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TEMIC

TELEFUNKEN Hochfrequenztechnik GmbH

FM-TUNER 1896DFC

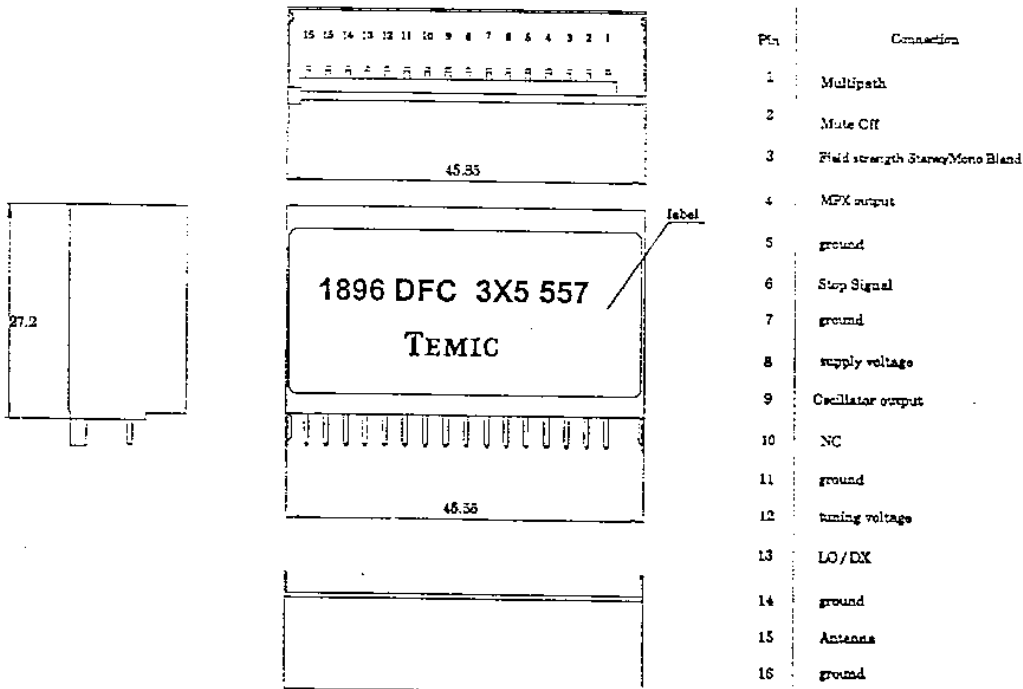
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FINAL ELECTRICAL SPECIFICATION

A) DESCRIPTION

The FM Tuner 1896 DFC is designed for high quality car radios. The frequency range is from 87.5 Mhz to 107.9 Mhz. The RF portion of the tuner incorporates a tunable band stop circuit to improve the image rejection. The high input sensitivity is realised by a band pass filter and three additional ceramic filters.

The input stage gain is automatically adjusted when a strong input signal is detected to enable the detection of weak signals in the presence of strong interfering stations.



B) TUNER INTERFACE

- Multipath: Identification output provides an analog dc voltage ($5V_{DC}$ to $0V_{DC}$) during multipath interference.
- Mute: With muting " ON " (active) , audio output muting of up to 40 dB can be obtained when no RF signal is received at the antenna.
- LO/DX : At this pin the search /seek sensitivity of the FM tuner can be changed by altering the DC level.
- Stop Signal : This signal is active low and generated by the field strength level and the frequency deviation signal. The stop signal sensitivity is adjusted by the LO/DX input.
- Field strength : If a weak input signal is detected , a low level field strength will blend the radio from stereo to mono mode to preserve the fidelity of the audio output.
- Oscillator output : The oscillator output is provided for an external frequency synthesizer. The oscillator frequency is set at 10.7 MHz (IF) above the intended reception frequency.
- MPX Output : Output with a typical strength of 250 mV RMS.

C) ELECTRICAL DATA

TEST #	PARAMETER	MIN.	TYP.	MAX.	UNIT
1	Survival Voltage	---	---	12	Volts
2	Operation Supply Voltage	7.5	---	12	Volts
3	Testing Supply Voltage	---	8.7	---	Volts
4	Supply Current at 8.7 Volts	---		90	mA
5	Tuning Range	87.5	---	107.9	MHz
6	Tuning Voltage Range	1.5	---	7.5	Volts
7	30 dB S+N/N 22.5 KHz Dev., 400 Hz Mod.	---		3.0	μ V
8	Mute Characteristic 22.5 KHz Dev., 1 KHz Mod.				
	Vin = 3 μ V	0	---	-3	dB
	Vin = 0	-7	-17	-25	dB

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9	Multipath Output active 75 KHz Dev. AF 15 KHz AM 100% RF level = 35 dB μ V	0.2		0.6	Vdc
10	Channel Selectivity 200 kHz	42	50	---	dB
	400 kHz	60	70	---	dB
11	Three-Signal Intermodulation	60		---	dB
12	Image Rejection	60	65	---	dB
13	IF Rejection	85	90	---	dB
14	Oscillator Level across 520 Ω	120	160	500	mV
15	Spurious Radiation	Compliant with european EN and US FCC Part 15 requirements			
16	Distortion at high input level 1 mV RF 60.0 KHz Dev., 1KHz	---	0.4	1.0	%
17	Distortion at 4 μ V 22,5 KHz Dev., 1 KHz	---	1	6	%
18	Strong Signal Distortion 22.5 KHz Dev. Vin up to 2 V RF input	---	0.3	1.5	%
19	AM Suppression	60	---	---	dB
20	Audio Output Voltage Level at 22.5 KHz Dev., 50K load	65	---	95	mV
	at 75.0 KHz Dev., 50K load	215	---	285	mV
21	Audio Output Resistance	---	---	6	K Ω
22	Sensitivity of Stop Signal 1,7V applied to LO/DX Input	15	35	60	μ V
	0 V at LO/DX	4	---	12	μ V

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Revision: 03

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23	Stop Signal Bandwidth reference to center tuning unmodulated carrier	± 15	± 45	± 75	KHz
24	Stop Signal Detuning	---	---	± 25	KHz
25	S+N/N at high input level 75 KHz Dev., 1 KHz $V_{in} = 1 \text{ mV RF}$	60	67	---	dB
26	Field Strength Output Voltage				V
	at 10 μV input signal	2.1	---	2.7	V
	at 55 μV input signal	2.8	---	3.4	V
	at 1 mV input signal	4	---	5	V

D) Temperature Range

Parametric temperature range :	-30 ... + 70°C
Operational temperature range:	-40 ... + 85°C
Storage temperature range:	-40 ... + 85°C

E) Test Conditions

1.	Antenna Impedance	50 Ohm
2.	Antenna Dummy	50 Ohm
3.	Ambient Temperature	25 °C