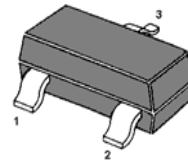


MMBTSC1623

NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications

The transistor is subdivided into four groups,
O, Y, G and L, according to its DC current gain



1.Base 2.Emitter 3.Collector
TO-236 Plastic Package

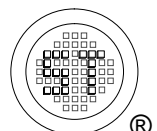
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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

Thermal Characteristics

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

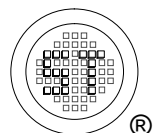
¹⁾ Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.



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	μA	
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	-	0.1	μA	
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

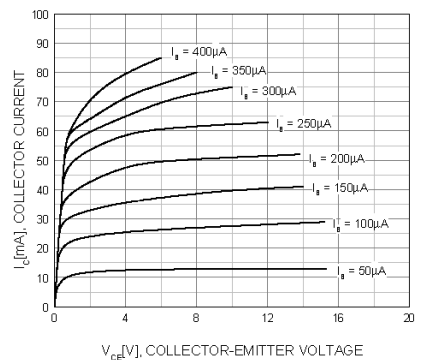


Figure 1. Static Characteristic

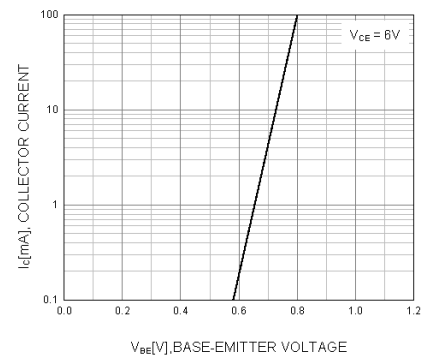


Figure 2. Transfer Characteristic

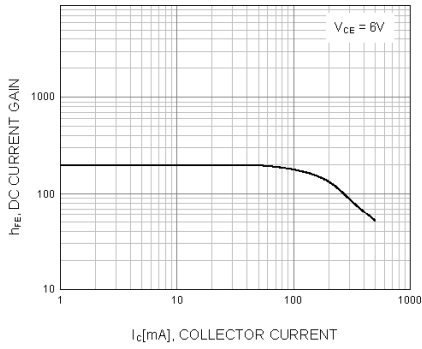


Figure 3. DC current Gain

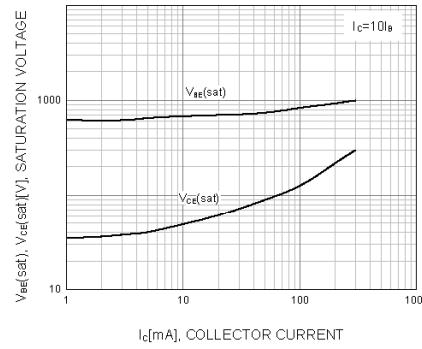


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

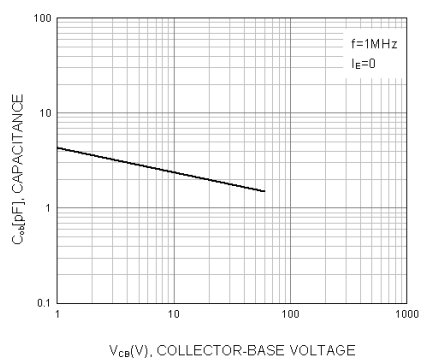


Figure 5. Output Capacitance

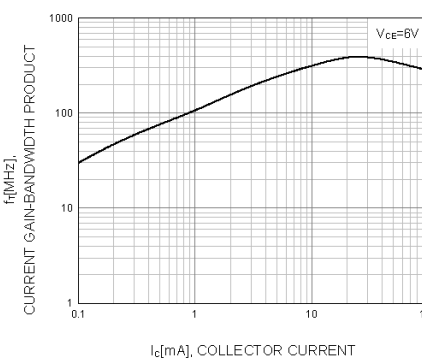
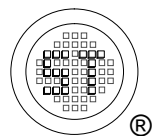


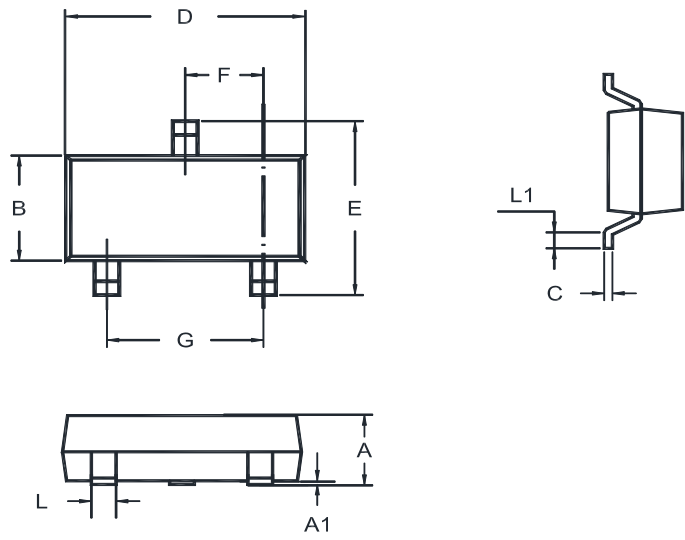
Figure 6. Current Gain Bandwidth Product



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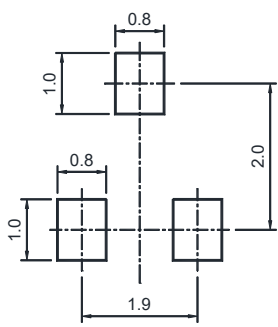
Package Outline (Dimensions in mm)

TO-236



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

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
TO-236	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

