

## SINGLE-CHIP FM/AM RADIO IC—YD1191

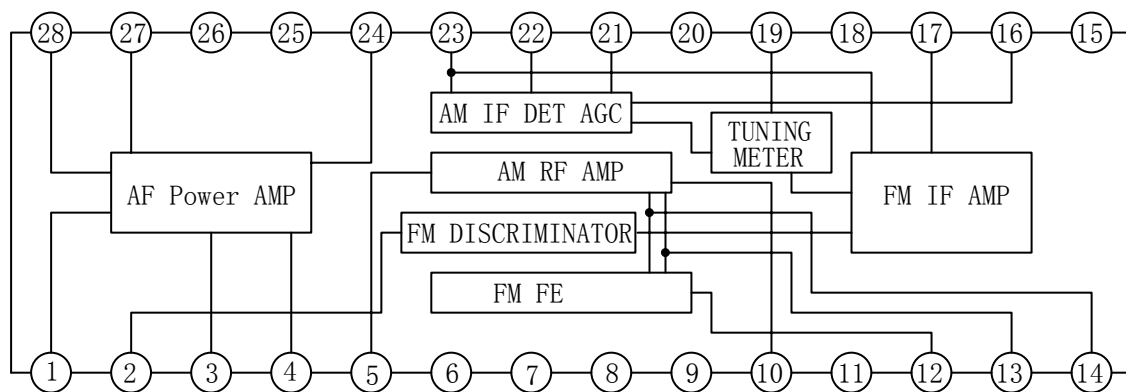
### DESCRIPTION

The YD1191 is a one-chip FM/AM radio IC designed for radio-cassette tape recorders.

### FEATURES

- \*Small number of peripheral components.
- \*Low current consumption ( $V_{cc}=3V$ )
  - For FM:ID=5.3mA (Typ.)
  - For AM:ID=3.4mA (Typ.)
- \*Built-in FM/AM select switch.
- \*Built-in RF AGC, IF AGC circuit.
- \*Tuning LED driver.
- \*Large output of AF amplifier.
  - $V_{cc}=6V$ ,EIAJ output=500mW (Typ.)
  - When load impedance  $8\ \Omega$

### BLOCK DIAGRAM



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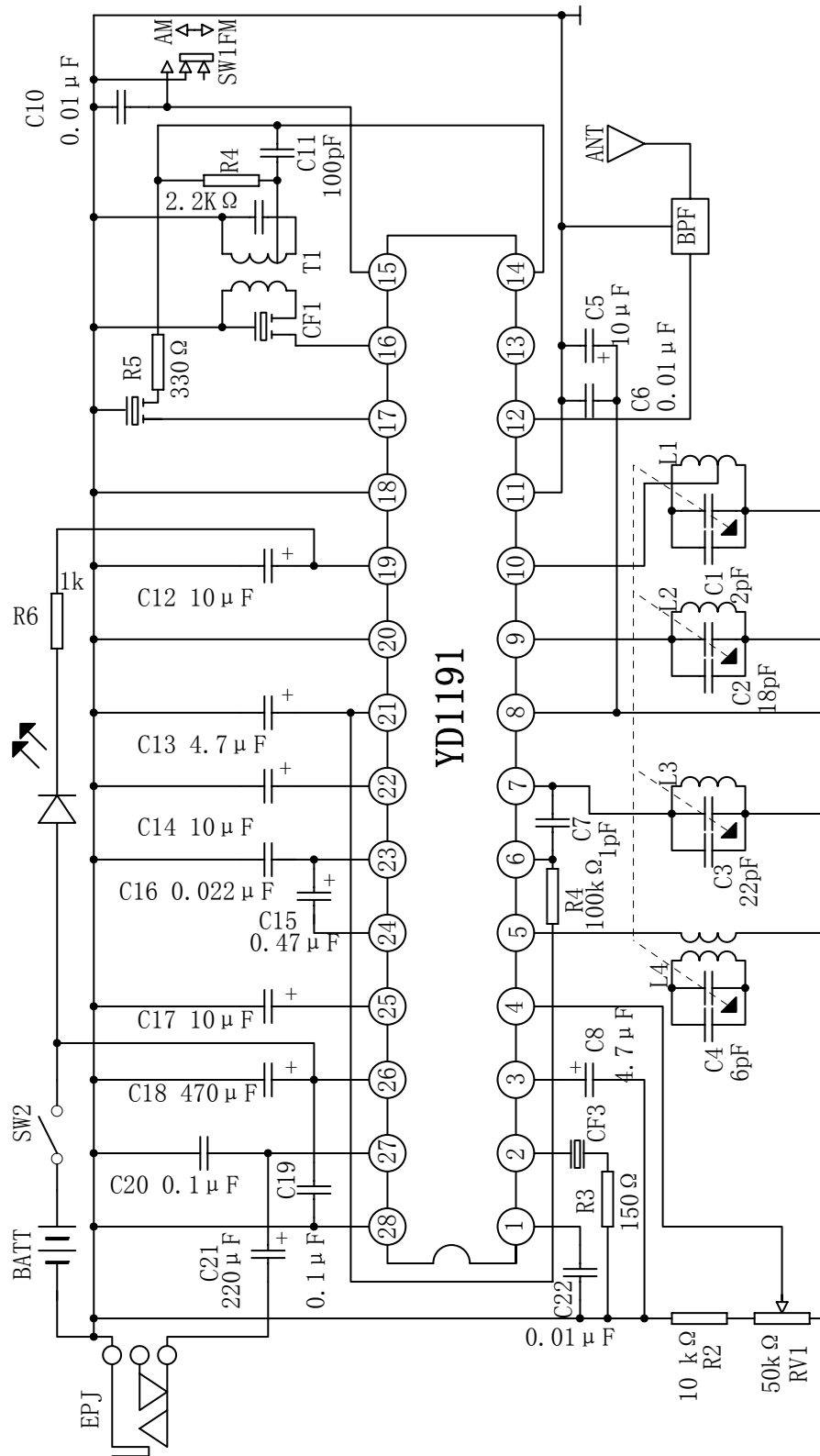
**ABSOLUTE MAXIMUM RATINGS** (Tamb=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V <sub>CC</sub>	9	V
Power Dissipation	P <sub>D</sub>	700	mW
Operating Temperature	T <sub>opr</sub>	-10~+70	°C
Storage Temperature	T <sub>stg</sub>	-50~+125	°C

