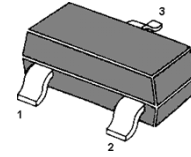


## MMBTSC1009 NPN Silicon Epitaxial Transistor

FM/AM RF AMPLIFIER, MIXER, OSCILLATOR, CONVERTER.



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

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	50	V
Collector Emitter Voltage	$V_{CEO}$	30	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	50	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$ Current Gain Group	O	$h_{FE}$	60	-	120	-
	Y	$h_{FE}$	90	-	180	-
Collector Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V	
Base Emitter Voltage at $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$	$V_{BE}$	0.65	-	0.75	V	
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	
Collector Cutoff Current at $V_{CB} = 50\text{ V}$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$	
Gain Bandwidth Product at $V_{CE} = 6\text{ V}$ , $-I_E = 1\text{ mA}$	$f_T$	150	250	-	MHz	
Output Capacitance at $V_{CB} = 6\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	1.9	2.2	pF	
Collector Base Time Constant at $V_{CB} = 6\text{ V}$ , $f = 31.9\text{ MHz}$ , $-I_E = 10\text{ mA}$	$C_{c,rb'b}$	-	10	15	ns	
Noise Figure at $V_{CE} = 6\text{ V}$ , $-I_E = 1\text{ mA}$ , $f = 1\text{ MHz}$ , $R_G = 500\ \Omega$	NF	-	2	4	dB	

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23

