



TRANSISTPR(PNP)

FEATURES

- Epitaxial planar die construction
- Complementary NPN Type available(MMBT2222A)

Marking: 2F

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_{C}	Collector Current -Continuous	-600	mA
P_{D}	Total Device Dissipation	250	mW
$R_{\theta\text{JA}}$	Thermal Resistance Junction to Ambient	500	$^{\circ}\text{C}/\text{W}$
T_{J}	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 to +150	$^{\circ}\text{C}$

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=-10\mu\text{A}, I_{\text{E}}=0$	-60			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}^*}$	$I_{\text{C}}=-10\text{mA}, I_{\text{B}}=0$	-60			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=-10\mu\text{A}, I_{\text{C}}=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=-50\text{V}, I_{\text{E}}=0$			-20	nA
Base cut-off current	I_{EBO}	$V_{\text{CE}}=-3\text{V}, I_{\text{C}}=0$			-10	nA
Collector cut-off current	I_{CEX}	$V_{\text{CE}}=-30\text{V}, V_{\text{BE}(\text{off})}=-0.5\text{V}$			-50	nA
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=-10\text{V}, I_{\text{C}}=-150\text{mA}$	100		300	
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=-10\text{V}, I_{\text{C}}=-0.1\text{mA}$	75			
	$h_{\text{FE}(3)}$	$V_{\text{CE}}=-10\text{V}, I_{\text{C}}=-1\text{mA}$	100			
	$h_{\text{FE}(4)}$	$V_{\text{CE}}=-10\text{V}, I_{\text{C}}=-10\text{mA}$	100			
	$h_{\text{FE}(5)}$	$V_{\text{CE}}=-10\text{V}, I_{\text{C}}=-500\text{mA}$	50			
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})}^*$	$I_{\text{C}}=-150\text{mA}, I_{\text{B}}=-15\text{mA}$			-0.4	V
	$V_{\text{CE}(\text{sat})}^*$	$I_{\text{C}}=-500\text{mA}, I_{\text{B}}=-50\text{mA}$			-1.6	V
Base-emitter saturation voltage	$V_{\text{BE}(\text{sat})}^*$	$I_{\text{C}}=-150\text{mA}, I_{\text{B}}=-15\text{mA}$			-1.3	V
	$V_{\text{BE}(\text{sat})}^*$	$I_{\text{C}}=-500\text{mA}, I_{\text{B}}=-50\text{mA}$			-2.6	V
Transition frequency	f_{T}	$V_{\text{CE}}=-20\text{V}, I_{\text{C}}=-50\text{mA}, f=100\text{MHz}$	200			MHz
Delay time	t_{d}	$V_{\text{CE}}=-30\text{V}, I_{\text{C}}=-150\text{mA}, I_{\text{B}1}=-15\text{mA}$			10	nS
Rise time	t_{r}				25	nS
Storage time	t_{s}	$V_{\text{CE}}=-6\text{V}, I_{\text{C}}=-150\text{mA}, I_{\text{B}1}=-I_{\text{B}2}=-15\text{mA}$			225	nS
Fall time	t_{f}				60	nS

*Pulse test: $t_{\text{p}} \leq 300\mu\text{S}$, $\delta \leq 0.02$.

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Typical Characteristics

MMBT2907A

