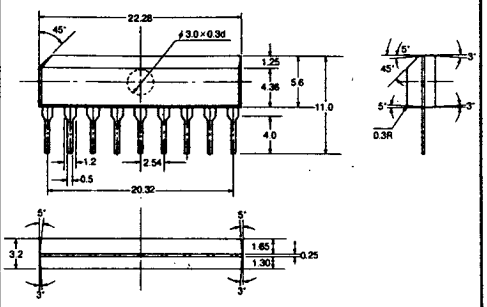
DBL 1009

PLL FM STEREO MULTIPLEX

9SIP Unit: mm



Space merit by the package and wide supply voltage range.

☐ FEATURES

- O Excellent pilot lamp turning-on sensitivity :
  $V_{LAMP(ON)}$ =9mVrms (Typ.)
- O Suitable for LED driving :
  I_{LAMP} =20mA (Max.)
- O Recommendable input voltage range :
  V_{IN} =200~700mVrms
- O Operating supply voltage range :
  V_{CC} =3.5~12V
- O Excellent channel separation through entire audio frequency range :
  CH_{SEP} =45dB (Typ.)
- O Low distortion : THD=0.08% (Typ.) at V_{IN}=200mVrms (stereo)
- O VCO stop capability (The VCO is stopped when the Pin 7 is connected with the power supply line, and then the stereo indicator is turn off.)
- O Easy adjustment (The monitored free running frequency of VCO is 38KHz at Pin 6.)

☐ APPLICATIONS

- O Automotive and portable radios.

☐ MAXIMUM RATINGS (Ta=25°C)

Characteristic		Symbol	Rating	Unit
Supply Voltage		V_{CC}	12	V
Lamp Voltage		V_{LAMP}	16	V
Lamp Current	Continuation	I_{LAMP}	20	mA
	Peak		40	
Operating Temperature		T_{opr}	−30~+ 75	°C
Storage Temperature		T_{stg}	−55~+150	°C
Power Dissipation		P_D	500	mW

* The power dissipation is derated above Ta = 25°C in the proportion of 4mW/°C

☐ ELECTRICAL AC CHARACTERISTICS

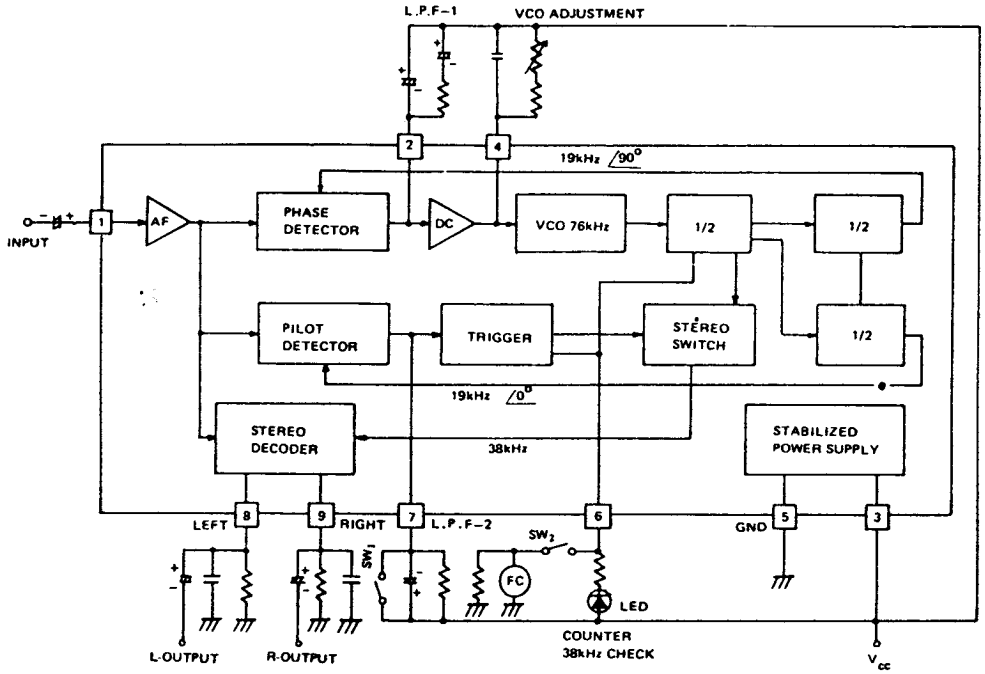
(Unless otherwise specified, Ta = 25°C, V_{CC} = 8V, f = 1kHz)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Current		I_{CC}	at Lamp Off	—	11	18	mA
Input Resistance		R_{IN}	—	—	33	—	kΩ
Max. Composite Signal Input Voltage		$V_{IN(MAX)}$ (Stereo)	L + R = 90%, P = 10%, THD = 1%	—	900	—	mVrms
Channel Separation		CH_{SEP}	L + R = 180mVrms, P = 20mVrms	36	45	—	dB
Total Harmonic Distortion	Monaural	THD (Monaural)	V_{IN} = 200mVrms	—	0.08	0.3	%
	Stereo	THD (Stereo)	L + R = 180mVrms, P = 20mVrms	—	0.08	—	%
Voltage Gain		G_V	V_{IN} = 200mVrms	−2	0.5	+2	dB
Channel Balance		CH_{BAL}	V_{IN} = 200mVrms	—	0	1.5	dB
Lamp Sensitivity	ON	$V_{L(ON)}$	Pilot Input	—	10	15	mVrms
	OFF	$V_{L(OFF)}$		2	6	—	mVrms
Stereo Lamp Hysteresis		V_H	To Turn Off from Lamp Turn On	—	3	—	mVrms
Capture Range		C.R.	P = 20mVrms	—	±3	—	%
Carrier Leak	19kHz	C.L.	L + R = 180mVrms, P = 20mVrms	—	34	—	dB
	38kHz			—	42	—	
Signal to Noise Ratio		S/N	V_{IN} = 180mVrms, f = 1kHz Rg = 620Ω	—	74	—	dB
Output Current(pin 8, pin 9)		I_{OUT}	R_L = 3.3KΩ, V_{CC} = 3.5V	—	0.3	0.6	mA
			R_L = 3.3KΩ, V_{CC} = 8V	—	1.2	1.8	
			R_L = 3.3KΩ, V_{CC} = 12V	—	1.4	2.1	

