



## A6043

## LINEAR INTEGRATED CIRCUIT

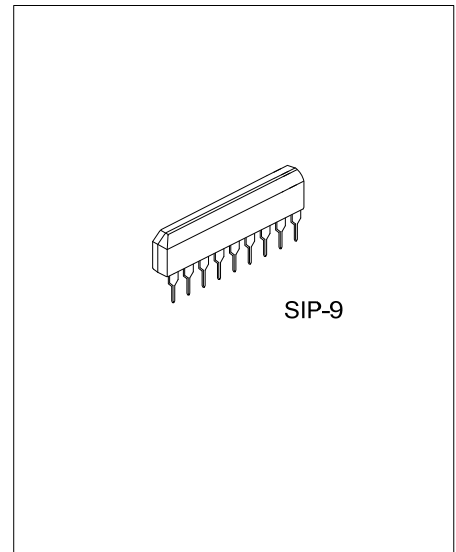
### FM STEREO MULTIPLEX

#### 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:  $V_{CC} = 3V \sim 12V$
- \* High pilot lamp ON sensitivity:  $V_{L(ON)} = 9mV_{rms}$  (Typ.)
- \* Suitable for LED driving:  $I_{LAMP} = 20mA$  (Max.)
- \* Recommendable input voltage range:  $V_{IN} = 200 \sim 700mV_{rms}$
- \* 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.)

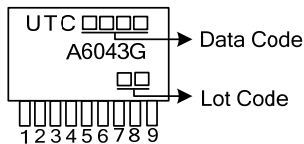


#### ORDERING INFORMATION

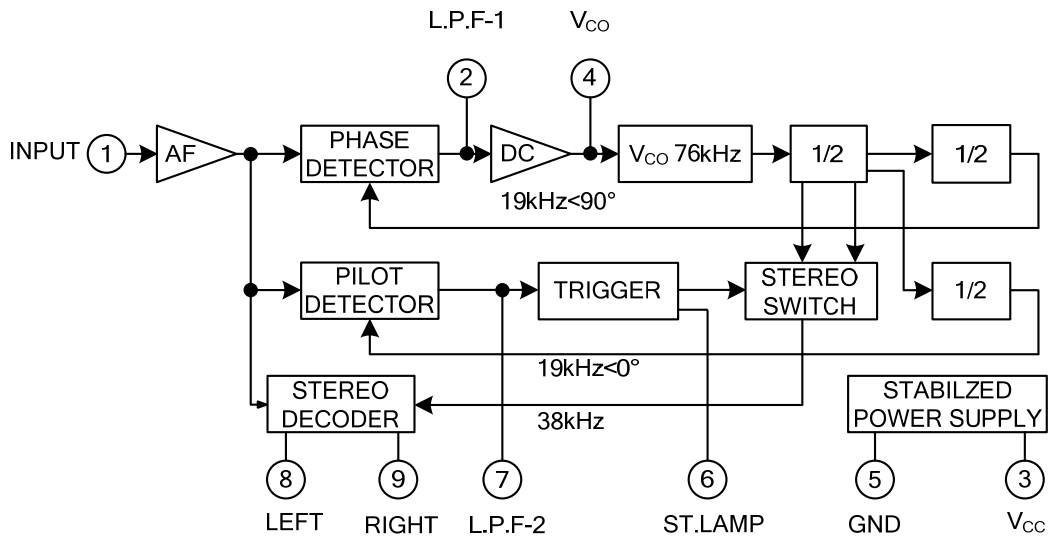
Ordering Number	Package	Packing
A6043G-G09-T	SIP-9	Tube
A6043G-S14-R	SOP-14	Tape Reel

<p>A6043G-G09-T</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) T: Tube (2) G09: SIP-9 (3) G: Halogen Free and Lead Free</p>
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#### MARKING



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ , 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	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

