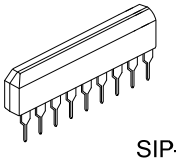
A6043

LINEAR INTEGRATED CIRCUIT

FM STEREO MULTIPLEX



SIP-9

■ DESCRIPTION

The UTC **A6043** is Phase Locked Loop(PLL) FM stereo multiplex IC. It is suitable for automotive applications and portable radio applications.

■ FEATURES

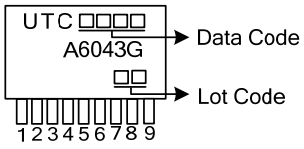
* Low and wide operation: V_{CC}= 3V~12V
* High pilot lamp ON sensitivity: $V_{L(ON)}$ = 9mV_{rms} (Typ.)
* Suitable for LED driving: I_{LAMP} = 20mA (Max.)
* Recommendable input voltage range: V_{IN} = 200~700mV_{rms}
* Low distortion: THD = 0.08% (Typ.) at V_{IN} = 200mV_{rms}(Stereo)
* VCO stop capability stereo lamp and turn off are simultaneously operated by connect pin 7 to V_{CC}.
* Easy adjustment (The monitored free running frequency of VCO is 38kHz at pin 6.)

■ ORDERING INFORMATION

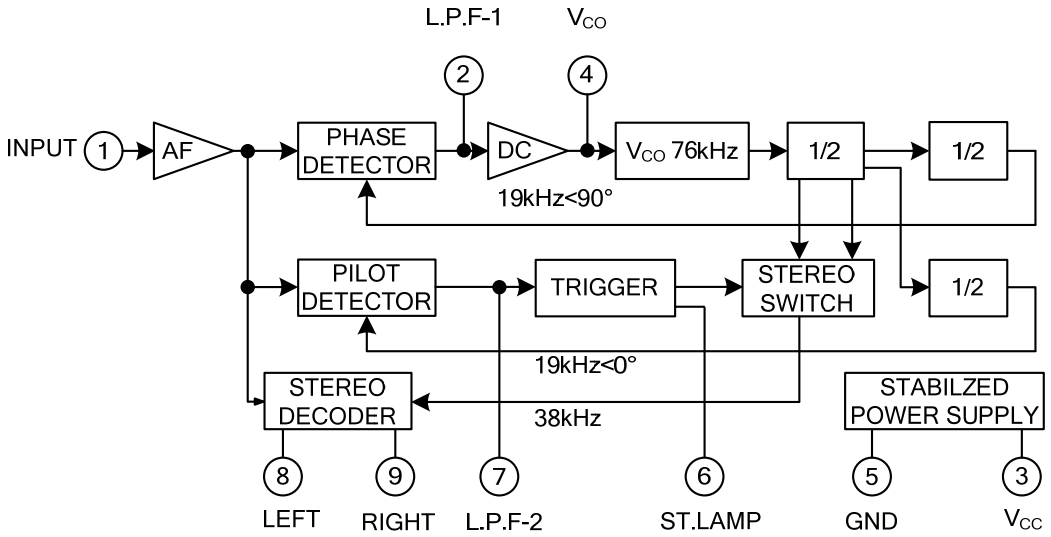
Ordering Number	Package	Packing
A6043G-G09-T	SIP-9	Tube
A6043G-S14-R	SOP-14	Tape Reel

A6043G-G09-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube (2) G09: SIP-9 (3) G: Halogen Free and Lead Free

■ MARKING



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	12	V
Lamp Voltage	V_{LAMP}	16	V
Lamp Current	I_{LAMP}	20	mA
Power Dissipation	P_D	500	mW
Operating Temperature	T_{OPR}	-20 ~ +85	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS

For DC CHARACTERISTICS (T_A = 25°C, V_{CC}= 8V, terminal Voltage at No Signal)

PIN NO.	PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
1	Composite Signal Input	Input		3.5		V
2	PLL Low-Pass Filter	LPF1		6.6		V
3	V_{CC}	V_{CC}		8.0		V
4	V_{CO}	V_{CO}		7.1		V
5	Ground	GND		0		V
6	Stereo Lamp	SLED				V
7	Pilot Detect Low-Pas Filter	LPF2		7.4		V
8	L-ch output	L-ch		4.0		V
9	R-ch output	R-ch		4.0		V

For AC ELECTRICAL CHARACTERISTICS (T_A = 25°C, V_{CC}= 8V, f = 1kHz, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Supply Current		I_{CC}	at Lamp off			11	18	mA
Maximum Input Voltage(Stereo)		$V_{IN(MAX)}$	L+R = 90%， P = 10%			900		mV_{rms}
Channel Separation		CS	L+R = 180 mV_{rms}, P = 20mV_{rms}		36	45		dB
Total Harmonic Distortion	Monaural	THD	V_{IN} = 200mV_{rms}			0.08	0.3	%
	Stereo		L+R = 180 mV_{rms}, P = 20mV_{rms}			0.08		%
Voltage Gain		G_V	V_{IN} = 200mV_{rms}		-2.0	0.5	+2.0	dB
Channel Balance		C_B	V_{IN} = 200mV_{rms}			0	1.5	dB
Lamp Sensitivity	ON	$V_{L(ON)}$	Pilot Input			9	15	mV_{rms}
	OFF	$V_{L(OFF)}$			2	6		mV_{rms}
Stereo Lamp Hysteresis		V_{HYS}	To Turn Off from Lamp Turn On			3		mV_{rms}
Capture Range		C_R	P = 20mV_{rms}			±3		%
Carrier Leak	19kHz	C_L	L+R = 180 mV_{rms}, P = 20mV_{rms}			34		dB
	38kHz					42		
SCA Rejection Ratio		SCA Rej.	L+R = 160 mV_{rms}, P = 20mV_{rms} SCA = 20mV_{rms}, f_{SCA} = 67kHz			70		dB
Signal to Noise Ratio		S/N	V_{IN} = 200mV_{rms}, f = 1kHz, R_G = 620Ω			74		dB
Input Resistance		R_{IN}				33		kΩ
Output Current (Pins 8, 9)		I_{OUT}	R_L = 3.3kΩ	V_{CC} = 3.5V		0.3	0.6	mA
				V_{CC} = 8.0V		1.2	1.8	mA
				V_{CC} = 12V		1.4	2.1	mA

■ TEST CIRCUIT