aptek technologies

AMS3101-LV
Central Office Quality Receiver

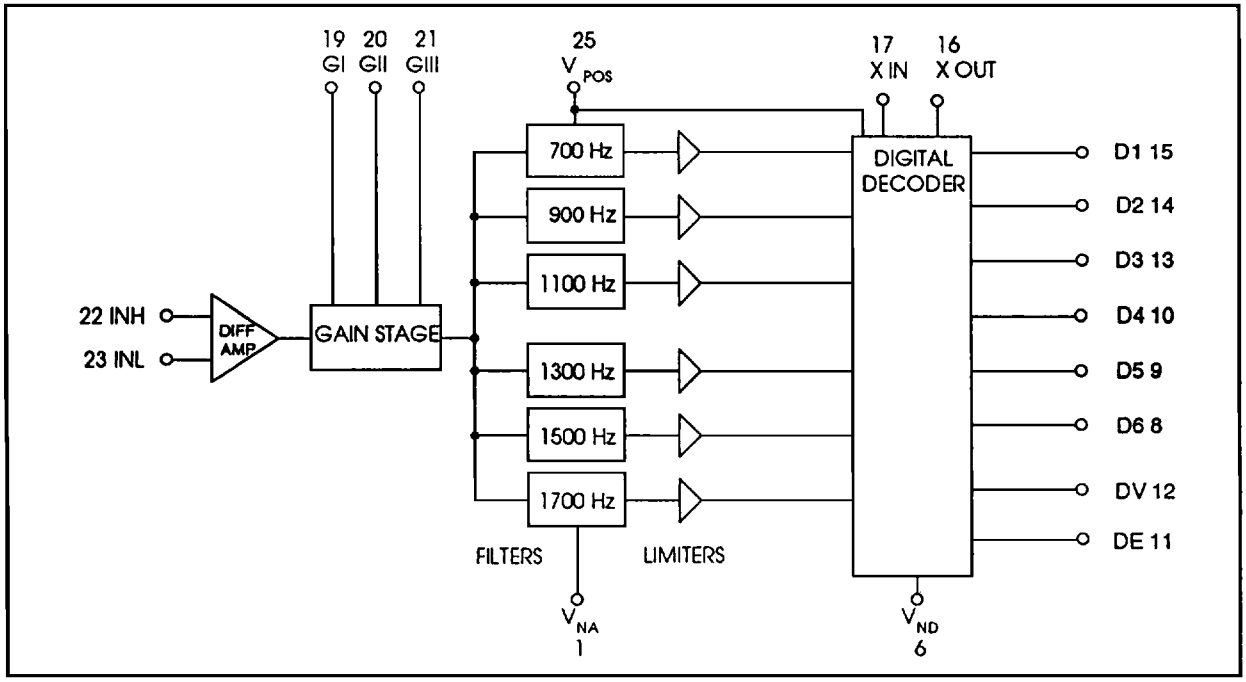
DESCRIPTION

The AMS 3101-LV is a complete Multi-Frequency (MF) Receiver for use with either the U.S. R1 or European CCITT #5 signalling formats. It consists of six internal bandpass filters and limiters combined with a proprietary monolithic decoder. Eight outputs are provided. Six indicate the individual tones received. One indicates valid 2 of 6 code, and another indicates that an improper tone combination (single tone or more than two tones) has been received. The 3101-LV requires only a single 2.976 MHz crystal for proper operation. Since this crystal determines the frequency offset tolerance and the timing for detection, the receiver is unaffected by wide voltage and temperature variations.

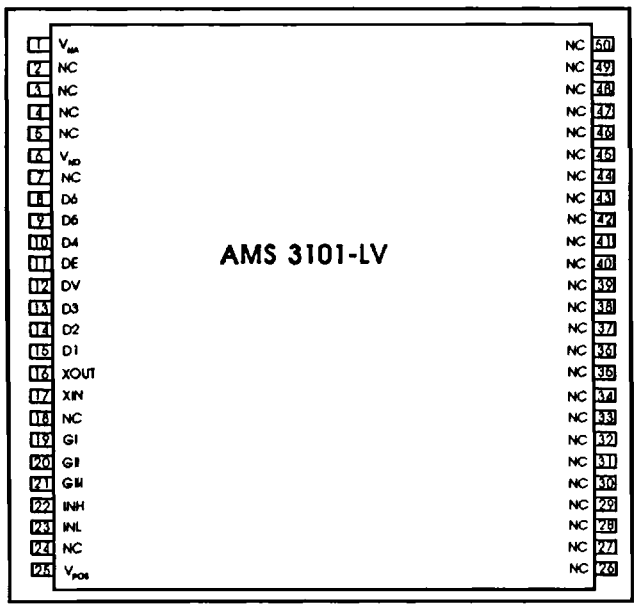
Separate supplies are provided for the analog and digital portions of the receiver. This enables optimum interfacing with output logic and with the analog circuitry at the input.

