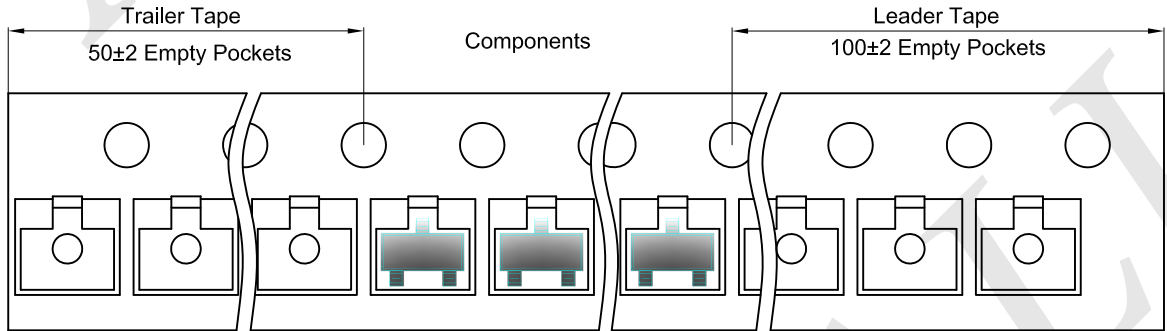
## SOT-23 Embossed Carrier Tape



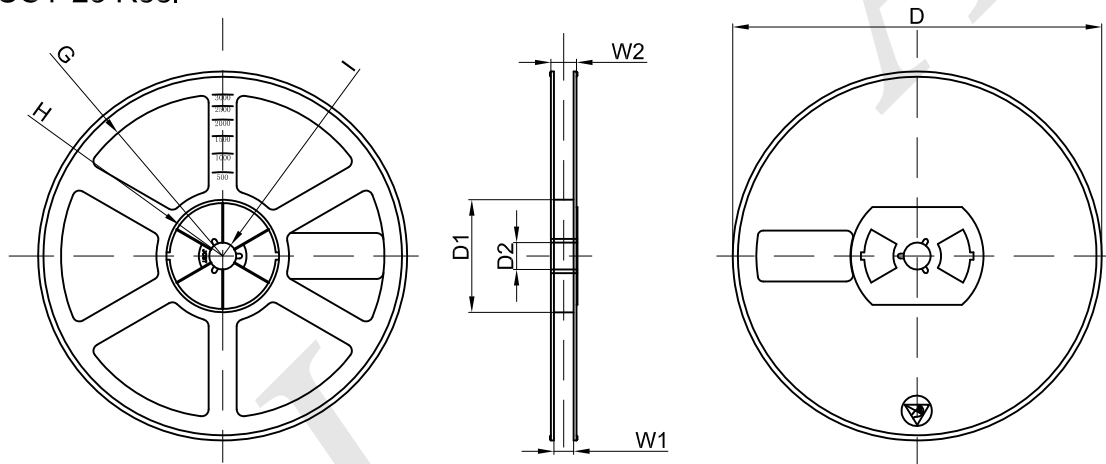
**Packaging Description:**  
 SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

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



## SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	