



A6043

LINEAR INTEGRATED CIRCUIT

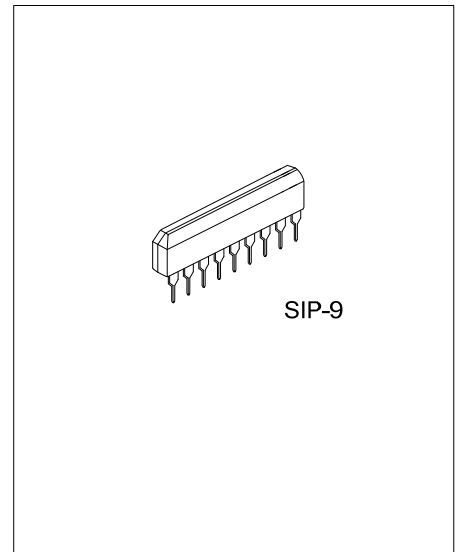
FM STEREO MULTIPLEX

■ 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.)

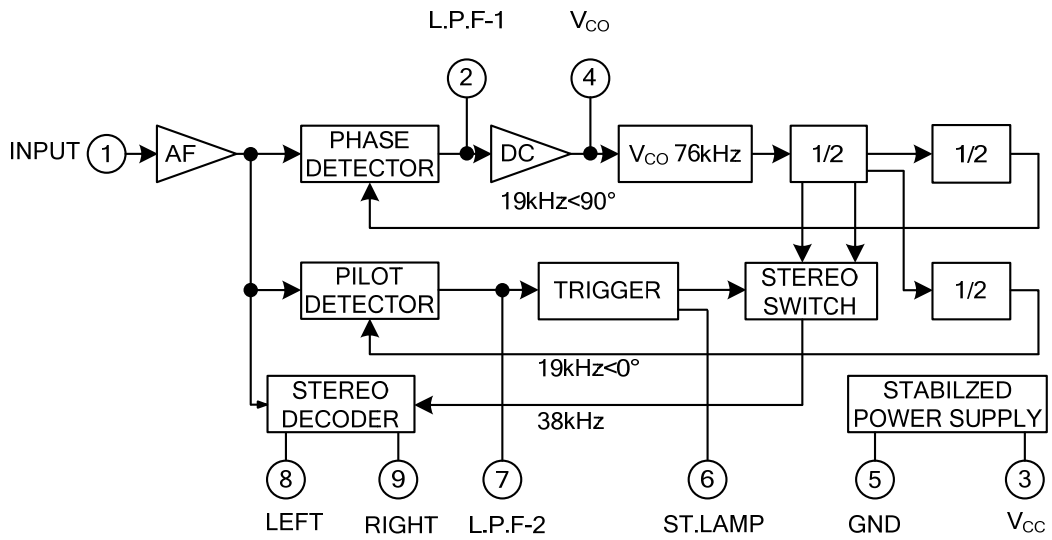


■ ORDERING INFORMATION

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

<p>A6043G-G09-T</p> <pre> graph TD A6043G-G09-T --- L1[] L1 --- L2[] L2 --- L3[] L3 --- L4[] L4 --- L5[] L5 --- L6[] L6 --- L7[] L7 --- L8[] L8 --- L9[] L9 --- L10[] L10 --- L11[] L11 --- L12[] L12 --- L13[] L13 --- L14[] L14 --- L15[] L15 --- L16[] L16 --- L17[] L17 --- L18[] L18 --- L19[] L19 --- L20[] L20 --- L21[] L21 --- L22[] L22 --- L23[] L23 --- L24[] L24 --- L25[] L25 --- L26[] L26 --- L27[] L27 --- L28[] L28 --- L29[] L29 --- L30[] L30 --- L31[] L31 --- L32[] L32 --- L33[] L33 --- L34[] L34 --- L35[] L35 --- L36[] L36 --- L37[] L37 --- L38[] L38 --- L39[] L39 --- L40[] L40 --- L41[] L41 --- L42[] L42 --- L43[] L43 --- L44[] L44 --- L45[] L45 --- L46[] L46 --- L47[] L47 --- L48[] L48 --- L49[] L49 --- L50[] L50 --- L51[] L51 --- L52[] L52 --- L53[] L53 --- L54[] L54 --- L55[] L55 --- L56[] L56 --- L57[] L57 --- L58[] L58 --- L59[] L59 --- L60[] L60 --- L61[] L61 --- L62[] L62 --- L63[] L63 --- L64[] L64 --- L65[] L65 --- L66[] L66 --- L67[] L67 --- L68[] L68 --- L69[] L69 --- L70[] L70 --- L71[] L71 --- L72[] L72 --- L73[] L73 --- L74[] L74 --- L75[] L75 --- L76[] L76 --- L77[] L77 --- L78[] L78 --- L79[] L79 --- L80[] L80 --- L81[] L81 --- L82[] L82 --- L83[] L83 --- L84[] L84 --- L85[] L85 --- L86[] L86 --- L87[] L87 --- L88[] L88 --- L89[] L89 --- L90[] L90 --- L91[] L91 --- L92[] L92 --- L93[] L93 --- L94[] L94 --- L95[] L95 --- L96[] L96 --- L97[] L97 --- L98[] L98 --- L99[] L99 --- L100[] L100 --- L101[] L101 --- L102[] L102 --- L103[] L103 --- L104[] L104 --- L105[] L105 --- L106[] L106 --- L107[] L107 --- L108[] L108 --- L109[] L109 --- L110[] L110 --- L111[] L111 --- L112[] L112 --- L113[] L113 --- L114[] L114 --- L115[] L115 --- L116[] L116 --- L117[] L117 --- L118[] L118 --- L119[] L119 --- L120[] L120 --- L121[] L121 --- L122[] L122 --- L123[] L123 --- L124[] L124 --- L125[] L125 --- L126[] L126 --- L127[] L127 --- L128[] L128 --- L129[] L129 --- L130[] L130 --- L131[] L131 --- L132[] L132 --- L133[] L133 --- L134[] L134 --- L135[] L135 --- 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L823 --- L824[] L824 --- L825[] L825 --- L826[] L826 --- L827[] L827 --- L828[] L828 --- L829[] L829 --- L830[] L830 --- L831[] L831 --- L832[] L832 --- L833[] L833 --- L834[] L834 --- L835[] L835 --- L836[] L836 --- L837[] L837 --- L838[] L838 --- L839[] L839 --- L840[] L840 --- L841[] L841 --- L842[] L842 --- L843[] L843 --- L844[] L844 --- L845[] L845 --- L846[] L846 --- L847[] L847 --- L848[] L848 --- L849[] L849 --- L850[] L850 --- L851[] L851 --- L852[] L852 --- L853[] L853 --- L854[] L854 --- L855[] L855 --- L856[] L856 --- L857[] L857 --- L858[] L858 --- L859[] L859 --- L860[] L860 --- L861[] L861 --- L862[] L862 --- L863[] L863 --- L864[] L864 --- L865[] L865 --- L866[] L866 --- L867[] L867 --- L868[] L868 --- L869[] L869 --- L870[] L870 --- L871[] L871 --- L872[] L872 --- L873[] L873 --- L874[] L874 --- L875[] L875 --- L876[] L876 --- L877[] L877 --- L878[] L878 --- L879[] L879 --- L880[] L880 --- L881[] L881 --- L882[] L882 --- L883[] L883 --- L884[] L884 --- L885[] L885 --- L886[] L886 --- L887[] L887 --- L888[] L888 --- L889[] L889 --- L890[] L890 --- L891[] L891 --- L892[] L892 --- L893[] L893 --- L894[] L894 --- L895[] L895 --- L896[] L896 --- L897</pre>
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■ 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

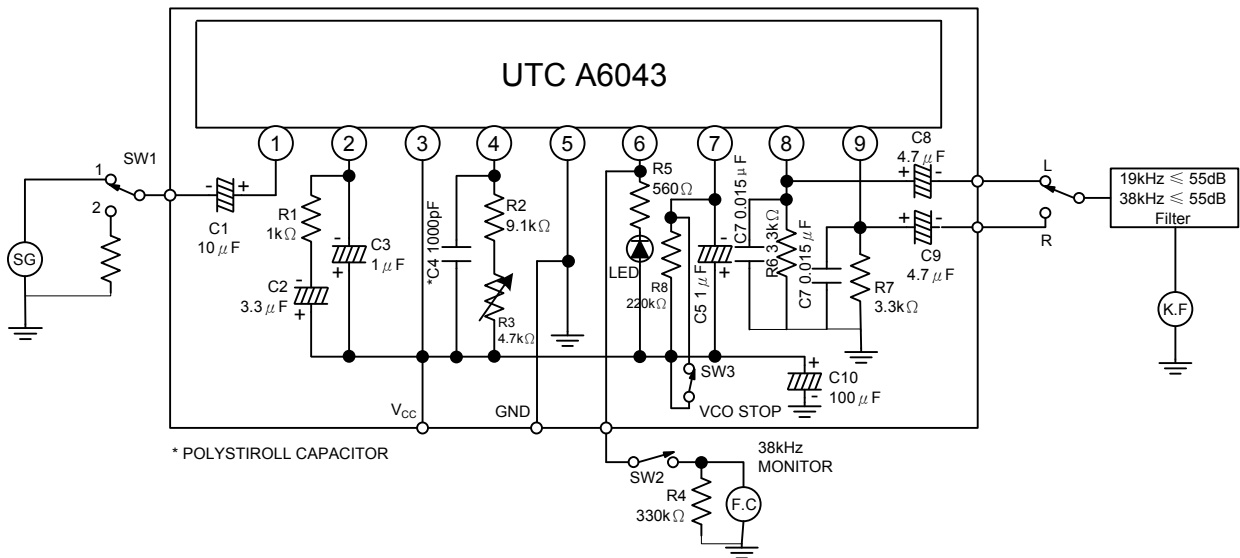
For DC CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $V_{CC} = 8\text{V}$, terminal Voltage at No Signal)

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 _{rms}
Channel Separation	CS	L+R = 180 mV _{rms} , P = 20mV _{rms}	36	45		dB
Total Harmonic Distortion	Monaural	$V_{IN} = 200\text{mV}_{rms}$ L+R = 180 mV _{rms} , P = 20mV _{rms}		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	Pilot Input		9	15	mV _{rms}
	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	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} , $f_{SCA} = 67\text{kHz}$		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 Ω
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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