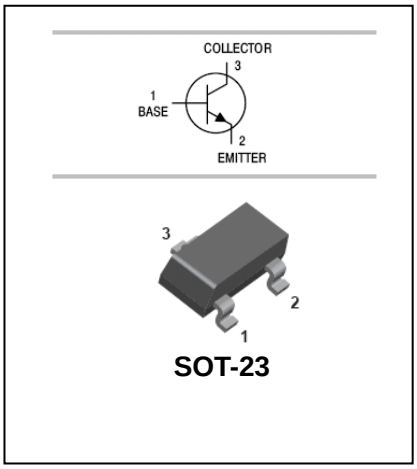
NPN General Purpose Amplifier MMBT2222

FEATURES

- Epitaxial planar die construction.
- Ultra-small surface mount package.

Lead-free



SOT-23

APPLICATIONS

- Use as a medium power amplifier.
- Switching requiring collector currents up to 500mA.

ORDERING INFORMATION

Type No.	Marking	Package Code
MMBT2222	M1B	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	600	mA
P_C	Collector Dissipation	300	mW
$R_{\theta JA}$	Thermal resistance Junction to ambient	417	℃/W
T_j, T_{stg}	Junction and Storage Temperature	-55 to+150	℃

NPN General Purpose Amplifier MMBT2222

ELECTRICAL CHARACTERISTICS @ Ta=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	60			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	5			V
Collector cut-off current	I_{CBO}	V_{CB}=50V I_E=0			0.01	μA
Emitter cut-off current	I_{EBO}	V_{EB}=3V I_C=0			0.01	μA
DC current gain	h_{FE}	V_{CE}=10V I_C=150mA	100		300	
		V_{CE}=10V I_C=0.1mA	35			
		V_{CE}=10V I_C=1.0mA	50			
		V_{CE}=10V I_C=10mA	75			
		V_{CE}=10V I_C=500mA	30			
		V_{CE}=1V I_C=150mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA I_B=50mA I_C=150mA I_B=15mA			1.6 0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=500mA I_B=50mA I_C=150mA I_B=15mA			2.6 1.3	V
Transition frequency	f_T	V_{CE}=20V I_C=20mA f=100MHz	250			MHz
Output capacitance	C_{obo}	V_{CB}=10V,I_E=0,f=1MHz			8.0	pF
Input capacitance	C_{ibo}	V_{EB}=0.5V,I_C=0, f=1MHz			30	pF
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

