

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

# MT6C04AS

VHF-UHF Band Low Noise Amplifier Application  
 VHF-UHF Band Oscillator Application

Unit: mm

- Two devices are built into the sES6 package, which is smaller and thinner than the super-thin and ultra-super mini (6-pin) ES6 package.

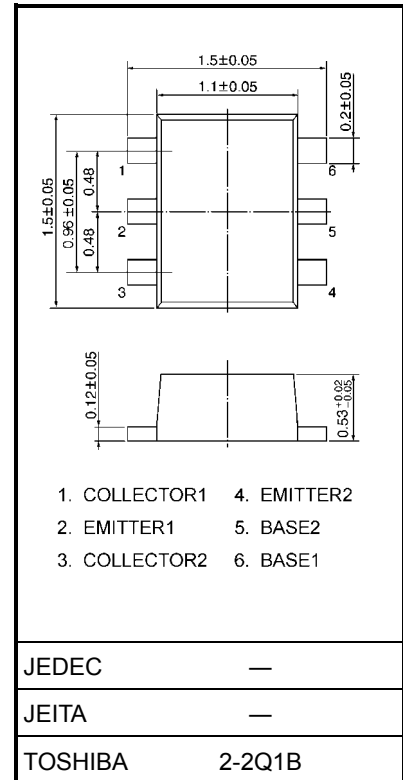
### Mounted Devices

	Q1/Q2: SSM (TESM)
Three pin (SSM/TESM) type part No.	MT3S04AS (MT3S04AT)

### Maximum Ratings (Ta = 25°C)

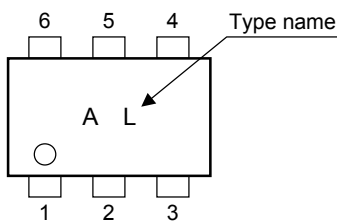
Characteristics	Symbol	Q1/Q2	Unit
Collector-base voltage	$V_{CB0}$	10	V
Collector-emitter voltage	$V_{CEO}$	5	V
Emitter-base voltage	$V_{EBO}$	2	V
Collector current	$I_C$	40	mA
Base current	$I_B$	10	mA
Collector power dissipation	$P_C$ (Note 1)	100	mW
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-55~125	°C

Note 1: Total power dissipation of Q1 and Q2 mounted on the circuit board

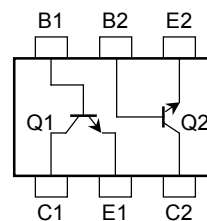


Weight: g (typ.)

### Marking



### Pin Assignment



## Electrical Characteristics Q1/Q2-Side (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 5\text{ V}, I_E = 0$	—	—	0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 1\text{ V}, I_C = 0$	—	—	1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = 1\text{ V}, I_C = 5\text{ mA}$	80	—	160	—
Transition frequency	$f_T(1)$	$V_{CE} = 1\text{ V}, I_C = 5\text{ mA}$	2	4.5	—	GHz
	$f_T(2)$	$V_{CE} = 3\text{ V}, I_C = 7\text{ mA}$	5	7	—	GHz
Insertion gain	$ S_{21e} ^2(1)$	$V_{CE} = 1\text{ V}, I_C = 5\text{ mA}, f = 1\text{ GHz}$	—	8.5	—	dB
	$ S_{21e} ^2(2)$	$V_{CE} = 3\text{ V}, I_C = 20\text{ mA}, f = 1\text{ GHz}$	7.5	11	—	
Noise figure	NF (1)	$V_{CE} = 1\text{ V}, I_C = 5\text{ mA}, f = 1\text{ GHz}$	—	1.3	2.2	dB
	NF (2)	$V_{CE} = 3\text{ V}, I_C = 7\text{ mA}, f = 1\text{ GHz}$	—	1.2	2	
Reverse transfer capacitance	$C_{re}$	$V_{CB} = 1\text{ V}, I_E = 0, f = 1\text{ MHz}$ (Note 2)	—	0.9	1.25	pF

Note 2:  $C_{re}$  is measured by 3 terminal method with capacitance bridge.

### Caution

This device is sensitive to electrostatic discharge. Please make enough tool and equipment earthed when you handle.

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