

Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

FEATURES

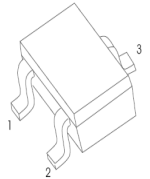
- Epitaxial planar die construction
- Complementary PNP Type available(MMBT2222AT)

MARKING:2F

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

Symbol	Parameter	Value	Unit
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	-0.6	A
P_C	Collector Dissipation	0.2	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 to +150	$^{\circ}\text{C}$

SOT - 523



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	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}, I_B=0$	-60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-50\text{V}, I_E=0$			-100	nA
Collector cut-off current	I_{CES}	$V_{CB}=-30\text{V}, I_B=0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-3\text{V}, I_C=0$			-100	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=-10\text{V}, I_C=-0.1\text{mA}$	75			
	$h_{FE(2)}$	$V_{CE}=-10\text{V}, I_C=-1\text{mA}$	100			
	$h_{FE(3)}$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$	100			
	$h_{FE(4)}$	$V_{CE}=-10\text{V}, I_C=-150\text{mA}$	100		300	
	$h_{FE(5)}$	$V_{CE}=-10\text{V}, I_C=-500\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.4	V
	$V_{CE(sat)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$	-0.6		-1.3	V
	$V_{BE(sat)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-2.6	V
Transition frequency	f_T	$V_{CE}=-20\text{V}, I_C=-50\text{mA}, f=100\text{MHz}$	200			MHz
Output capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=0.1\text{MHz}$			8	pF
Input capacitance	C_{ib}	$V_{EB}=-2\text{V}, I_C=0, f=0.1\text{MHz}$			30	pF
Delay time	t_d	$V_{CC}=-30\text{V}, V_{BE(off)}=-1.5\text{V}, I_C=-150\text{mA}$ $I_{B1}=-15\text{mA}$			10	ns
Rise time	t_r				40	ns
Storage time	t_s				80	ns
Fall time	t_f	$V_{CC}=-30\text{V}, I_C=-150\text{mA}, I_{B1}=-I_{B2}=-15\text{mA}$			30	ns

Typical Characteristics

