TONE DECODER

The LM567C is a monolithic phase locked loop system designed to provide a saturated transistor switch to GND, when an input signal is present within the passband. External components are used to independently set center frequency bandwidth and output delay.

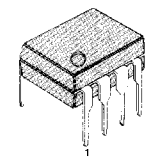
FEATURES

- **Wide frequency range (0.01Hz — 500kHz).**
- **Bandwidth adjustable from 0 to 14%**
- **Logic compatible output with 100mA current sinking capability.**
- **Inherent immunity to false signals.**
- **High rejection of out-of-band signals and noise.**
- **Frequency range adjustable over 20:1 range by an external resistor.**

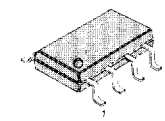
APPLICATIONS

- Touch Tone Decoder
- Wireless Intercom.
- Communications paging decoders
- Frequency monitoring and control.
- Ultrasonic controls (remote TV etc.)
- Carrier current remote controls.
- Precision oscillator.

8 DIP



8 SOP



ORDERING INFORMATION

Device	Package	Operating Temperature
LM567CN	8 DIP	0 ~ +70°C
LM567CD	8 SOP	

BLOCK DIAGRAM

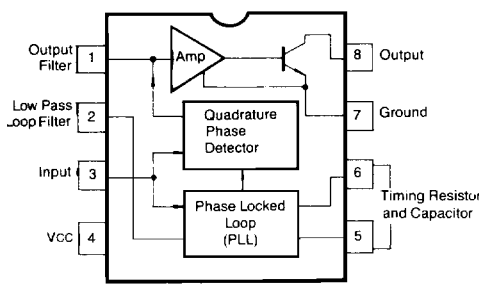


Fig. 1

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

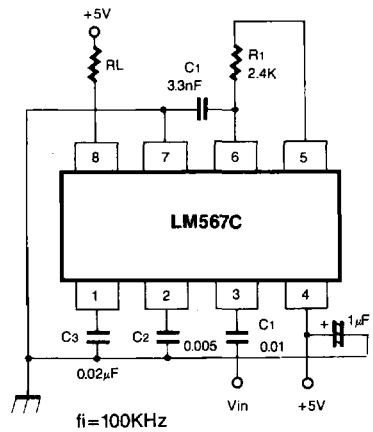
Characteristic	Symbol	Value	Unit
Operating Voltage	V_{CC}	10	V
Input Voltage	V_{IN}	$-10 \sim V_{CC}+0.5$	V
Output Voltage	V_O	15	V
Power Dissipation	Pd	300	mW
Operating Temperature	Topr	$0 \sim +70$	°C
Storage Temperature	Tstg	$-65 \sim +150$	°C

ELECTRICAL CHARACTERISTICS

(V_{CC} = 5.0V, T_a = 25°C unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Voltage Range	V_{CC}		4.75	5.0	9.0	V
Supply Current Quiescent	I_{CC}-1	R_L = 20K	2.0	7	10	mA
Supply Current Activated	I_{CC}-2		5.0	12	15	mA
Quiescent Power Dissipation	P_{OD}			35		mW
Highest Center Frequency	H_{FO}	R_L = 20K	100	500		KHz
Center Frequency Stability	F_{SE}	0°C to 70°C		±60		ppm/°C
Center Frequency Shift With Supply Voltage	F_{CS}			0.7	2	%/V
Largest Detection Bandwidth	B.W		10	14	18	% of fo
Largest Detection B.W Skew	B.Ws			2	3	% of fo
Largest Detection Bandwidth Variation With Supply Voltage	B.Wv			±2	±5	%/V
Largest Detection Bandwidth Variation With Temperature	B.Wt			±0.1		%/°C
Input Resistance	R_{IN}			20		Kohm
Smallest Detectable Input Voltage	V_{IN}-1	I_L = 100mA, fi=fo		20	25	mVrms
Largest No Output Input Voltage	V_{IN}-2		10	15		mVrms
Greatest Simultaneous Outband Signal To Inband Signal Ratio	S1/Sd	R_L = 20k V_{IN} = 300mV_{RMS} fi=fo=100KHz		+6		dB
Minimum Input Signal to Wideband Noise Ratio	S2/Sd	f_{i_1} = 140KHz f_{i_2} = 60KHz		−6		dB
Fastest On-Off Cycling Rate	F_{OUT}	R_L = 20K		fo/20		
Output Leakage Current	I_{CO}	V_{IN} = 25mV_{RMS}		0.01	25	μA
Output Saturaton Voltage	V_{SAT}-1	I_L = 30mA, V_{IN} = 25mVrms		0.2	0.4	V
	V_{SAT}-2	I_L = 100mA, V_{IN} = 25mVrms		0.6	1.0	V
Output Fall Time	T_F	R_L = 50		30		nS
Output Rise Time	T_R	R_L = 50		150		nS

AC TEST CIRCUIT



fi=100KHz
Note: Adjust for fo=100KHz

Fig. 2