

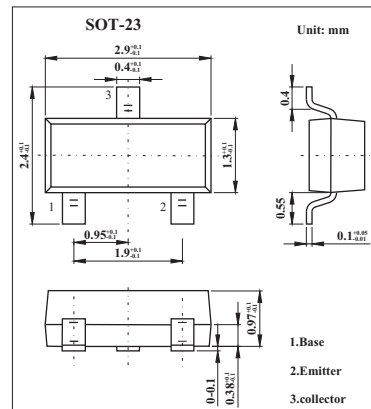
NPN General Purpose Amplifier

MMBT2222

Features

Epitaxial planar die construction.

Complementary PNP type available(MMBT2907)



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	600	mA
Power dissipation	P_D	250	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	500	$^\circ\text{C/W}$
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10 \mu\text{A}, I_E = 0$	75			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	40			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C = 10 \mu\text{A}, I_C = 0$	6			V
Collector cutoff current	I_{CBO}	$V_{CB}=50\text{V}, I_E=0$			10	nA
Emitter cutoff current	I_{EBO}	$V_{EB}= 3\text{V}, I_C=0$			100	nA
DC current gain	h_{FE}	$V_{CE}=10\text{V}, I_C= 0.1\text{mA}$	35			
		$V_{CE}=10\text{V}, I_C= 150\text{mA}$	100		300	
		$V_{CE}=10\text{V}, I_C= 500\text{mA}$	30			
collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 150 \text{ mA}; I_B = 15 \text{ mA}$			0.4	V
		$I_C = 500 \text{ mA}; I_B = 50 \text{ mA}$			1.6	V
base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 150 \text{ mA}; I_B = 15 \text{ mA}$			1.3	V
		$I_C = 500 \text{ mA}; I_B = 50 \text{ mA}$			2.6	V
Transition frequency	f_T	$I_C = 20 \text{ mA}; V_{CE} = 20 \text{ V}; f = 100 \text{ MHz}$	250			MHz
Delay time	t_d	$V_{CC}=30\text{V}, V_{BE(off)}=-0.5\text{V},$			10	ns
Rise time	t_r	$I_C=150\text{mA}, I_{B1}= 15\text{mA}$			25	ns
Storage time	t_s	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=-I_{B2}=15\text{mA}$			225	ns
Fall time	t_f				60	ns

* pulse test: Pulse Width 300 μs , Duty Cycle 2.0%.

Marking

Marking	M1B
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