

TD6109P

T-77-05-05

ELECTRICAL CHARACTERISTICS (Unless otherwise specified; $V_{CC}=5.0V$, $T_a=25^{\circ}C$)

| CHARACTERISTIC | | SYMBOL | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------|-----------|-------------|--------------|----------------------------------|------|------|------|-------------|
| Operating Supply Voltage | | V_{CC} | | (Note 1) | 3 | ~ | 6 | V |
| Operating Supply Current | | $I_{CC AM}$ | | | 2.8 | 5 | 7.6 | mA |
| | | $I_{CC AM}$ | | | 1.6 | 3 | 4.5 | mA |
| Operating Frequency Range | | f FM | | $V_{in}=25mV_{rms}$ (Note 1) | 60 | ~ | 150 | MHz |
| | | f AM | | $V_{in}=50mV_{rms}$ (Note 1) | 0.5 | ~ | 30 | MHz |
| Input Voltage Range | | $V_{in FM}$ | | $FM_{in}=60\sim 150MHz$ (Note 1) | 50 | - | 300 | mV_{rms} |
| | | $V_{in AM}$ | | $AM_{in}=0.5\sim 10MHz$ (Note 1) | 20 | - | 300 | mV_{rms} |
| | | $V_{in AM}$ | | $AM_{in}=10\sim 30MHz$ (Note 1) | 50 | - | 300 | mV_{rms} |
| Output Amplitude | | V_{OUT} | | (Note 1) | 0.5 | 0.9 | 1.5 | V_{p-p} |
| Input Voltage | "H" Level | V_{IH} | | ⑥⑦⑨ Pin (Note 1) | 4.0 | ~ | 5.0 | V |
| | "L" Level | V_{IL} | | ⑥⑦⑨ Pin (Note 1) | 0 | ~ | 1.0 | V |
| Input Current | "H" Level | I_{IH} | | ⑥⑨ Pin $V_{IN}=5V$ | - | 70 | 180 | μA |
| | | I_{IH}' | | ⑦ Pin $V_{IN}=5V$ | - | 0.4 | 10 | μA |
| | "L" Level | I_{IL} | | ⑥⑨ Pin $V_{IN}=1V$ | - | 4 | 30 | μA |
| | | I_{IL}' | | ⑦ Pin $V_{IN}=1V$ | - | 0.1 | 10 | μA |
| Input Impedance | | $R_{in FM}$ | | f=100MHz | - | 1.2 | - | $k\Omega$ |
| | | $C_{in FM}$ | | f=100MHz | - | 2.5 | - | pF |
| | | $R_{in AM}$ | | f=1MHz | - | 1.0 | - | $k\Omega$ |
| | | $C_{in AM}$ | | f=1MHz | - | 5 | - | pF |
| Operating Temperature | | T_{opr} | | | -10 | ~ | 75 | $^{\circ}C$ |