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

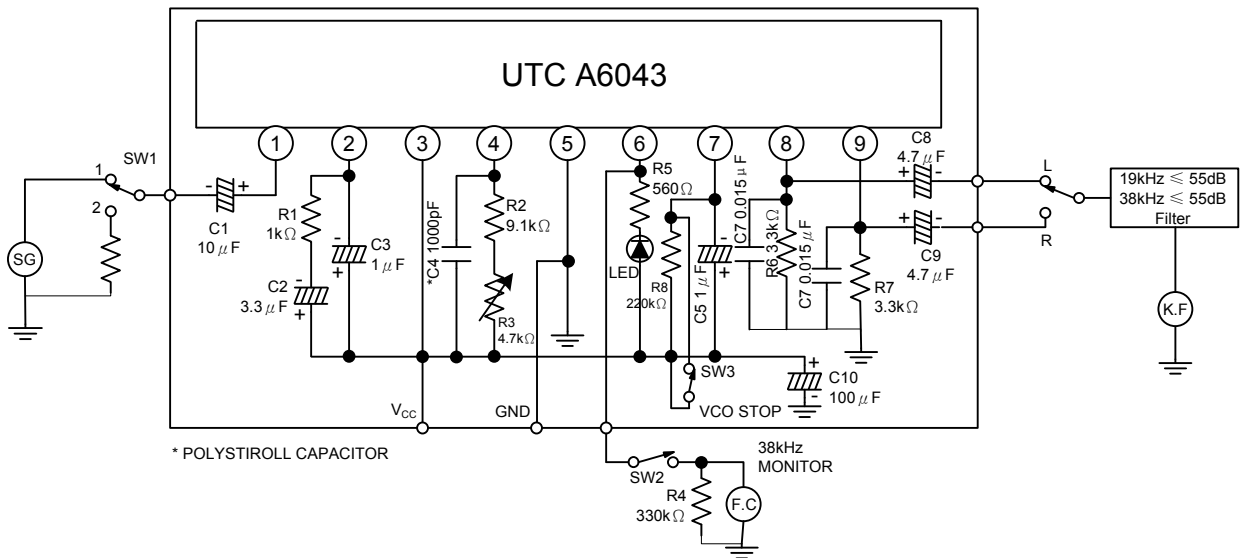
For DC CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 8\text{V}$ , terminal Voltage at No Signal)

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 ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 8\text{V}$ ,  $f = 1\text{kHz}$ , 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 <sub>rms</sub>
Channel Separation	CS	L+R = 180 mV <sub>rms</sub> , P = 20mV <sub>rms</sub>	36	45		dB
Total Harmonic Distortion	Monaural	THD $V_{IN} = 200\text{mV}_{rms}$ L+R = 180 mV <sub>rms</sub> , P = 20mV <sub>rms</sub>		0.08	0.3	%
	Stereo			0.08		%
Voltage Gain	$G_V$	$V_{IN} = 200\text{mV}_{rms}$	-2.0	0.5	+2.0	dB
Channel Balance	$C_B$	$V_{IN} = 200\text{mV}_{rms}$		0	1.5	dB
Lamp Sensitivity	ON	$V_{L(ON)}$ Pilot Input		9	15	mV <sub>rms</sub>
	OFF		$V_{L(OFF)}$	2	6	mV <sub>rms</sub>
Stereo Lamp Hysteresis	$V_{HYS}$	To Turn Off from Lamp Turn On		3		mV <sub>rms</sub>
Capture Range	$C_R$	P = 20mV <sub>rms</sub>		±3		%
Carrier Leak	19kHz	$C_L$ L+R = 180 mV <sub>rms</sub> , P = 20mV <sub>rms</sub>		34		dB
	38kHz			42		
SCA Rejection Ratio	SCA Rej.	L+R = 160 mV <sub>rms</sub> , P = 20mV <sub>rms</sub> SCA = 20mV <sub>rms</sub> , $f_{SCA} = 67\text{kHz}$		70		dB
Signal to Noise Ratio	S/N	$V_{IN} = 200\text{mV}_{rms}$ , $f = 1\text{kHz}$ , $R_G = 620\Omega$		74		dB
Input Resistance	$R_{IN}$			33		k $\Omega$
Output Current (Pins 8, 9)	$I_{OUT}$	$R_L = 3.3\text{k}\Omega$	$V_{CC} = 3.5\text{V}$	0.3	0.6	mA
			$V_{CC} = 8.0\text{V}$	1.2	1.8	mA
			$V_{CC} = 12\text{V}$	1.4	2.1	mA

## ■ TEST CIRCUIT



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