



骏业（香港）实业有限公司

400-0744-078

SOT-23 Plastic-Encapsulate Transistors

MMBT2222A

TRANSISTOR (NPN)

FEATURES

- Epitaxial planar die construction
- Complementary PNP Type available(MMBT2907A)

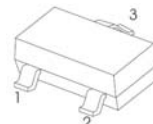
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MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_{C}	Collector Current -Continuous	600	mA
P_{C}	Collector Dissipation	300	mW
$R_{\theta\text{JA}}$	Thermal Resistance, Junction to Ambient	417	$^{\circ}\text{C}/\text{W}$
T_{J}	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR



ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=10\mu\text{A}$, $I_{\text{E}}=0$	75			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}^*$	$I_{\text{C}}=10\text{mA}$, $I_{\text{B}}=0$	40			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}$, $I_{\text{C}}=0$	6			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=60\text{V}$, $I_{\text{E}}=0$			0.01	μA
Collector cut-off current	I_{CEX}	$V_{\text{CE}}=30\text{V}$, $V_{\text{BE(off)}}=3\text{V}$			0.01	μA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=3\text{V}$, $I_{\text{C}}=0$			0.1	μA
DC current gain	$h_{\text{FE}(1)}^*$	$V_{\text{CE}}=10\text{V}$, $I_{\text{C}}=150\text{mA}$	100		300	
	$h_{\text{FE}(2)}^*$	$V_{\text{CE}}=10\text{V}$, $I_{\text{C}}=0.1\text{mA}$	40			
	$h_{\text{FE}(3)}^*$	$V_{\text{CE}}=10\text{V}$, $I_{\text{C}}=500\text{mA}$	42			
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}^*$	$I_{\text{C}}=500\text{mA}$, $I_{\text{B}}=50\text{mA}$ $I_{\text{C}}=150\text{mA}$, $I_{\text{B}}=15\text{mA}$			1 0.3	V
Base-emitter saturation voltage	$V_{\text{BE(sat)}}^*$	$I_{\text{C}}=500\text{mA}$, $I_{\text{B}}=50\text{mA}$ $I_{\text{C}}=150\text{mA}$, $I_{\text{B}}=15\text{mA}$			2.0 1.2	V
Transition frequency	f_{T}	$V_{\text{CE}}=20\text{V}$, $I_{\text{C}}=20\text{mA}$, $f=100\text{MHz}$	300			MHz
Delay time	t_{d}	$V_{\text{CC}}=30\text{V}$, $V_{\text{BE(off)}}=-0.5\text{V}$ $I_{\text{C}}=150\text{mA}$, $I_{\text{B1}}=15\text{mA}$			10	ns
Rise time	t_{r}				25	ns
Storage time	t_{s}	$V_{\text{CC}}=30\text{V}$, $I_{\text{C}}=150\text{mA}$ $I_{\text{B1}}=-I_{\text{B2}}=15\text{mA}$			225	ns
Fall time	t_{f}				60	ns

*pulse test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycles $\leq 2.0\%$.