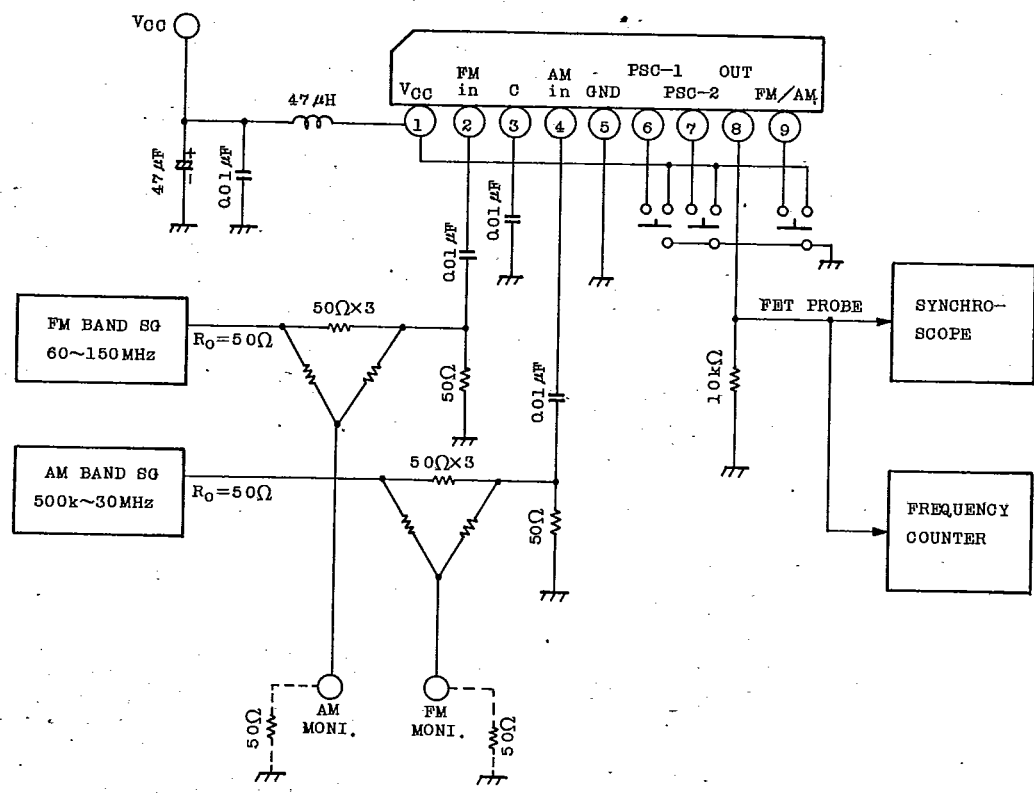
Note 1: Assurance under all conditions of $V_{CC}=3\sim 6(V)$, $T_a=-10\sim 75(^{\circ}C)$

TOSHIBA

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TD6109P AC TEST CIRCUIT

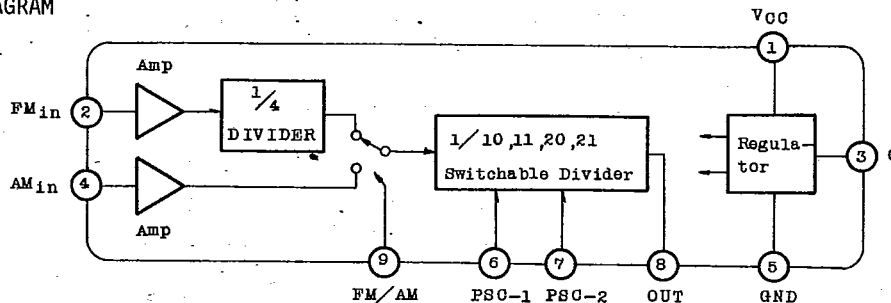


AUDIO DIGITAL IC

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BLOCK DIAGRAM



PIN DESCRIPTION

| PIN | SYMBOL | FUNCTION | REMARKS |
|-----|------------------|---|---------|
| 1 | V _{CC} | Power Supply Terminal. | |
| 2 | FM _{in} | Input Terminal of FM Local OSC. f : 60 ~ 120MHz, V _{in} ≥ 50mV | |
| 3 | C | Bias Capacitance Terminal. C-GMD 0.01μF | |
| 4 | AM _{in} | Input Terminal of AM (SW, MW, LW) Local OSC f : 500kHz ~ 30MHz | |
| 5 | GND | GND Terminal. | |
| 6 | PSC-1 | Frequency-division ratio switching control terminal. "H" 20, "L" 10 | |
| 7 | PSC-2 | Frequency-division ratio switching control terminal. "H" n, "L" n+1 (n=20 or 10) | |
| 8 | OUT | Output Terminal. Connected to Pinterterminal of TC9300F. | |
| 9 | FM/AM | Input Select Control Terminal FM _{in} /AM _{in} . "H" FM _{in} , "L" AM _{in} | |

