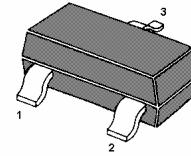


MMBTSC1009

NPN Silicon Epitaxial Transistor

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



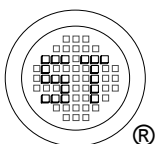
1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

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	$^\circ\text{C}$

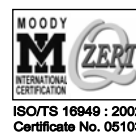
Characteristics at $T_a = 25\text{ }^\circ\text{C}$

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	μA	
Collector Cutoff Current at $V_{CB} = 50\text{ V}$	I_{CBO}	-	-	0.1	μA	
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	



SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 21/12/2005