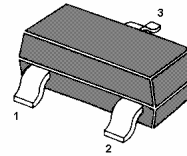


MMBT4403

PNP Silicon General Purpose Transistor

As complementary types the NPN transistor MMBT4401 is recommended.



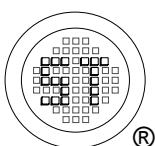
1. Base 2. Emitter 3. Collector

SOT-23 Plastic Package

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

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.



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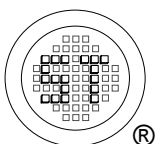


Dated : 23/12/2005

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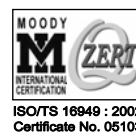
Characteristics at $T_a = 25\text{ }^\circ\text{C}$

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



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