**ELECTRICAL CHARACTERISTICS** (Tamb=25°C, V<sub>CC</sub>=6V, Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Quiescent Current	I <sub>ccq</sub>	AM, Vin=0		3.5	10.0	mA
		FM, Vin=0		7.0	14.0	
<b>FM:</b>						
Front End Voltage Gain	A <sub>v1</sub>	Vin1=40dB μ V/100MHz	32	39	46	dB
Detection Output	V <sub>D1</sub>	Vin1=90dB μ V/10.7MHz (1kHz,22.5kHz DEV)	39	77.5	155	mV
IF Knee Level	V <sub>SEN1</sub>	V <sub>in3</sub> =level at a point 3dB down		24	32	dB μ V
Detection Output Distortion Factor	THD1	Vin1=90dB μ V/10.7MHz (1KHz, 75kHz DEV)		0.3	2.0	%
FM Meter Current	I <sub>BI</sub>	Vin3=60dB μ V/10.7MHz	1.8	3.5	7.0	mA
<b>AM:</b>						
Front End Voltage Gain	A <sub>v2</sub>	Vin2=80dB μ V/1660kHz	15	22	29	dB
IF Voltage Gain	V <sub>SEN2</sub>	455kHz(kHz 30% MOD), output is -3.4dBm	14	20	27	dB μ
Detector Output	V <sub>D2</sub>	Vin3=85dB μ V/455kHz (1kHz, 30%MOD)	39	77.5	155	mV
Meter Current	I <sub>B2</sub>	Vin3=85dB μ V/455kHz (kHz, 30%MOD)	1.3	3.0	7.0	mA
Detection Output Distortion Factor	THD2	Vin2=95dB μ V/1660kHz (1kHz, 30%MOD), V <sub>cc</sub> =7.8V		0.6	2.0	%
Audio Voltage Gain	A <sub>v3</sub>	Vin3=60dB μ V/10.7MHz Vin4=30dBm/1kHz	27	31.5	36	dB
Audio Distortion Factor	THD3	Vin3=60dB μ V/10.7MHz Vin4=-20dBm/1kHz Output is 50mW		0.3	2.5	%
Muting Level	A <sub>v4</sub>	Vin3=0dB μ V/10.7MHz Vin4=-20dBm/1kHz Output is 50mW	8	15	22	dB

APPLICATION CIRCUIT



OUTLINE DRAWING

