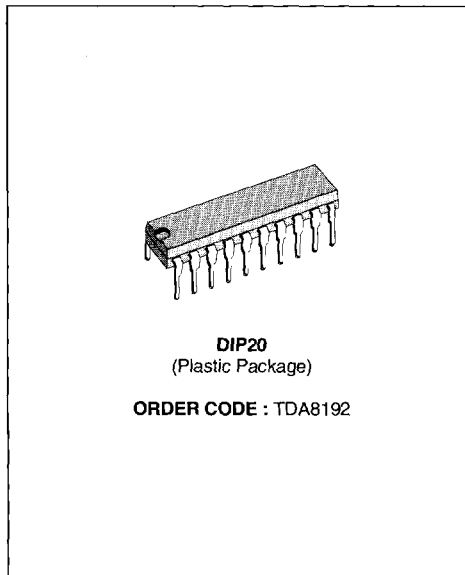


MULTISTANDARD AM AND FM SOUND IF CIRCUIT FOR TV

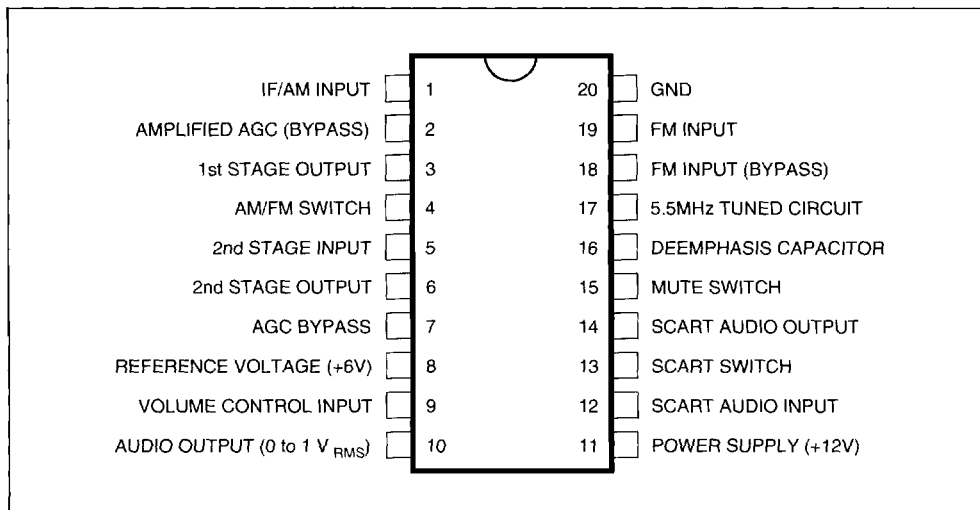
- A 2-STAGE GAIN CONTROLLED AMPLIFIER, PROVIDING COMPLETE IF GAIN ; (AM SECTION)
- A PEAK DETECTOR AND INTEGRATION WHICH PROVIDES AGC-VOLTAGE ; (AM SECTION)
- A 6-STAGE LIMITING AMPLIFIER FOLLOWED BY A SYNCHRONOUS DEMODULATOR AND DEEMPHASIS NETWORK ; (FM SECTION)
- AN AUDIO PREAMPLIFIER
- A CIRCUIT PROVIDING AM/FM SWITCHING AND MUTE FACILITIES
- AN EXTERNAL AUDIO INPUT CIRCUIT WITH SWITCHING FACILITIES TO DELIVER EITHER THE DEMODULATED IF, OR THE EXTERNAL AUDIO SIGNAL AT THE OUTPUT FULLY COMPATIBLE WITH THE SCART EUROPEAN NORM EN50 049
- A DC CONTROLLED VOLUME CIRCUIT

DESCRIPTION

The demodulated IF signal is always available at a low impedance output.

