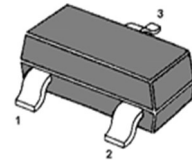


# MMBTSC1623

## NPN Silicon Epitaxial Planar Transistor

### Features

- Low Collector Saturation Voltage
- The transistor is subdivided into four groups, O, Y, G and L, according to its DC current gain



1.Base 2.Emitter 3.Collector  
SOT-23 Plastic Package

### Applications

- For switching and AF amplifier applications

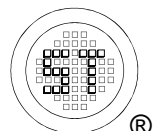
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{\text{CBO}}$	60	V
Collector Emitter Voltage	$V_{\text{CEO}}$	50	V
Emitter Base Voltage	$V_{\text{EBO}}$	7	V
Collector Current	$I_{\text{C}}$	150	mA
Power Dissipation	$P_{\text{tot}}$	300	mW
Junction Temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{Stg}}$	- 55 to + 150	$^\circ\text{C}$

### Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient <sup>1)</sup>	$R_{\theta\text{JA}}$	417	$^\circ\text{C/W}$

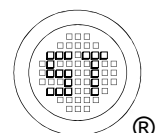
<sup>1)</sup> Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.



# MMBTSC1623

## Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$ Current Gain Group	O	$h_{FE}$	90	-	180	-
	Y	$h_{FE}$	135	-	270	-
	G	$h_{FE}$	200	-	400	-
	L	$h_{FE}$	300	-	600	-
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	60	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	50	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	7	-	-	V	
Collector Cutoff Current at $V_{CB} = 60\text{ V}$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$	
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	
Collector Saturation Voltage at $I_C = 100\text{ mA}$ , $I_B = 10\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V	
Base Saturation Voltage at $I_C = 100\text{ mA}$ , $I_B = 10\text{ mA}$	$V_{BE(sat)}$	-	-	1	V	
Gain Bandwidth Product at $V_{CE} = 6\text{ V}$ , $I_C = 10\text{ mA}$	$f_T$	-	250	-	MHz	
Output Capacitance at $V_{CB} = 6\text{ V}$ , $f = 1\text{ MHz}$	$C_{OB}$	-	3	-	pF	



## Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

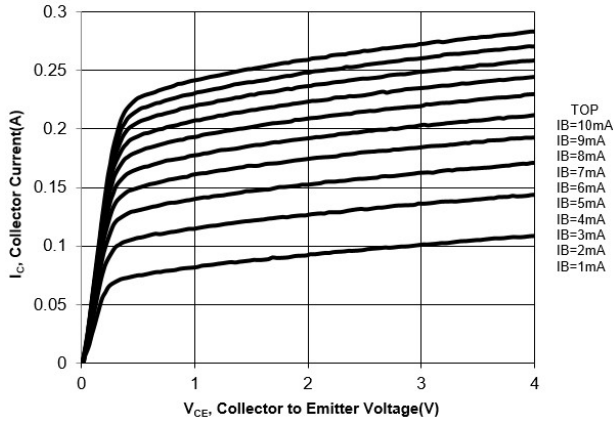


Fig. 2 Collector Current vs.  $V_{BE}$

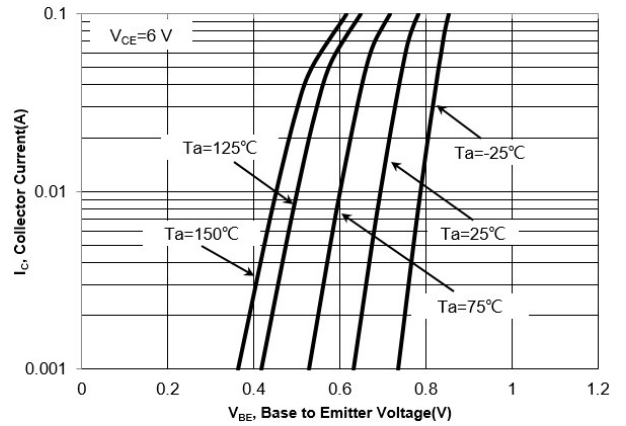


Fig. 3  $h_{FE}$  vs. Collector Current

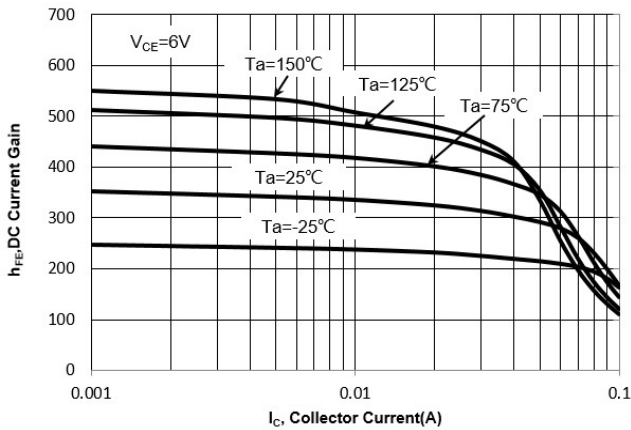


Fig. 4  $V_{BE(sat)}$  vs. Collector Current

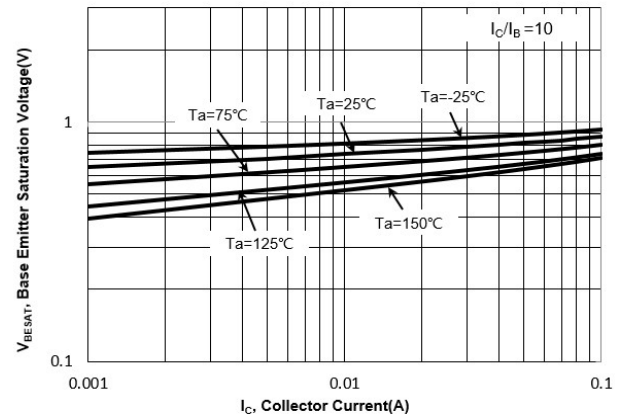


Fig. 5  $V_{CE(sat)}$  vs. Collector Current

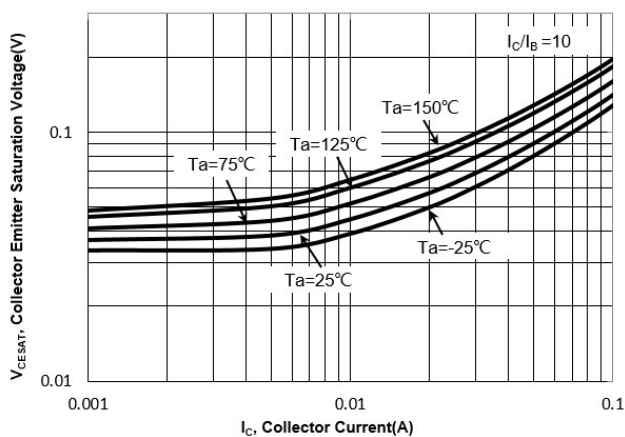
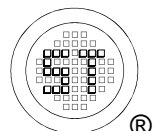
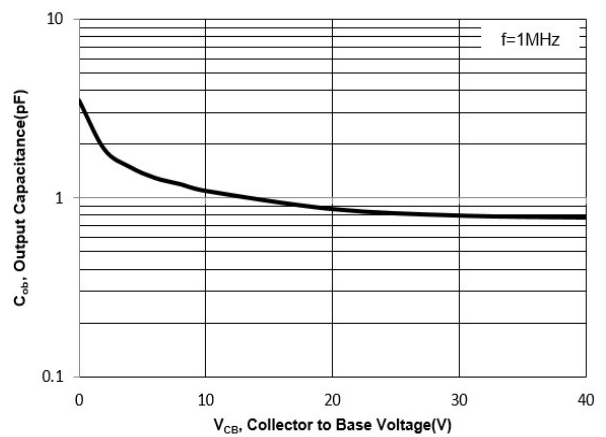


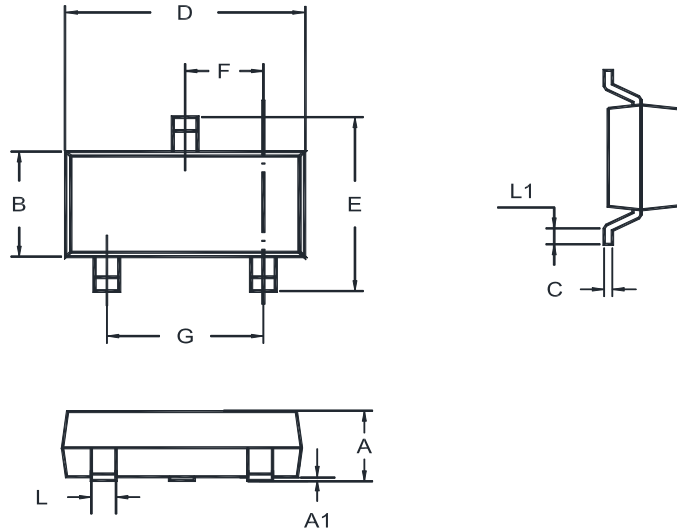
Fig. 6. Output Capacitance



# MMBTSC1623

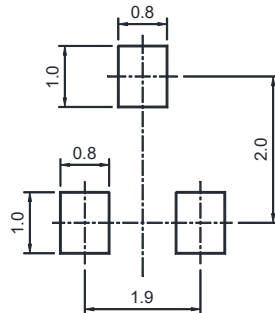
## Package Outline (Dimensions in mm)

SOT-23



Unit	A	A1	B	C	D	E	F	G	L	L1
mm	1.20	0.100	1.40	0.19	3.04	2.6	1.02	2.04	0.51	0.2
	0.89	0.013	1.20	0.08	2.80	2.2	0.89	1.78	0.37	MIN

## Recommended Soldering Footprint



## Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

## Marking information

"\*\*" = Part No.

MMBTSC1623O/Y:1E

MMBTSC1623G:1F

MMBTSC1623L:1G

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

