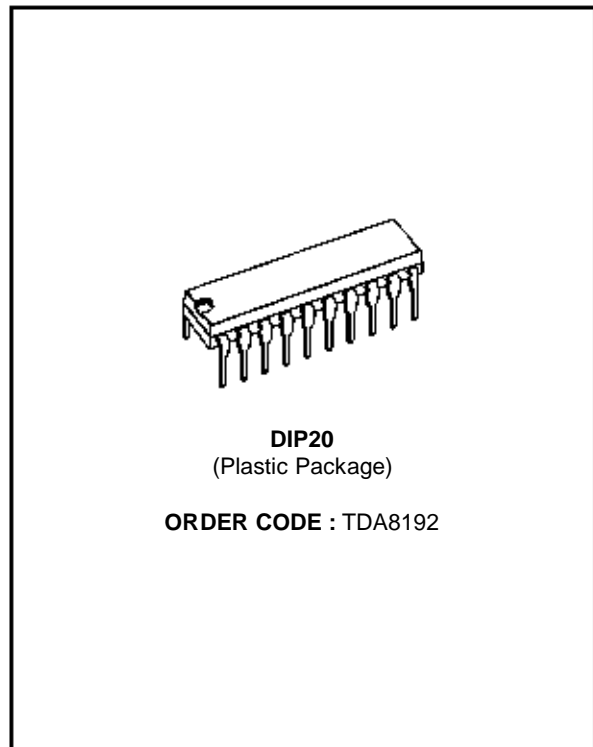


**MULTISTANDARD AM AND FM SOUND IF CIRCUIT FOR TV**

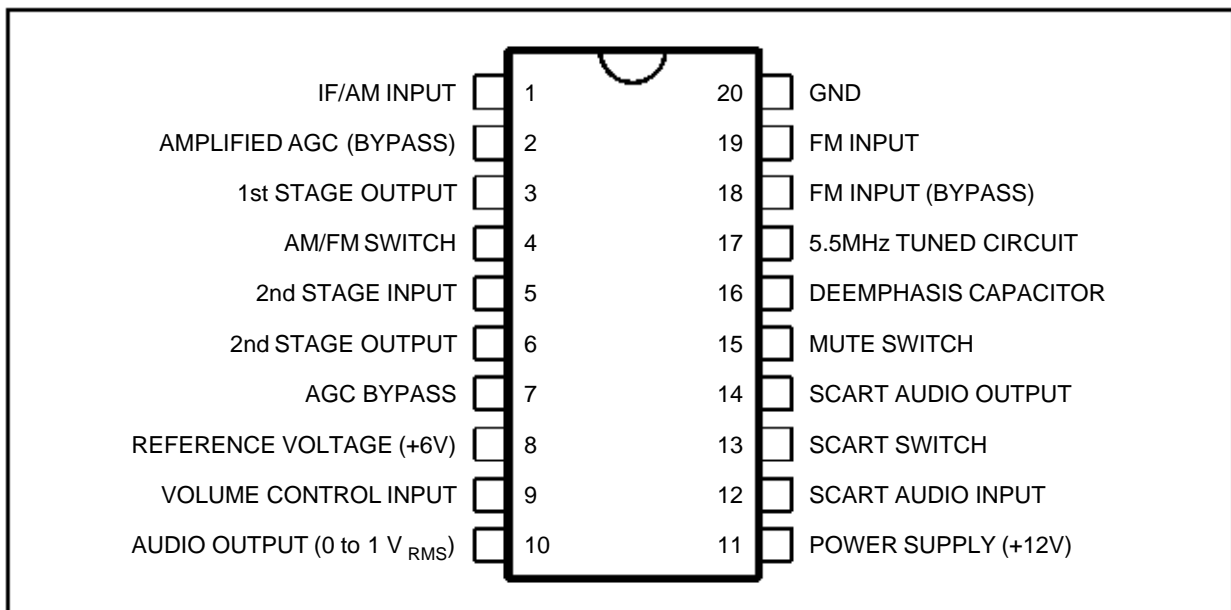
- A 2-STAGE GAIN CONTROLLED AMPLIFIER, PROVIDING COMPLETE IF GAIN ; (AM SECTION)
- A PEAK DETECTOR AND INTEGRATION WHICH PROVIDES AGC-VOLTAGE ; (AM SECTION)
- A 6-STAGE LIMITING AMPLIFIER FOLLOWED BY A SYNCHRONOUS DEMODULATOR AND DEEMPHASIS NETWORK ; (FM SECTION)
- AN AUDIO PREAMPLIFIER
- A CIRCUIT PROVIDING 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**

