

MODEL 7916 DTMF RECEIVER

DESCRIPTION

The 7916 is a complete DTMF receiver designed in a 32 pin Dip hybrid I.C. package. No external components are required for operation as a 1 of 16 output coded receiver detecting any one of the standard 16 DTMF digits.

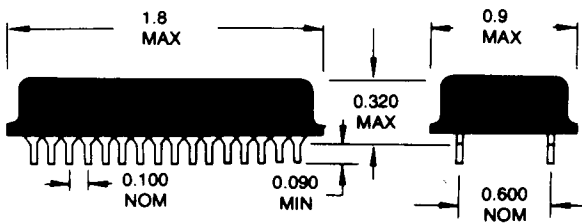
PACKAGE INFORMATION

32 Pin Dual In-Line Package (dimensions in inches)

Mechanical Characteristics

Substrate Metallized, 96% alumina
 Cover Gold Flashed, deep drawn Brass
 Pins Tinned Kovar

LEAD TEMPERATURE (during soldering)
 At distance $1/6 \pm 1/32$ inch from case for
 10 seconds max. 200°C

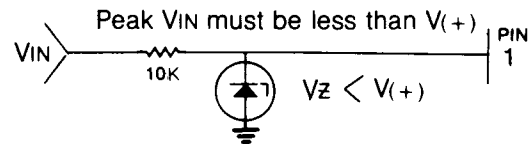


PIN ASSIGNMENT MODEL 7916

Function	Pin	Pin	Function
SIG in	1	32	Data D (Spare)
N/C	2	31	Data C (Spare)
N/C	3	30	Data B (Spare)
N/C	4	29	Data A
N/C	5	28	Data #
N/C	6	27	Data *
447 KHZ CLK	7	26	Data 0
GND	8	25	Data 9
(+) Vs	9	24	Data 8
N/C	10	23	Data 7
N/C	11	22	Data 6
N/C	12	21	Data 5
1633 Hz INH	13	20	Data 4
Any Data	14	19	Data 3
N/C	15	18	Data 2
N/C	16	17	Data 1

(VIEWED FROM TOP)

WARNING



PERFORMANCE SPECIFICATIONS, MODEL 7916 DTMF RECEIVER (Vs=12v., Ta=25° C)

PARAMETER	CONDITION	MIN	TYPICAL	MAX	UNITS
Input Level, High	Each Tone			+6	dBm
Input Level, Low	Each Tone	-20			dBm
Input Impedance			43		k ohm
Dial Tone Rejection	Note 1		36		dB
Twist	Hi/Lo grp	-8		+4	dB
Guard Time	Note 2			39	mS
Fault Time	Note 3		12		mS
In Band Tone Rejection	Note 4		17		dB
Detect Bandwidth		$\pm 1.5\% + 2\text{Hz}$	± 2.3		% of Nominal
Invalid Tone Reject Limit	Tones Pulsed	-3.5		+3.5	% of Nominal
Tone Pair Duration, Invalid				12	mS
60 and 12 Hz Rejection			40		dB
Signal to Noise Ratio	3kHz White Noise ($P_e = 10^{-4}$)		14		dB
Talk-Off (Speech Simulations)	Strobe Note 5		2	10	HITS
D.C. Input Blocking Voltage	Pin 1 to ground			50	Volts
Operating Voltage		10.8	12	13.2	V
Operating Current			30		mA
Operating Temperature		0		+70	oC
Storage Temperature		-30		+85	oC
Output Level, Logic "1"	I Source = 2.0 mA	V-0.5	(+) Supply		V
Output Level, Logic "0"			(-) Ground	Vg+0.3	V
Output Rise or Fall Time	10% to 90% of total			4	uS
Interdigit Interval	(w/30pf load)	15			mS

NOTES:

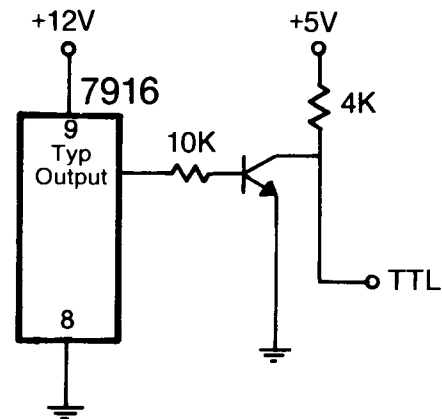
1. Precise dial tone (350-440Hz) present at -10 dBm.
2. Guard time is defined as the receiver response time to a tone input pulse.
3. Fault time is the time a tone pulse may be interrupted without the receiver output resetting.
4. Third frequency is 1700 Hz to 4000 Hz and a -1 dB with respect to high group tone.
5. Based on Mitel test tape (CM7290). Equivalent to 100 hrs exposure on speech signals.

