

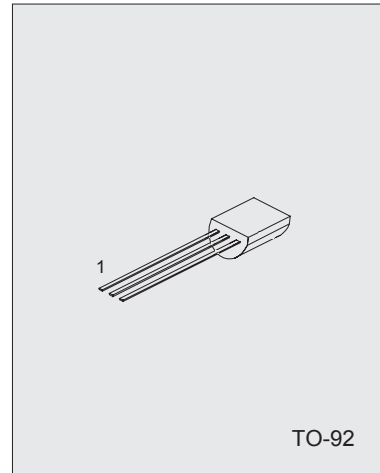
## ONE CHIP AM RADIO CIRCUIT

### DESCRIPTION

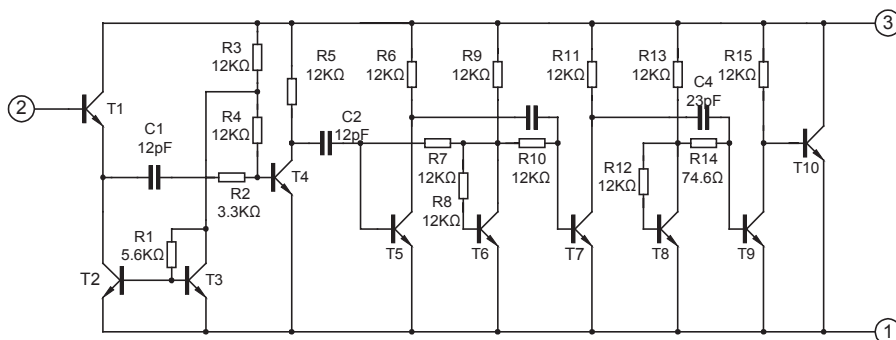
The TA7642 is suitable for low voltage portable Radio, cassette system and other wireless AM system. The package of UTC7642 is TO-92.

### FEATURES

- \*Low operating voltage: Down to  $V_{CC}=1.3V$
- \*Low Quiescent Current:  $I_{CCO}=0.2mA$
- \*Low external component required.



### EQUIVALENT CIRCUIT



### ABSOLUTE MAXIMUM RATINGS (Tested at $T_a=25^{\circ}C$ , unless otherwise specified)

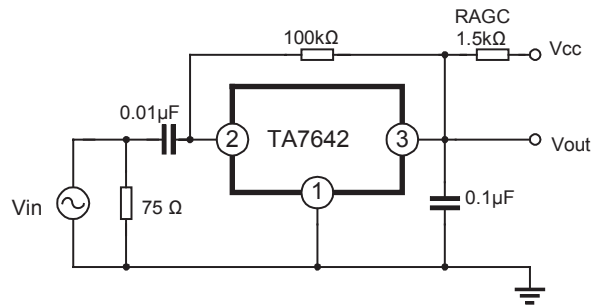
Parameters	Symbols	Min.	Max.	Unit
Supply Voltage	$V_{CC}$		6	V
Operating Temperature	$T_{opr}$	-10	60	$^{\circ}C$
Storage temperature	$T_{STG}$	-55	150	$^{\circ}C$

## ELECTRICAL CHARACTERISTICS

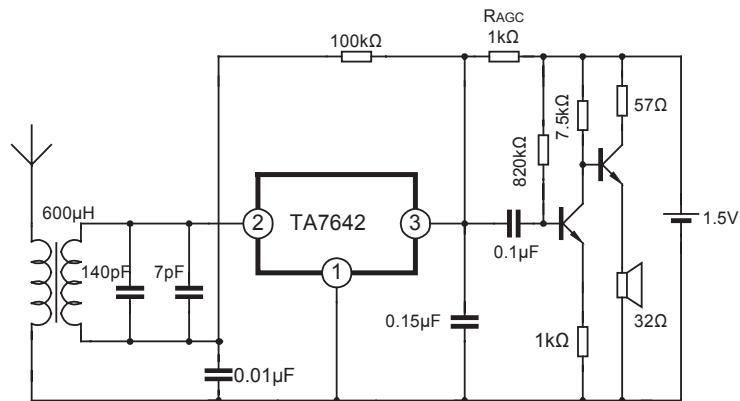
(Tested at  $T_a=25^\circ\text{C}$ ,  $V_{CC}=1.3\text{V}$ ,  $f_m=1\text{kHz}$ ,  $f_o=1\text{MHz}$ ,  $\text{MOD}=30\%$ , unless other specified)