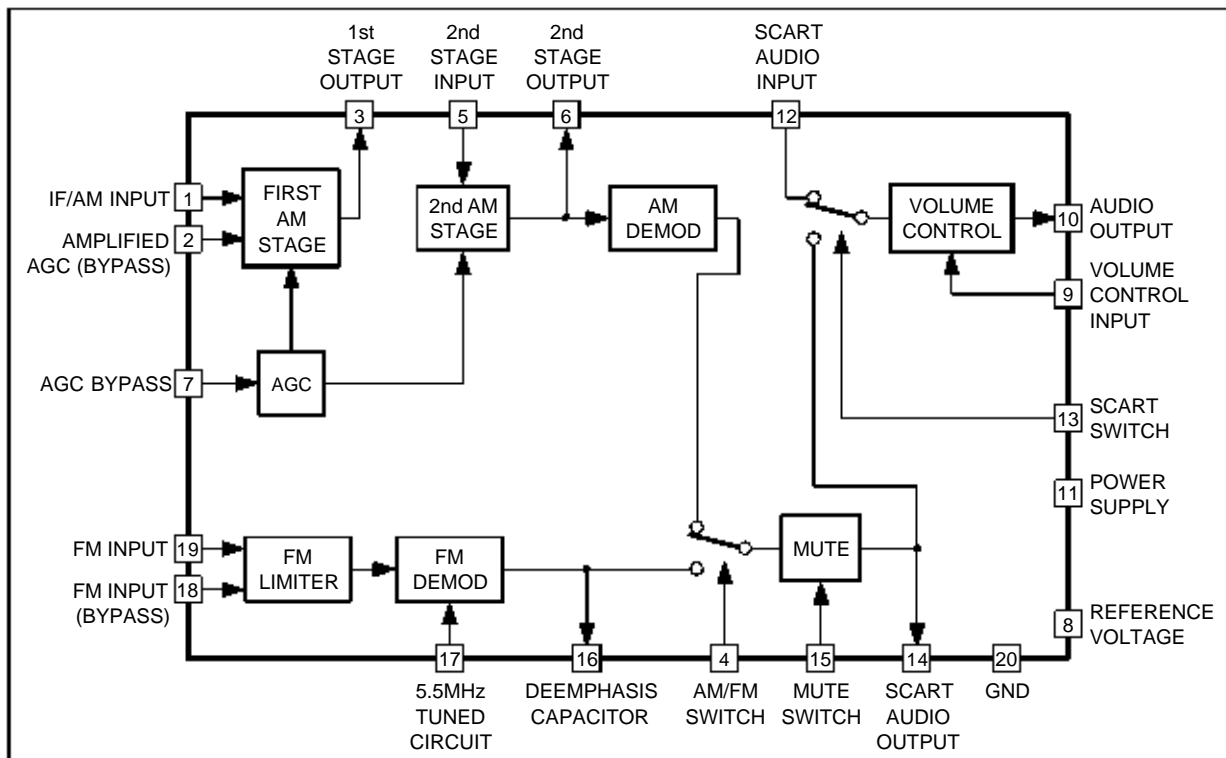
The demodulated IF signal is always available at a low impedance output.