7916 DTMF RECEIVER TRUTH TABLE

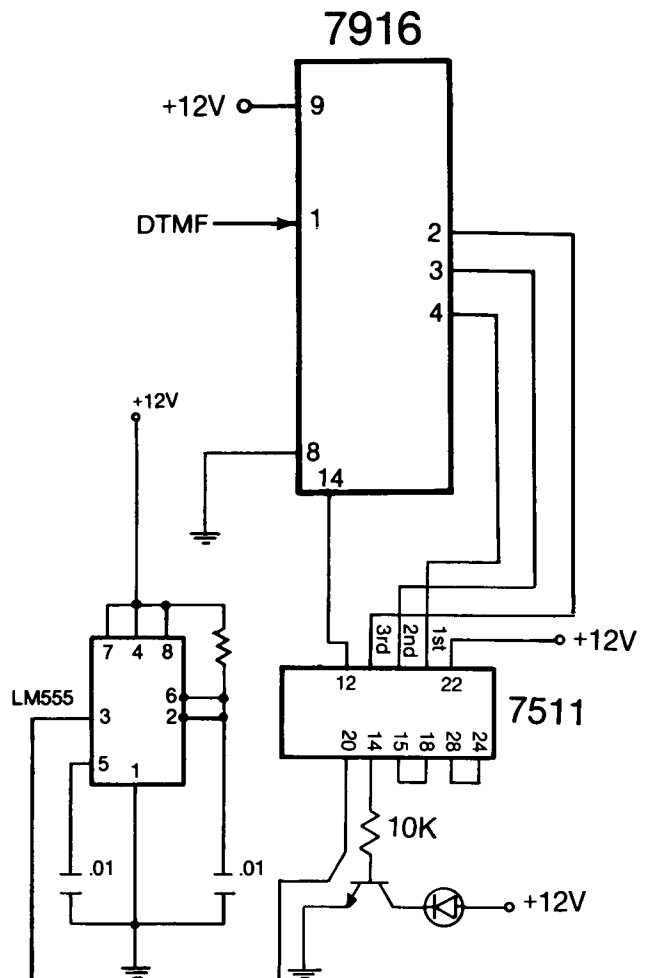
Digit	INPUT 2 of 8 Tone Frequencies	OUTPUT	
		STROBE or Any Data (PIN 14)	Decoded 1 of 16 (PIN NO.)
1	697 + 1209	H	17
2	697 + 1336	H	18
3	697 + 1477	H	19
4	770 + 1209	H	20
5	770 + 1336	H	21
6	770 + 1477	H	22
7	852 + 1209	H	23
8	852 + 1336	H	24
9	852 + 1477	H	25
0	941 + 1336	H	26
*	941 + 1209	H	27
#	941 + 1477	H	28
A SPARE	697 + 1633	H	29
B SPARE	770 + 1633	H	30
C SPARE	852 + 1633	H	31
D SPARE	941 + 1633	H	32

.1633 INH: No 1633 Hz Open or High
1633 Hz Active Low

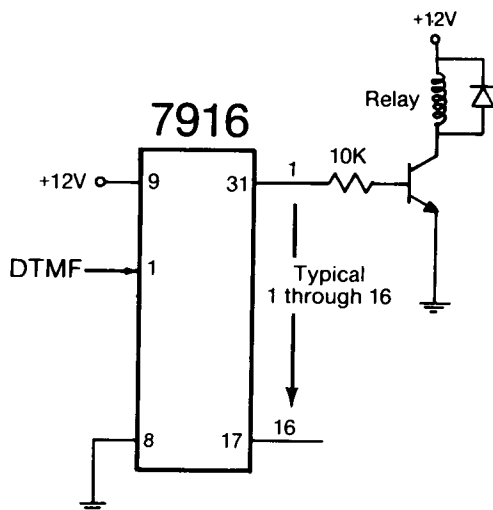
CMOS to TTL INTERFACE



SELECTIVE CALL RECEIVER



DATA COMMUNICATIONS



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2772 Main Street • Irvine, California 92714

[714] 754-6330
Telex: 681416