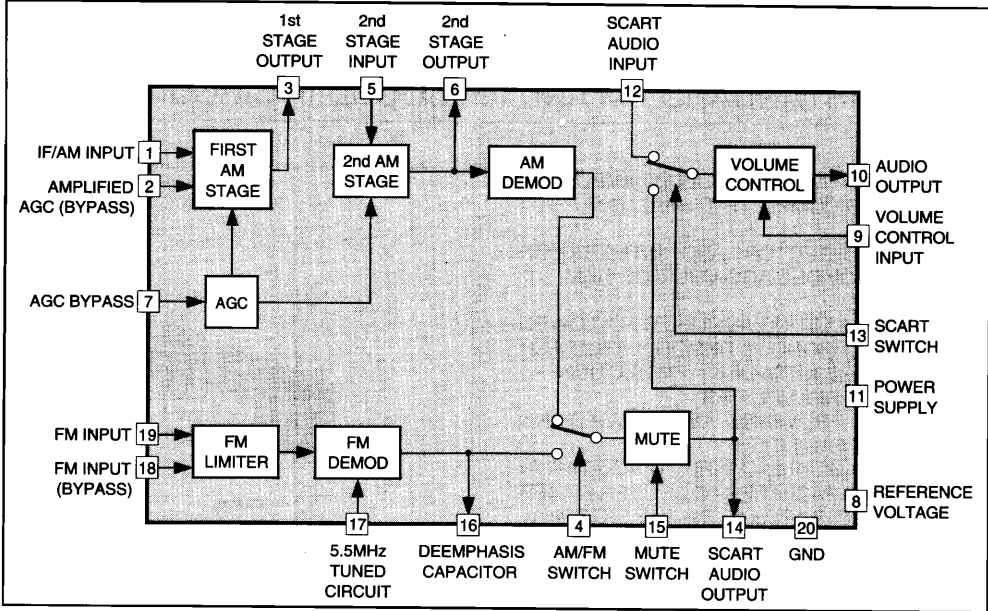


PIN CONNECTIONS



8192/01/EP5

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _s	Supply Voltage	16	V
P _{tot}	Total Power Dissipation at T _{amb} ≤ 70°C	800	mW
T _{op}	Operating Temperature	0 to 70	°C
T _{stg} , T _j	Storage and Junction Temperature	- 55 to 150	°C

THERMAL DATA

Symbol	Parameter	Value	Unit
R _{th j-amb}	Thermal Resistance Junction-ambient	Max. 100	°C/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, $V_S = 12\text{V}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Supply Voltage		10.8	12	13.2	V
I_d	Supply Current	$V_i = 0$ AM FM		30 30		mA mA

AM SECTION ($f_i = 39.2\text{MHz}$, $V_i = 1\text{mV}$, $m = 0.8$, $f_m = 1\text{kHz}$ unless otherwise specified)

V_i	Input Sensitivity	$S/N = 26\text{dB}$		35		μV
$\frac{S+N}{N}$	Signal to Noise Ratio	$V_i = 0.1\text{mV}$ $m = 0.3$ $V_i = 1\text{mV}$ $V_i = 10\text{mV}$		36 50 56		dB
V_i	AGC Range	$\Delta V_{OUT} = -1$ to $+1\text{dB}$		66		dB
V_o	Recovered Audio Signal		0.6	1	1.5	V_{RMS}
d	Distortion (1)				3	%
d	Distortion (2)				3	%
R_i	Input Resistance between Pins 1 and 2	$m = 0$	2			$\text{k}\Omega$
C_i	Input Capacitance between Pins 1 and 2	$m = 0$		18		pF

FM SECTION ($f_i = 5.5\text{MHz}$, $V_i = 1\text{mV}$, $\Delta f = \pm 50\text{KHz}$, $f_m = 1\text{kHz}$, unless otherwise specified) (continued)

V_i	Input Limiting Voltage	-3dB Limiting Point		30		μV
AMR	Amplitude Modulation	$V_i = 30\text{mV}$, $m = 0.3$		55		dB
$\frac{S+N}{N}$	Signal to Noise Ratio	$V_i = 1\text{mV}$	60			dB
d	Distortion (3)				1.5	%
d	Distortion (4)			2		%
V_o	Recovered Audio Signal		0.5	1	1.5	V_{RMS}
R_i	Input Resistance	$\Delta f = 0$	2			$\text{k}\Omega$
C_i	Input Capacitance	$\Delta f = 0$		14		pF
C_T	Crosstalk AM/FM			70		dB

AM/FM AND MUTE SWITCHING

	FM "on" (pin. 4)		2.5		V_S	V
	AM "on" (pin 4)		0		0.8	V
	Mute "on" (pin 15)		0		1	V
	Mute "off" (pin 15)		5		V_S	V
	Signal Attenuation for Mute "off"		70			dB
	Mute Switch Current				110	μA
	AM/FM Switch Current		50		250	μA

SCART SWITCHING

	Mode Selection Voltage : TV Selected (pin. 13)		0		5	V
	Mode Selection Voltage : Scart Selected (pin 13)		8		12	V
	Scart Switch Input Resistance		10			$\text{k}\Omega$
	Scart Audio Input Amplitude (pin 12)			0.5	2	V_{rms}
	Crosstalk Between Switched Inputs (TV scart)			80		dB

DC VOLUME CONTROL

	Audio Output Impedance (pin 10)				1	$\text{k}\Omega$
	Control Range			90		dB
	Output/input Gain for Maximum Gain Control			0		dB
	Gain Control Voltage		0.5		4.5	V
	Noise Level (DIN 45405)			25		μV_{rms}

- (1) 50% volume setting, $V_i = 1\text{mV}$
 (2) 50% volume setting, $V_i = 10\text{mV}$
 (3) $V_i = 1\text{mV}$, $f_m = 100$ to 10.000Hz
 (4) $V_i = 1\text{mV}$, $\pm 20\text{KHz}$ offset (detuning of phase shift filter).

TEST CIRCUIT

