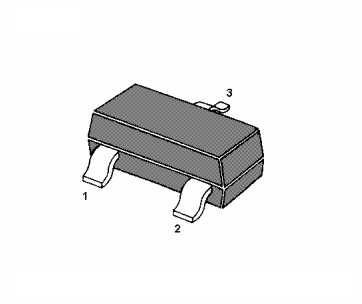
MMBT4403

PNP Silicon General Purpose Transistor

As complementary types the NPN transistor MMBT4401 is recommended.



1. Base 2. Emitter 3. Collector

SOT-23 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current Continuous	$-I_C$	600	mA
Total Device Dissipation FR-5 Board [1)] Derate above 25 °C	P_{tot}	200 1.8	mW mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature Range	T_J, T_s	-55 to +150	°C

[1)] FR-5 = 1 × 0.75 × 0.062 in.

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at $-V_{CE}$ = 1 V, $-I_C$ = 0.1 mA		h_{FE}	30	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 1 mA		h_{FE}	60	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 10 mA		h_{FE}	100	-	-
at $-V_{CE}$ = 2 V, $-I_C$ = 150 mA		h_{FE}	100	300	-
at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA		h_{FE}	20	-	-
Collector Emitter Saturation Voltage					
at $-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{CEsat}$	-	0.4	V
at $-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{CEsat}$	-	0.75	V
Base Emitter Saturation Voltage					
at $-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{BEsat}$	0.75	0.95	V
at $-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{BEsat}$	-	1.3	V
Collector Cutoff Current at $-V_{CB}$ = 35 V		$-I_{CBO}$	-	0.1	µA
Base Cutoff Current at $-V_{EB}$ = 5 V		$-I_{EBO}$	-	0.1	µA
Collector Base Breakdown Voltage at $-I_C$ = 0.1 mA		$-V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA		$-V_{(BR)CEO}$	40	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 0.1 mA		$-V_{(BR)EBO}$	5	-	V
Current Gain Bandwidth Product at $-V_{CE}$ = 10 V, $-I_C$ = 20 mA, f = 100 MHz		f_T	200	-	MHz
Collector Base Capacitance at $-V_{CB}$ = 10 V, $-I_E$ = 0, f = 1 MHz		C_{cb}	-	8.5	pF
Emitter Base Capacitance at $-V_{EB}$ = 0.5 V, $-I_C$ = 0, f = 1 MHz		C_{eb}	-	30	pF
Input Impedance at $-I_C$ = 1 mA, $-V_{CE}$ = 10 V, f = 1 KHz		h_{ie}	1.5	1.5	KΩ
Voltage Feedback Ratio at $-I_C$ = 1 mA, $-V_{CE}$ = 10 V, f = 1 KHz		h_{re}	0.1	8	X 10^{-4}
Small Signal Current Gain at $-I_C$ = 1 mA, $-V_{CE}$ = 10 V, f = 1 KHz		h_{fe}	60	500	-
Output Admittance at $-I_C$ = 1 mA, $-V_{CE}$ = 10 V, f = 1 KHz		h_{oe}	1	100	µmhos
Delay Time	$-V_{CC}$ = 30 V, $-V_{EB}$ = 2 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA	t_d	-	15	ns
Rise Time		t_r	-	20	ns
Storage Time	$-V_{CC}$ = 30 V, $-I_C$ = 150 mA, $-I_{B1}$ = $-I_{B2}$ = 15 mA	t_s	-	225	ns
Fall Time		t_f	-	30	ns