FEATURES

- Meets Bell MFR1 and CCITT #5 Specifications
- Provides 2 of 6 Detection
- Error Signal for Improper Codes
- Low Power
- Adjustable Gain
- Requires only 2.976 MHz Crystal
- Flexible Power Supply and Interfacing Requirements



PINOUT DRAWING



PIN DESCRIPTION

PIN	NAME	DESCRIPTION
22	INH	Input Signal High
23	INL	Input Signal Low
19 20 21	GI GII GIII	Gain Adjust, Resistor from GI to GII Increases Sensitivity, Resistor from GII to GIII Decreases Sensitivity, GIII is Buffered Output of Signal from INH to INL
25	V_{POS}	Most Positive Power Supply Input
1	V_{NA}	Negative Power Supply Input for Analog Selection
6	V_{ND}	Negative Power Supply Input for Digital Section Digital Output Swing from V_{POS} to V_{ND}. See page 4 Note 1.
15	D1	700 Hz Data Output
14	D2	900 Hz Data Output
13	D3	1100 Hz Data Output
10	D4	1300 Hz Data Output
9	D5	1500 Hz Data Output
8	D6	1700 Hz Data Output
12	DV	Data Valid Output. Indicates Valid Tone Pair has been present for minimum detection time.
11	DE	Data Error Output. Indicates presence of Invalid Tone Combination for longer than evaluation period.
17 16	XIN XOUT	Crystal Oscillator Input Crystal Oscillator Output. A 2.976 MHz Parallel Resonant Crystal must be connected between XIN and XOUT for proper operation.
	NC	All other pins must not be connected.

ELECTRICAL CHARACTERISTICS

ABSOLUTE MAXIMUM RATINGS

(all voltages referred to V_{NA} or V_{ND}) Operation above absolute maximum ratings may per manently damage device.

Supply Voltage (V_{POS} - V_{NA}) (V_{POS} - V_{ND})	+18 +7
Operating Temperature	0°C to 70°C ambient
Storage Temperature	-65°C to 150°C
Power Dissipation at T_A = 25°C derate above T_A = 25°C at	750 mW 10 mW/°C
Lead Temperature (soldering, 10sec)	300°C

DC CHARACTERISTICS

T_A = 0° to 70°C; V_{POS} = 5V; V_{ND} = 0V; V_{NA} = -5V

PARAMETERS	CONDITIONS	MINIMUM	MAXIMUM	UNITS
Digital Supply Voltage	V_{POS} - V_{ND}	4.5	6.0	Volts
Analog Supply Voltage	V_{POS} - V_{NA}	9	18	Volts
Supply Current			30	mA
Digital Output Drive	"0" Level, 1mA Load	V_{ND}	V_{ND} + 0.5	Volts
	"1" Level, 1 mA Load	V_{POS} - 0.5	V_{POS}	Volts

AC CHARACTERISTICS

T_A = 0° to 70°C; V_{POS} = 5V; V_{ND} = 0V; V_{NA} = -5V

PARAMETER	CONDITIONS	MINIMUM	MAXIMUM	UNITS
Must Operate Frequency Offset		±(1.5% + 10HZ)		Hz
Operational Twist Adjacent Tones		8		dB
Operating Level (See page 4 Note 2)		-30	-5	dBm
Non-Operate Level (See page 4 Note 2)			-39	dBm
Must Detect Tone Burst		30		ms
Must Not Detect Tone Burst			10	ms
Must Detect Pause Length		25		ms
Must Not Detect Pause Length			10	ms
Acceptable White Noise Level	Band Limited Gausian Noise 300 - 3,400 Hz		-40	dBm

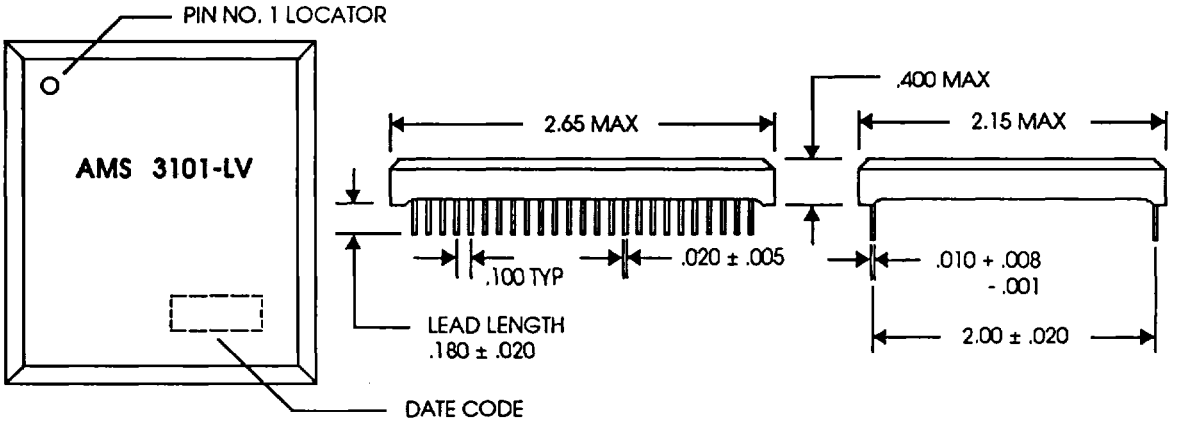
NOTES

Note 1: V_{ND} must not be more negative than V_{NA}

Note 2: Detection threshold is directly proportional to analog supply voltage VPOS-VNA. Other characteristics are independent of supply.

Note3: **Cautionary Notice:** This product is supplied in a non-hermetic plastic shell package. Aqeuous PCB cleaning is therefore not recommended. Please be guided accordingly.

PACKAGE DESCRIPTION



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