

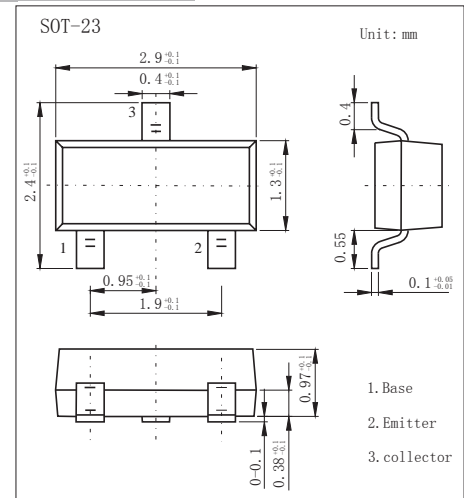
## SOT-23 Plastic-Encapsulate Transistors

### Features

- Epitaxial planar die construction.
- Complementary NPN type available (MMBT2222A)
- PNP Transistors

### 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	$V_{CB0}$	-60	V
Collector - Emitter Voltage	$V_{CE0}$	-60	
Emitter - Base Voltage	$V_{EB0}$	-5	
Collector Current - Continuous	$I_C$	600	mA
Power Dissipation	$P_D$	250	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	500	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{stg}$	-55 to 150	

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C = -100 \mu A, I_E = 0$	-60		V
Collector-Emitter Breakdown Voltage*	$V_{(BR)CE0}$	$I_C = -10 mA, I_B = 0$	-60		V
Emitter-Base Breakdown Voltage	$V_{(BR)EB0}$	$I_E = -100 \mu A, I_C = 0$	-5		V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -50 V, I_E = 0$		-20	nA
Collector Cutoff Current	$I_{CEX}$	$V_{CE} = -30 V, V_{EB(off)} = 0.5 V$		-50	nA
DC Current Gain	$h_{FE}$	$V_{CE} = -10 V, I_C = -0.1 mA$	75		
		$V_{CE} = -10 V, I_C = -1 mA$	100		
		$V_{CE} = -10 V, I_C = -10 mA$	100		
		$V_{CE} = -10 V, I_C = -150 mA$	100	300	
		$V_{CE} = -10 V, I_C = -500 mA$	50		
Collector-Emitter Saturation Voltage *	$V_{CE(sat)}$	$I_C = -150 mA, I_B = -15 mA$		-0.4	V
		$I_C = -500 mA, I_B = -50 mA$		-1.6	V
Base-Emitter Saturation Voltage *	$V_{BE(sat)}$	$I_C = -150 mA, I_B = -15 mA$		-1.3	V
		$I_C = -500 mA, I_B = -50 mA$		-2.6	V
Current Gain - Bandwidth Product	$f_T$	$V_{CE} = -20 V, I_C = -50 mA, f = 100 MHz$	200		MHz
Delay Time	$t_d$	$V_{CC} = -30 V, I_C = -150 mA, I_{B1} = -15 mA$		10	ns
Rise Time	$t_r$			40	ns
Storage Time	$t_s$	$V_{CC} = -6.0 V, I_C = -150 mA, I_{B1} = I_{B2} = -15 mA$		80	ns
Fall Time	$t_f$			30	ns

\* Pulse test: Pulse width  $\leq 300 \mu s$ , duty cycle  $\leq 2.0\%$

### Marking

Marking	2F
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# RATINGS AND CHARACTERISTIC CURVES

## ■ Typical Characteristics

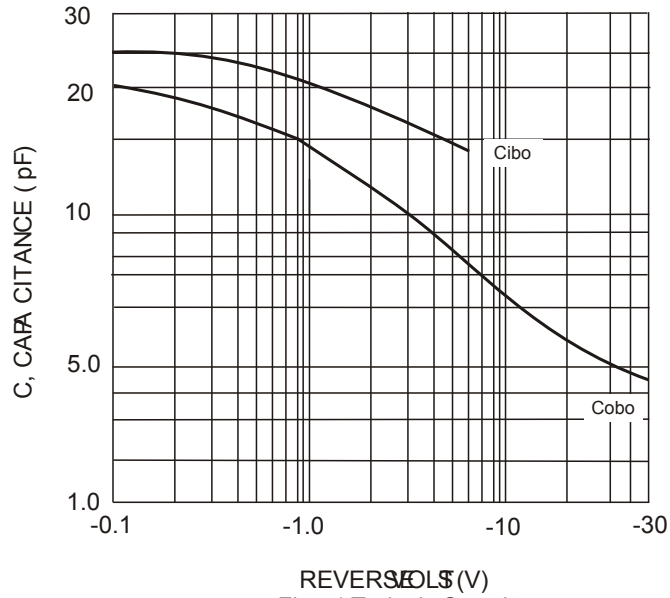


Fig. 1 Typical Capacitance

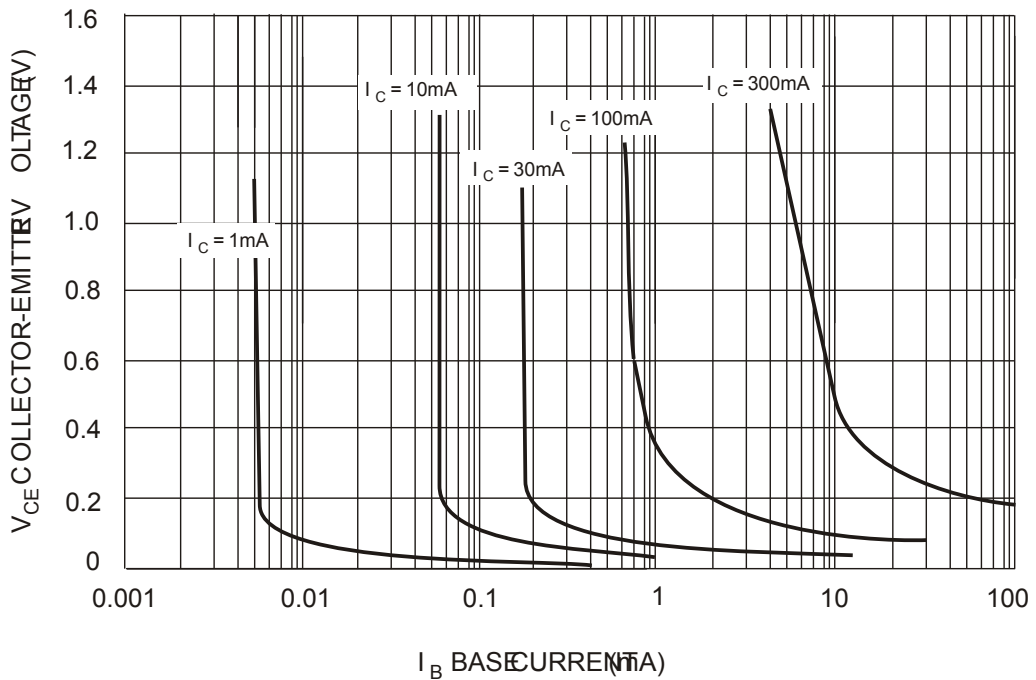


Fig. 2 Typical Collector Saturation Region