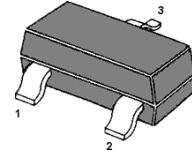


MBTSC5065 NPN Silicon Epitaxial Planar Transistor

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

Parameter	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	15	mA
Collector Current	I_C	30	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 $T_{amb}=25\text{ }^{\circ}\text{C}$

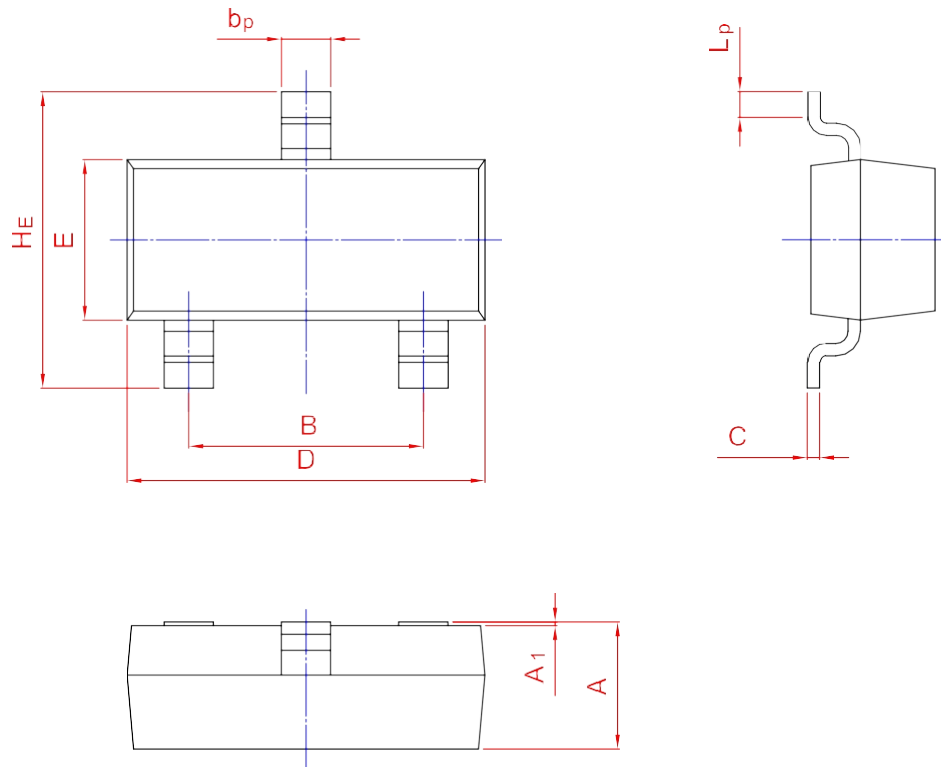
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=5V$, $I_C=10mA$ Current Gain Group O Y	h_{FE}	80	-	160	-
	h_{FE}	120	-	240	-
Collector Cutoff Current at $V_{CB}=10V$	I_{CBO}	-	-	1	μA
Emitter Cutoff Current at $V_{EB}=1.0V$	I_{EBO}	-	-	1	μA
Transition Frequency at $V_{CE}=5V$, $I_C=10mA$	f_T	5	7	-	GHz
Reverse Transfer Capacitance at $V_{CB}=5V$, $f=1MHz$ ¹⁾	C_{re}	-	0.45	0.9	pF
Output Capacitance at $V_{CB}=5V$, $f=1MHz$ ¹⁾	C_{ob}	-	0.7	-	pF
Insertion Gain at $V_{CE}=5V$, $I_C=10mA$, $f=500MHz$	$ S_{21e} ^2_1$	-	17	-	dB
Insertion Gain at $V_{CE}=5V$, $I_C=10mA$, $f=1.0GHz$	$ S_{21e} ^2_2$	8.5	12	-	dB
Noise Figure at $V_{CE}=5V$, $I_C=3mA$, $f=500MHz$	NF_1	-	1	-	dB
Noise Figure at $V_{CE}=5V$, $I_C=3mA$, $f=1.0GHz$	NF_2	-	1.1	2	dB

¹⁾ C_{re} is measured by 3 terminal method with capacitance bridge.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20