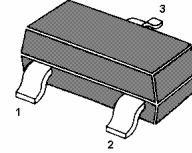


# MMBTSC5084

## NPN Silicon Epitaxial Planar Transistor

for low noise, high gain amplifier at VHF~UHF band.

The transistor is subdivided into two groups O and Y, according to its DC current gain.

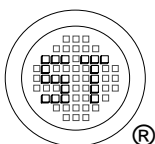


1. Base 2. Emitter 3. Collector

SOT-23 Plastic Package

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

	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	20	V
Collector Emitter Voltage	$V_{CEO}$	12	V
Emitter Base Voltage	$V_{EBO}$	3	V
Base Current	$I_B$	40	mA
Collector Current	$I_C$	80	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +125	$^\circ\text{C}$



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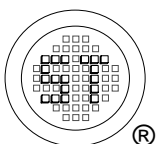
Dated : 20/10/2005

# MMBTSC5084

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

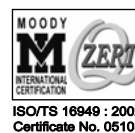
	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=10\text{V}$ , $I_C=20\text{mA}$ Current Gain Group O Y	$h_{FE}$	80	-	160	-
	$h_{FE}$	120	-	240	-
Collector Cutoff Current at $V_{CB}=10\text{V}$	$I_{CBO}$	-	-	1	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=1.0\text{V}$	$I_{EBO}$	-	-	1	$\mu\text{A}$
Transition Frequency at $V_{CE}=10\text{V}$ , $I_C=20\text{mA}$	$f_T$	5	7	-	GHz
Reverse Transfer Capacitance at $V_{CB}=10\text{V}$ , $f=1\text{MHz}$ <sup>1)</sup>	$C_{re}$	-	0.65	1.15	pF
Output Capacitance at $V_{CB}=10\text{V}$ , $f=1\text{MHz}$ <sup>1)</sup>	$C_{ob}$	-	1	-	pF
Insertion Gain at $V_{CE}=10\text{V}$ , $I_C=20\text{mA}$ , $f=500\text{MHz}$	$ S_{21e} ^2_1$	-	16.5	-	dB
Insertion Gain at $V_{CE}=10\text{V}$ , $I_C=20\text{mA}$ , $f=1.0\text{GHz}$	$ S_{21e} ^2_2$	7.5	11	-	dB
Noise Figure at $V_{CE}=10\text{V}$ , $I_C=5\text{mA}$ , $f=500\text{MHz}$	$NF_1$	-	1	-	dB
Noise Figure at $V_{CE}=10\text{V}$ , $I_C=5\text{mA}$ , $f=1.0\text{GHz}$	$NF_2$	-	1.1	2	dB

<sup>1)</sup>  $C_{re}$  is measured by 3 terminal method with capacitance bridge.



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ISO/TS 16949 : 2002 Certificate No. 05103  
ISO 14001:2004 Certificate No. 7116  
ISO 9001:2000 Certificate No. 0506098

Dated : 20/10/2005