**PIN CONNECTIONS**



8192-01.EPS

**BLOCK DIAGRAM**



8192-02.EPS

**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_S$	Supply Voltage	16	V
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 70^\circ\text{C}$	800	mW
$T_{op}$	Operating Temperature	0 to 70	$^\circ\text{C}$
$T_{stg}, T_j$	Storage and Junction Temperature	- 55 to 150	$^\circ\text{C}$

8192-01.TBL

**THERMAL DATA**

Symbol	Parameter	Value	Unit
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max. 100	$^\circ\text{C/W}$

8192-02.TBL

**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 = 26dB		35		$\mu\text{V}$
$\frac{S+N}{N}$	Signal to Noise Ratio	$V_i = 0.1\text{mV}$ $m = 0.3$ $V_i = 1\text{mV}$ $V_i = 10\text{mV}$	50	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		$\mu\text{V}$
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	$\mu\text{A}$
	AM/FM Switch Current		50		250	$\mu\text{A}$

## SCART SWITCHING

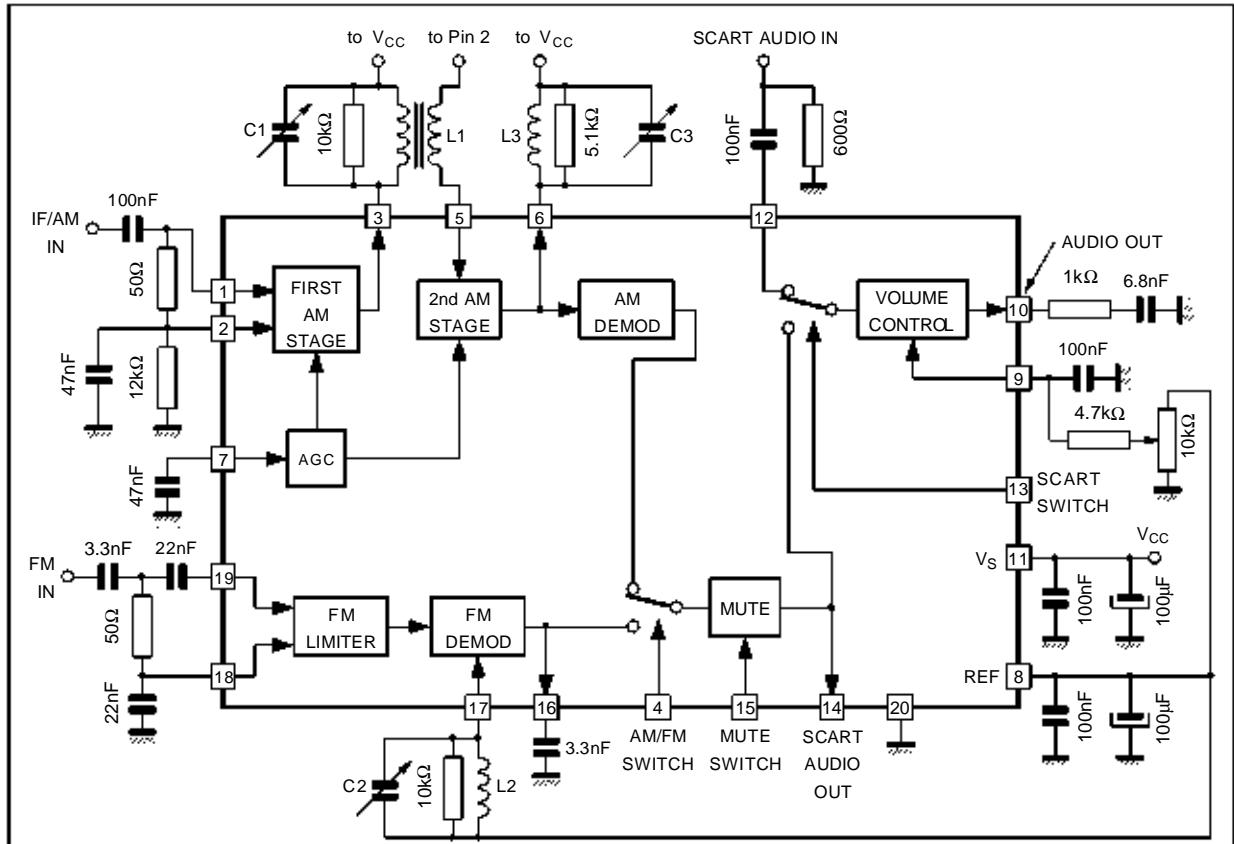
	Mode Selection Voltage : TV Selected (pin. 13)		0		5	V
	Mode Selection Voltage : Scart Selected (pin 13)		8		12	V
	Scart Switch Input Resistance		10			$\text{k}\Omega$
	Scart Audio Input Amplitude (pin 12)			0.5	2	$V_{rms}$
	Crosstalk Between Switched Inputs (TV scart)			80		dB