NPN General Purpose Amplifier MMBT2222

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

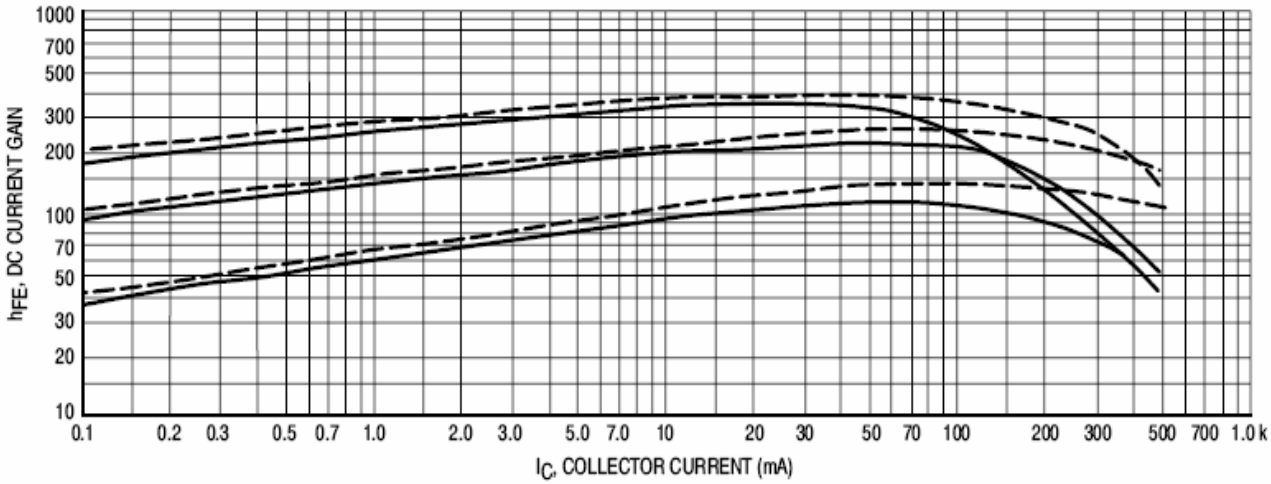


Figure 1. DC Current Gain

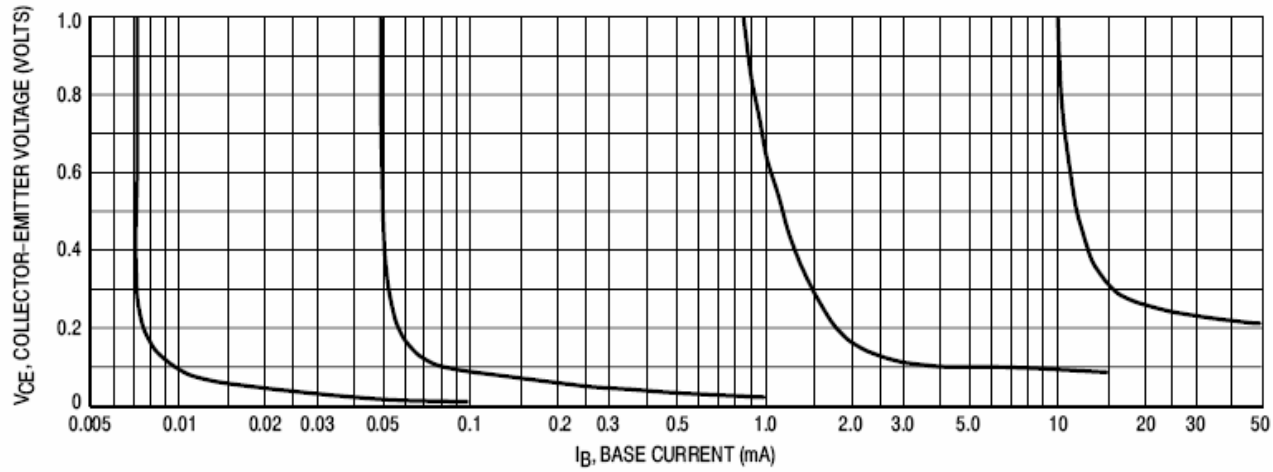
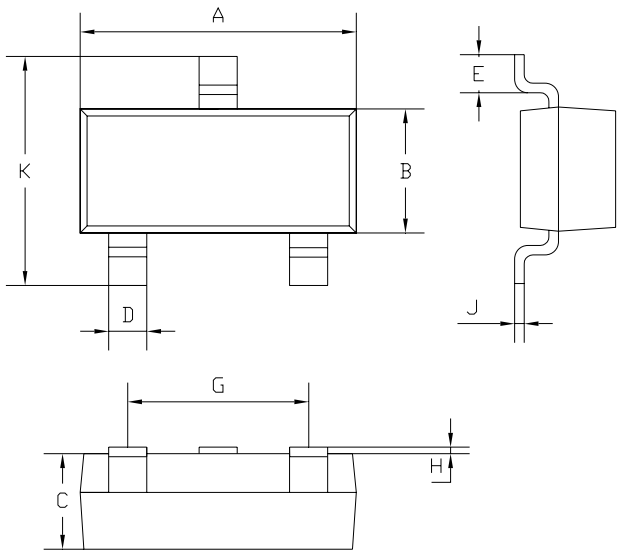


Figure 2. Collector Saturation Region

NPN General Purpose Amplifier MMBT2222

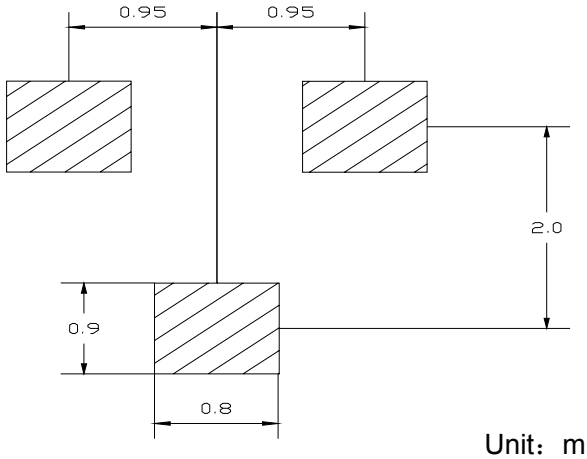
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0Typical	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1Typical	
K	2.35	2.45
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit：mm

PACKAGE INFORMATION

Device	Package	Shipping
MMBT2222	SOT-23	3000/Tape&Reel