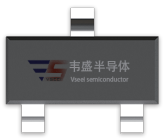
MMBT2222 TRANSISTOR (NPN)



1.BASE
2.COLLECTOR
3.EMITTER

SOT-23-3

FEATURES

- Generral Purpose Amplifier

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	250	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	500	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	75			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			10	nA
Collector cut-off current	I_{CEX}	V_{CE}=30V, $V_{BE(off)}$=3V			10	nA
Emitter cut-off current	I_{EBO}	V_{EB}=3V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$*	V_{CE}=10V, I_C=150mA	100		300	
	$h_{FE(2)}$*	V_{CE}=10V, I_C=0.1mA	40			
	$h_{FE(3)}$*	V_{CE}=10V, I_C=500mA	42			
Collector-emitter saturation voltage	$V_{CE(sat)1}$*	I_C=500mA, I_B=50mA			1	V
Collector-emitter saturation voltage	$V_{CE(sat)2}$*	I_C=150mA, I_B=15mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=500mA, I_B=50mA			1.2	V
Transition frequency	f_T	V_{CE}=20V,I_C=20mA, f=100MHz	300			MHz
Delay time	t_d	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA, I_{B1}=15mA			10	ns
Rise time	t_r				25	ns
Storage time	t_s	V_{CC}=30V, I_C=150mA, I_{B1}= I_{B2}=15mA			225	ns
Fall time	t_f				60	ns

*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.

CLASSIFICATION OF $h_{FE(1)}$

RANK	L	H
RANGE	100 – 200	200 – 300
MARKING	M1B	