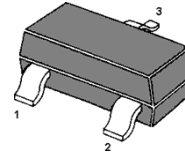


**MMBTSC1621** NPN Silicon Epitaxial Planar Switching Transistor

1.Base 2.Emitter 3.Collector  
SOT-23 Plastic Package

**Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )**

	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	40	V
Collector Emitter Voltage	$V_{CES}$	40	V
Collector Emitter Voltage	$V_{CEO}$	15	V
Emitter Base Voltage	$V_{EBO}$	4.5	V
Collector Current	$I_C$	500	mA
Power Dissipation	$P_{tot}$	200	mW
Thermal Resistance Form junction to ambient in free air	$R_{thj-a}$	625	K/W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +150	$^\circ\text{C}$

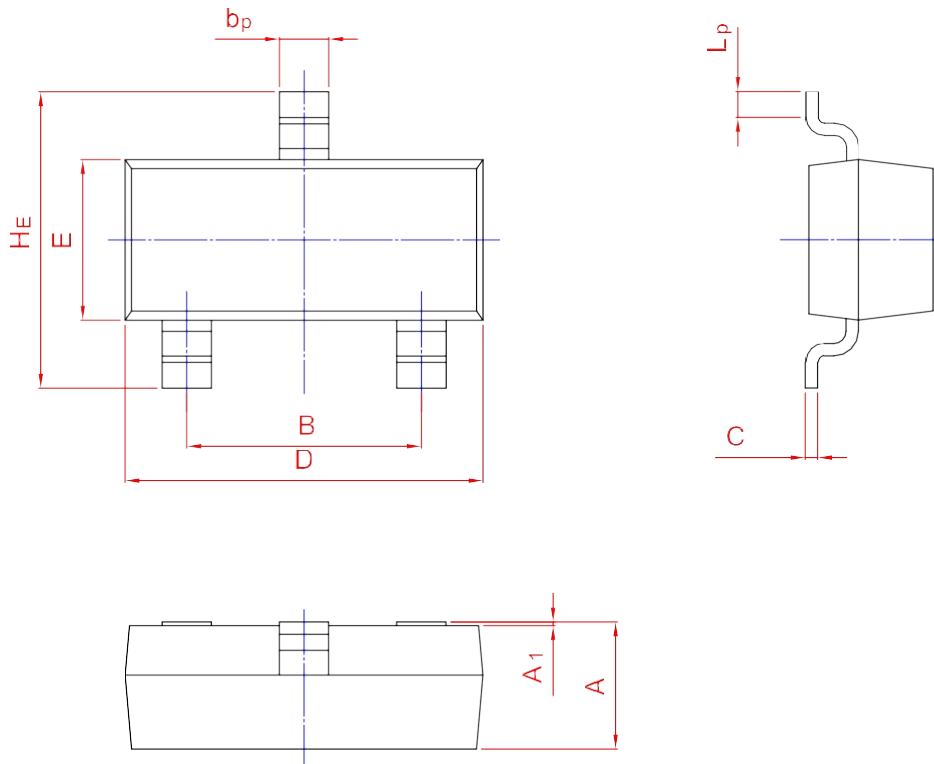
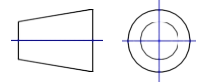
Characteristics at  $T_{amb}=25\text{ }^{\circ}\text{C}$ 

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $V_{CE}=1\text{V}$ , $I_C=10\text{mA}$	$h_{FE}$	40	-	120	-
at $V_{CE}=1\text{V}$ , $I_C=10\text{mA}$ , $T_a = -55\text{ }^{\circ}\text{C}$	$h_{FE}$	20	-	-	-
at $V_{CE}=2\text{V}$ , $I_C=100\text{mA}$	$h_{FE}$	20	-	-	-
Small Signal Current Gain					
at $V_{CE}=10\text{V}$ , $I_C=1\text{mA}$ , $f=100\text{MHz}$	$h_{fe}$	5	-	-	-
Collector Cutoff Current					
at $V_{CB}=20\text{V}$	$I_{CBO}$	-	-	0.4	$\mu\text{A}$
at $V_{CB}=20\text{V}$ , $T_j=125\text{ }^{\circ}\text{C}$		-	-	30	$\text{mA}$
Collector Saturation Voltage					
at $I_C=10\text{mA}$ , $I_B=1\text{mA}$	$V_{CE(sat)}$	-	-	0.25	V
Base Saturation Voltage					
at $I_C=10\text{mA}$ , $I_B=1\text{mA}$	$V_{BE(sat)}$	0.7	-	0.85	V
Collector Emitter Breakdown Voltage					
at $I_C=10\text{mA}$	$V_{(BR)CEO}$	15	-	-	V
Collector Emitter Breakdown Voltage					
at $I_C=10\text{mA}$	$V_{(BR)CES}$	40	-	-	V
Collector Base Breakdown Voltage					
at $I_C=10\text{mA}$	$V_{(BR)CBO}$	40	-	-	V
Emitter Base Breakdown Voltage					
at $I_E=10\text{mA}$	$V_{(BR)EBO}$	4.5	-	-	V
Output Capacitance					
at $V_{CB}=5\text{V}$ , $f=1\text{MHz}$	$C_{ob}$	-	-	4	$\text{pF}$
Storage Time					
at $I_{Con}=I_{Bon} = -I_{Boff}=10\text{mA}$	$t_s$	-	5	13	ns
Turn-on Time					
at $I_C=10\text{mA}$ , $I_{Bon}=3\text{mA}$ , $V_{CC}=3\text{V}$	$t_{on}$	-	8	12	ns
Turn-off Time					
at $I_C=10\text{mA}$ , $I_{Bon}=3\text{mA}$ , $I_{Boff}=1.5\text{mA}$ , $V_{CC}=3\text{V}$	$t_{off}$	-	10	18	ns

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b <sub>p</sub>	C	D	E	H <sub>E</sub>	A <sub>1</sub>	L <sub>p</sub>
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20