☐ ELECTRICAL DC CHARACTERISTICS (V_{CC}=8V, Terminal Voltage at No Signal)

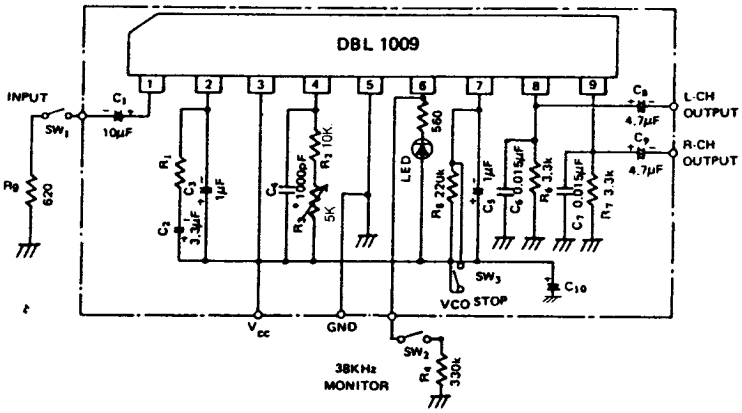
Characteristic	Symbol	Rating	Unit
Terminal 1. (Input)	V_1	3.5	V
2. (L.P.F 1)	V_2	6.6	V
3. (V_{CC})	V_3	8	V
4. (VCO)	V_4	7.1	V
5. (GND)	V_5	0	V
6. (ST.LAMP)	V_6	—	V
7. (L.P.F 2)	V_7	7.4	V
8. (L-CH Output)	V_8	4	V
9. (R-CH Output)	V_9	4	V

☐ BLOCK DIAGRAM



SW_1 : VCO STOP SWITCH
SW_2 : 38kHz MONITOR SWITCH

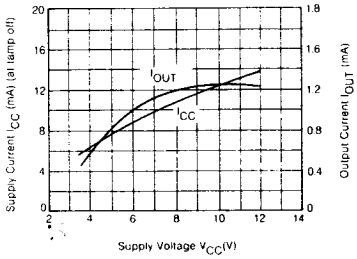
☐ TEST CIRCUIT



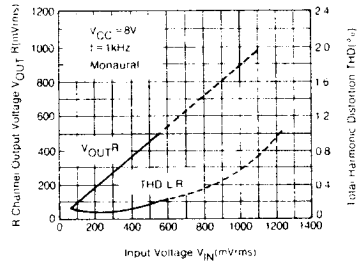
* Each C_6 and C_7 is 0.015μF for Demphasis (50 μsec) but 0.022μF for (75μsec)

☐ TYPICAL PERFORMANCE CHARACTERISTICS

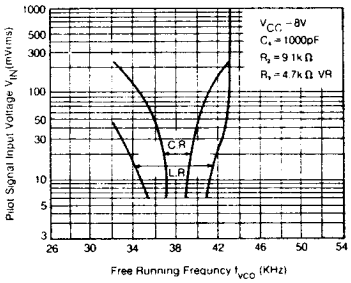
I_{CC}, I_{OUT} $-V_{CC}$



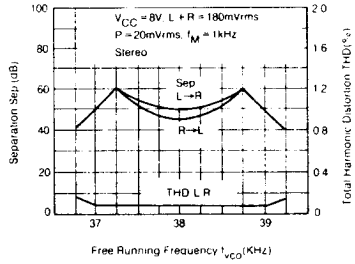
V_{OUT} R, THD $-V_{IN}$



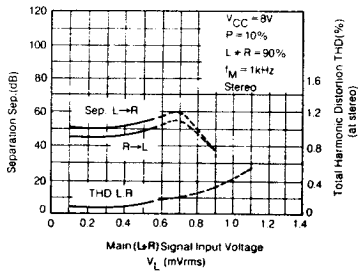
C.R & L.R



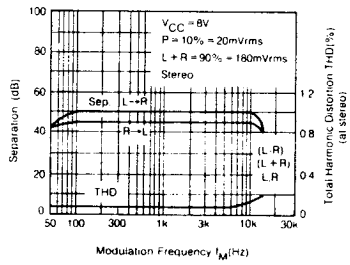
THD, Sep. $-f_{VCO}$



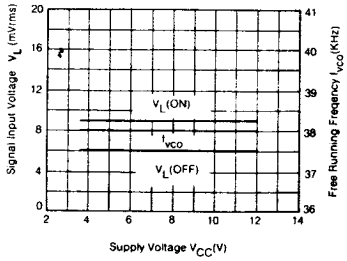
THD, Sep. $-V_{IN}$



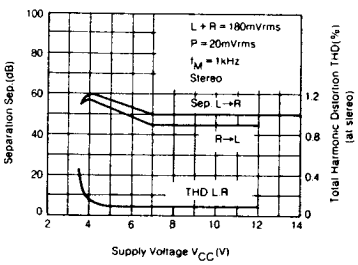
THD, Sep $-f_M$



V_{IN}, f_{VCO} $-V_{CC}$



THD, Sep. $-V_{CC}$



littlediode
COMPONENTS FOR ALL

Littlediode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.