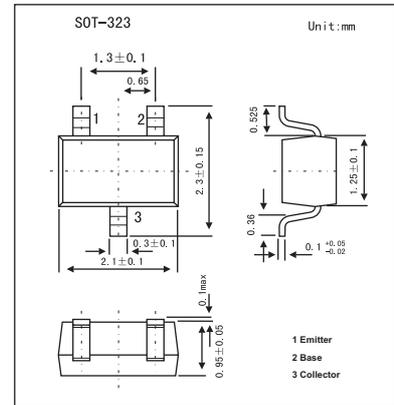
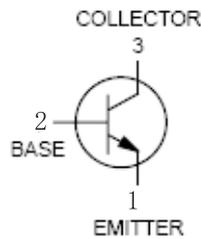


# MMBT4403W

■ Features

- Switching transistor.
- PNP Silicon.



■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	$V_{CE0}$	-40	V
Collector-base voltage	$V_{CB0}$	-40	V
Emitter-base voltage	$V_{EB0}$	-5	V
Collector current	$I_c$	-600	mA
Total Device Dissipation FR-5 Board	$P_D$	150	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage *	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1.0 mA, I <sub>B</sub> = 0	-40			V
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -0.1 mA, I <sub>E</sub> = 0	-40			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -0.1 mA, I <sub>C</sub> = 0	-5			V
Base cutoff current	I <sub>BEV</sub>	V <sub>CE</sub> = -35 V, V <sub>EB</sub> = -0.4 V			-0.1	μA
Collector cutoff current	I <sub>CEx</sub>	V <sub>CE</sub> = -35 V, V <sub>EB</sub> = -0.4 V			-0.1	μA
DC current gain	H <sub>FE</sub>	I <sub>C</sub> = -0.1 mA, V <sub>CE</sub> = -1.0 V	30			300
		I <sub>C</sub> = -1.0 mA, V <sub>CE</sub> = -1.0 V	60			
		I <sub>C</sub> = -10 mA, V <sub>CE</sub> = -1.0 V	100			
		I <sub>C</sub> = -150 mA, V <sub>CE</sub> = -2.0 V *	100			
		I <sub>C</sub> = -500 mA, V <sub>CE</sub> = -2.0 V *	20			
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	I <sub>C</sub> = -150 mA, I <sub>B</sub> = -15 mA			-0.4	V
		I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA			-0.75	
Base-emitter saturation voltage *	V <sub>BE(sat)</sub>	I <sub>C</sub> = -150 mA, I <sub>B</sub> = -15 mA	-0.75		-0.95	
		I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA			-1.3	
Current-gain-bandwidth product	f <sub>T</sub>	I <sub>C</sub> = -20 mA, V <sub>CE</sub> = -10 V, f = 100 MHz	200			MHz
Collector-base capacitance	C <sub>cb</sub>	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1.0 MHz			8.5	pF
Emitter-base capacitance	C <sub>eb</sub>	V <sub>BE</sub> = -0.5 V, I <sub>C</sub> = 0, f = 1.0 MHz			30	pF
Input impedance	h <sub>ie</sub>	I <sub>C</sub> = -1.0 mA, V <sub>CE</sub> = -10 V, f = 1.0 kHz	1.5		15	kΩ
Voltage feedback ratio	h <sub>re</sub>	I <sub>C</sub> = -1.0 mA, V <sub>CE</sub> = -10 V, f = 1.0 kHz	0.1		8.0	X 10 <sup>-4</sup>
Small-signal current gain	h <sub>fe</sub>	I <sub>C</sub> = -1.0 mA, V <sub>CE</sub> = -10 V, f = 1.0 kHz	60		500	
Output admittance	h <sub>oe</sub>	I <sub>C</sub> = -1.0 mA, V <sub>CE</sub> = -10 V, f = 1.0 kHz	1.0		100	μmhos
Delay time	t <sub>d</sub>	V <sub>CC</sub> = -30 V, V <sub>EB</sub> = -2.0 V,			15	ns
Rise time	t <sub>r</sub>	I <sub>C</sub> = -150 mA, I <sub>B1</sub> = -15 mA			20	ns
Storage time	t <sub>s</sub>	V <sub>CC</sub> = -30 V, I <sub>C</sub> = -150 mA,			225	ns
Fall time	t <sub>f</sub>	I <sub>B1</sub> = I <sub>B2</sub> = -15 mA			30	ns

\* Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

■ Marking

Marking	2T
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