



SOT-23 Plastic-Encapsulate Transistors

MMBTH10 TRANSISTOR (NPN)

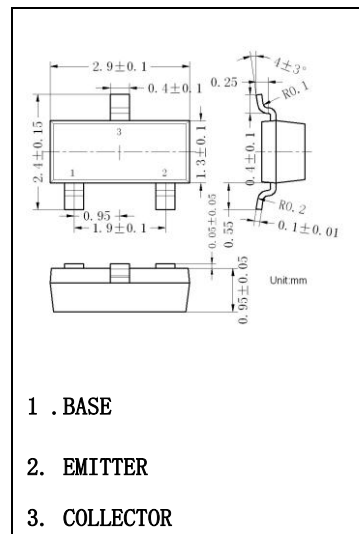
FEATURES

VHF/UHF Transistor

Marking: 3EM

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	3	V
I_{C}	Collector Current	50	mA
P_{C}	Collector Power Dissipation	225	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	556	$^{\circ}\text{C}/\text{W}$
T_{j}	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~150	$^{\circ}\text{C}$



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=100\mu\text{A}, I_{\text{E}}=0$	30			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	25			V
Emitter-Base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}, I_{\text{C}}=0$	3			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=25\text{V}, I_{\text{E}}=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=2\text{V}, I_{\text{C}}=0$			0.1	μA
DC current gain	h_{FE}	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=4\text{mA}$	60		200	
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}}=4\text{mA}, I_{\text{B}}=0.4\text{mA}$			0.5	V
Base-emitter voltage	V_{BE}	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=4\text{mA}$			0.95	V
Transition frequency	f_{T}	$V_{\text{CE}}=10\text{V}, I_{\text{C}}=4\text{mA}, f=100\text{MHZ}$	650			MHZ
Collector output capacitance	C_{ob}	$V_{\text{CE}}=10\text{V}, I_{\text{E}}=0, f=1\text{MHZ}$			0.7	pF

Typical Characteristics

