

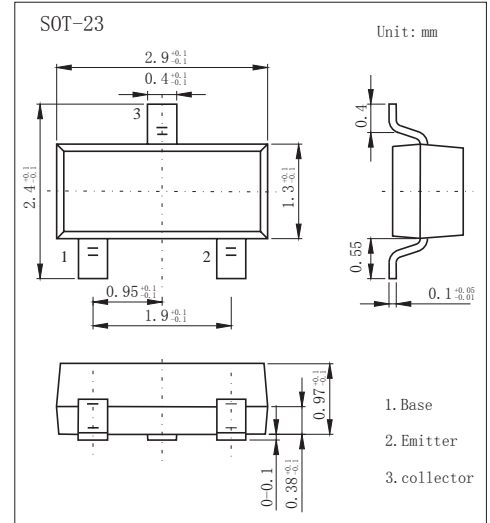
SOT-23 Plastic-Encapsulate Transistors

Features

- Epitaxial planar die construction.
- Complementary PNP type available (MMBT2907A)
- NPN General Purpose Amplifier

MECHANICAL DATA

- Case style: SOT-23 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	70	V
Collector - Emitter Voltage	V_{CE0}	40	
Emitter - Base Voltage	V_{EB0}	6	
Collector Current - Continuous	I_C	600	mA
Power Dissipation	P_D	250	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	417	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 to 150	

PACKAGE INFORMATION

Device	Package	Shipping
MMBT2222A (KMBT2222A)	SOT-23	3000/Tape&Reel

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100 \mu A, I_E = 0$	75			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 mA, I_B = 0$	40			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100 \mu A, I_C = 0$	6			V
Collector cutoff current	I_{CBO}	$V_{CB} = 60V, I_E = 0$			100	nA
Collector cut-off current	I_{CEX}	$V_{CE} = 30V, V_{EB(off)} = -3V$			10	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = 3V, I_C = 0$			100	nA
DC current gain	h_{FE}	$V_{CE} = 10V, I_C = 0.1mA$	40			
		$V_{CE} = 10V, I_C = 150mA$	100		300	
		$V_{CE} = 10V, I_C = 500mA$	42			
collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 150 mA, I_B = 15 mA$			0.3	V
		$I_C = 500 mA, I_B = 50 mA$			1	V
base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 150 mA, I_B = 15 mA$	0.6		1.2	V
		$I_C = 500 mA, I_B = 50 mA$			2	V
Transition frequency	f_T	$I_C = 20 mA, V_{CE} = 20 V, f = 100 MHz$	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				225	ns
Fall time	t_f				60	ns

* pulse test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$.

■ Marking

Marking	1P
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RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics

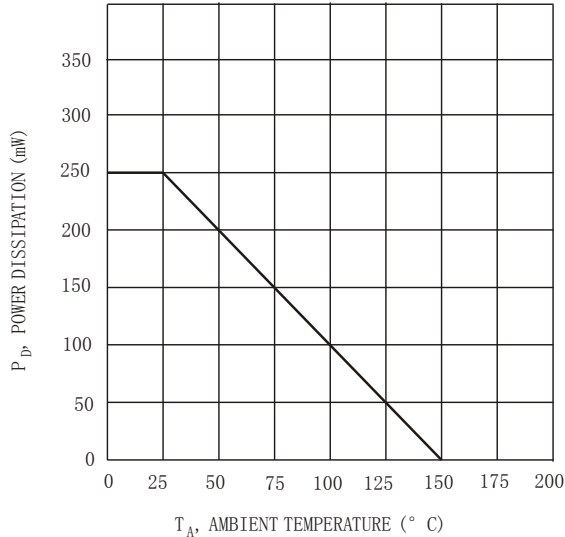


Fig. 1, Max Power Dissipation vs Ambient Temperature

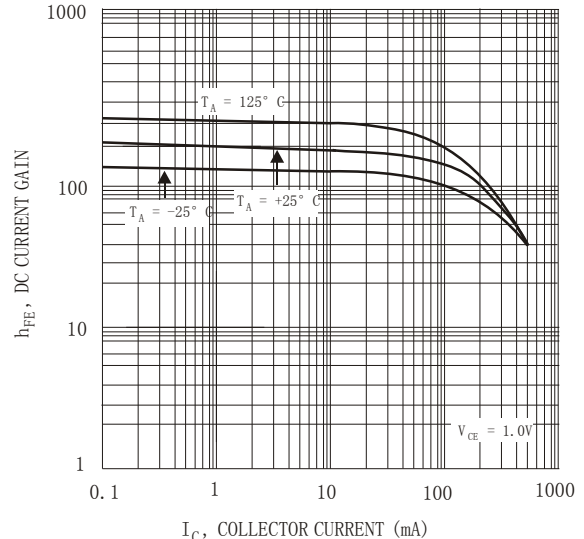


Fig. 2, Typical DC Current Gain vs Collector Current

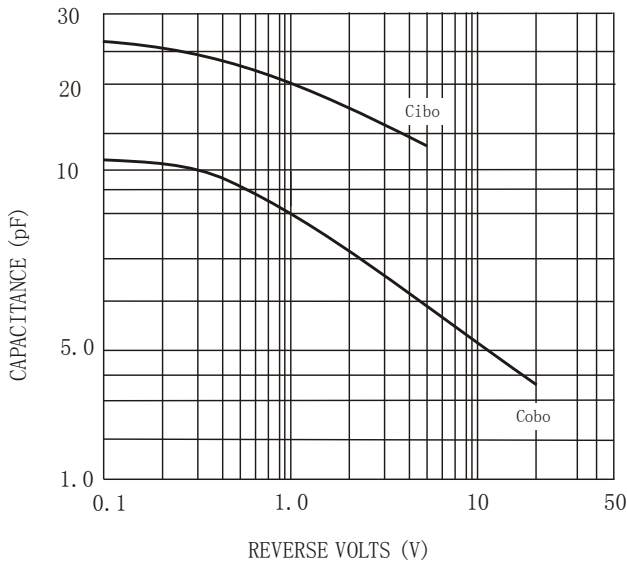


Fig. 3 Typical Capacitance

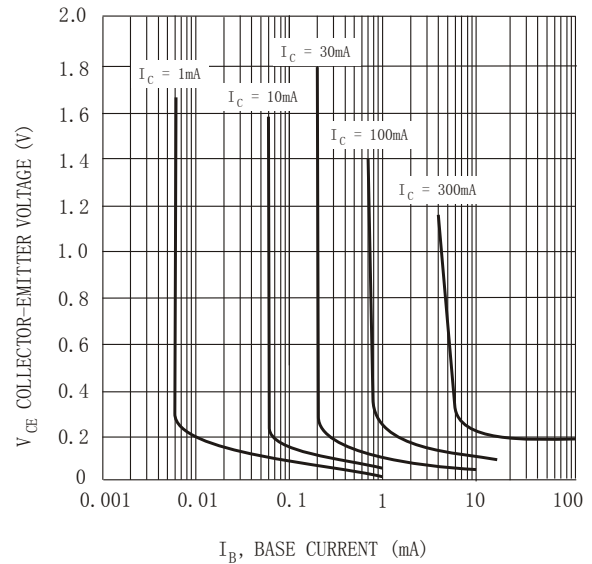


Fig. 4 Typical Collector Saturation