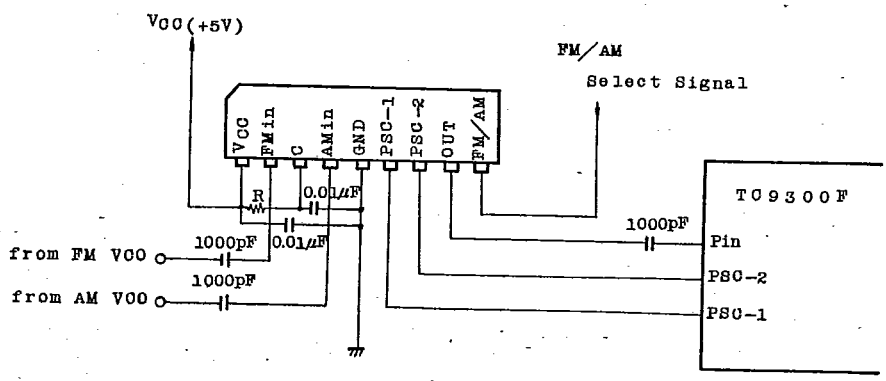
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DIVISION RATIO OF TD6109P

| CONTROL INPUT | | | INPUT SELECT | DIVISION RATIO | NOTE |
|---------------|-------|-------|------------------|----------------|------|
| FM/AM | PSC-1 | PSC-2 | | | |
| H | L | L | FM _{in} | 1/4 + 1/11 | |
| | | H | | 1/4 + 1/10 | |
| | H | L | | 1/4 + 1/21 | |
| | | H | | 1/4 + 1/20 | |
| L | L | L | AM _{in} | 1/11 | |
| | | H | | 1/10 | |
| | H | L | | 1/21 | |
| | | H | | 1/20 | |

APPLICATION CIRCUIT



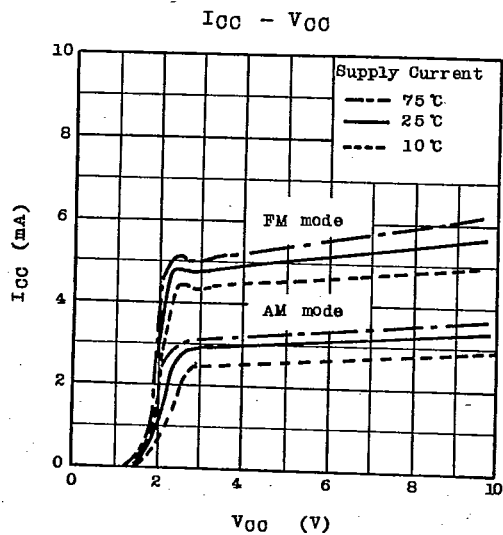
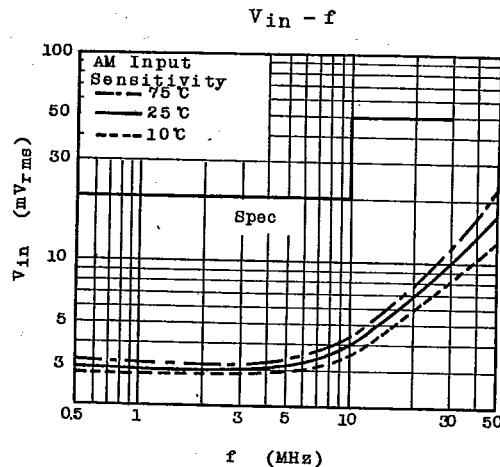
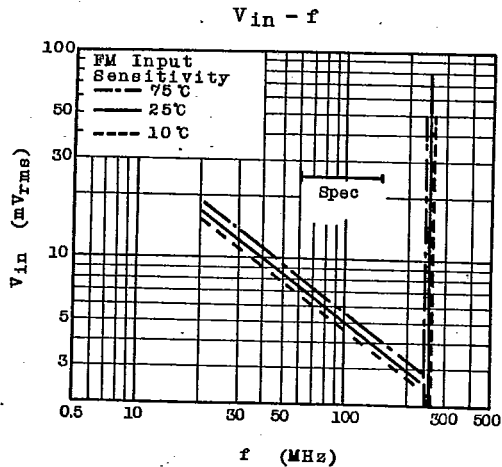
R=82kΩ

Register for prevents free-running oscillation.

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TYPICAL CHARACTERISTICS



This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.