## 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		$\mu\text{V}_{rms}$

- (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  $10.000\text{Hz}$   
(4)  $V_i = 1\text{mV}$ ,  $\pm 20\text{KHz}$  offset (detuning of phase shift filter).

TEST CIRCUIT

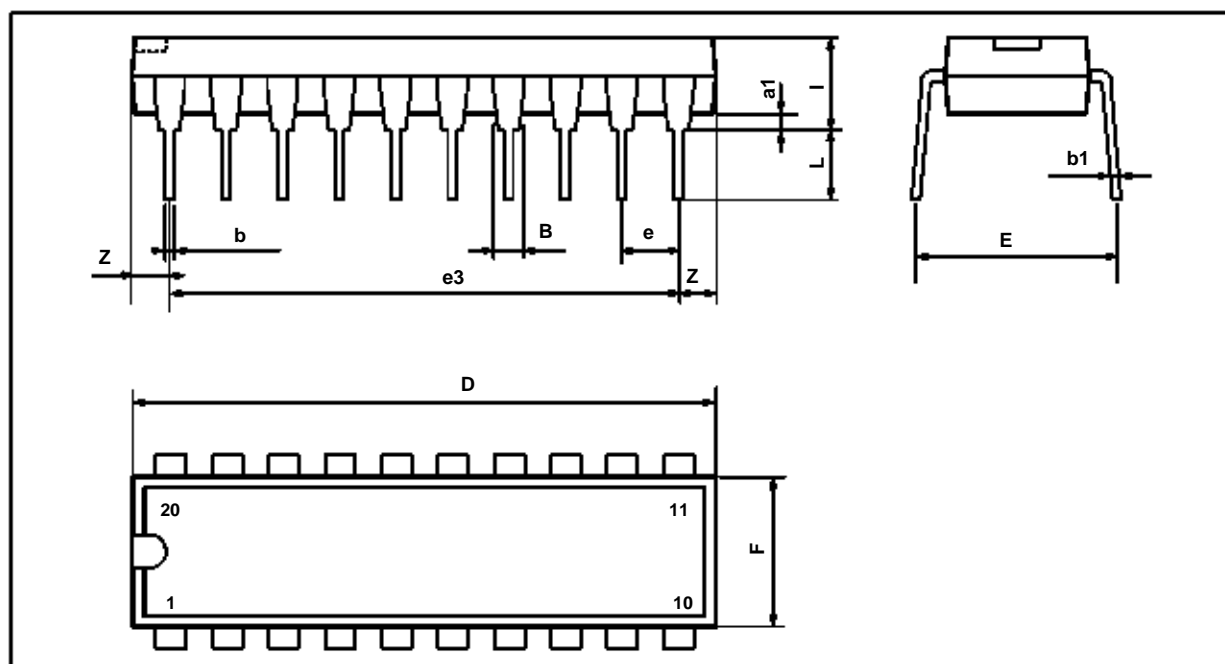


L1 = L2 : Qu = 95 at fo = 39.2MHz with Co = 100pF (TOKO HBKOCE-K5807 CF)  
 L3 : Qu = 80 at fo = 5.5MHz with Co = 68pF (TOKO BKAC-K1640 HM)

8192-03.EPS

## PACKAGE MECHANICAL DATA

20 PINS - PLASTIC DIP



PM-DIP20.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.065
b		0.45			0.018	
b1		0.25			0.010	
D			25.4			1.000
E		8.5			0.335	
e		2.54			0.100	
e3		22.86			0.900	
F			7.1			0.280
i			3.93			0.155
L		3.3			0.130	
Z			1.34			0.053

DIP20.TBL

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