Parameters	Symbols	Test conditions	Min.	Typ.	Max.	Unit
Supply Voltage	$V_{CC}$		1.2	1.3	1.6	V
Quiescent Current	$I_{CCQ}$	$V_I=0$	0.14	0.20	0.30	mA
Input Resistance	$R_i$		—	3	—	$M\Omega$
Maximum sensitivity	SM	$V_{OD}=3\text{mV}$	—	600	—	$\mu\text{V}$
Detector Output Voltage	$V_{OD}$	$V_I=10\text{mV}$	5	15	30	mV
The Range of AGC	$\Delta A$		—	30	—	dB

## TEST CIRCUIT



## APPLICATION CIRCUIT



## TA7642 Radio IC

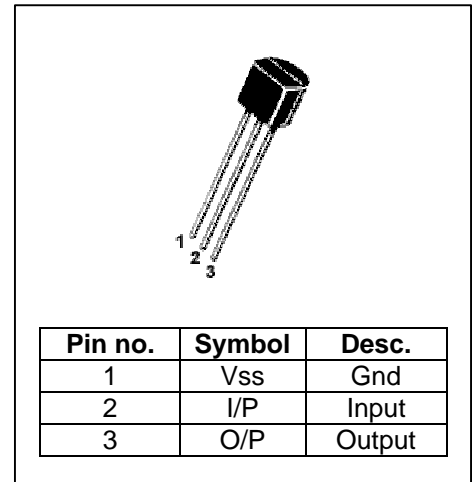
The TA7642 is an AM radio IC in a TO92 package which requires very few external components to make a complete pocket radio.

### Features:

- low operating voltage – down to 1.3V
- low quiescent current – 0.2mA
- very few external components required

### Maximum ratings:

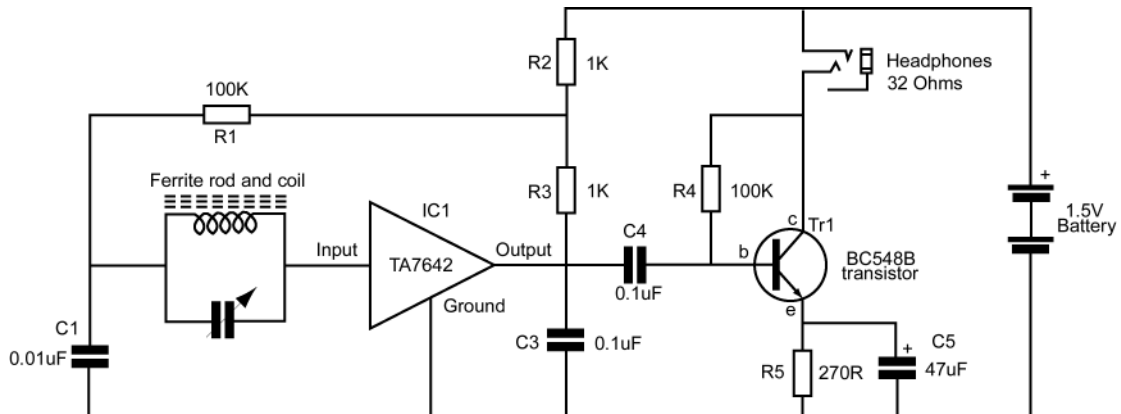
Parameters	Min.	Max.	Unit
Supply voltage		6	V
Operating temp.	-10	60	°C
Storage temp.	-55	150	°C



### Electrical Characteristics:

Parameters	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Supply voltage	$V_{CC}$		1.2	1.3	1.6	V
Quiescent current	$I_{CCQ}$	$V_I = 0$	0.14	0.20	0.30	mA
Input resistance	$R_I$		-	3	-	MΩ
Maximum sensitivity	$S_M$	$V_{OD} = 3mV$	-	600	-	μV
Detector output voltage	$V_{OD}$	$V_I = 10mV$	5	15	30	mV
AGC Range	A		-	30	-	dB

### Example circuit:



The coil needs approximately 55 turns of 0.315 (30 SWG) of enamelled copper wire on a 100 x 10mm ferrite rod. A process of trial and error will help you achieve the optimum number of windings.

