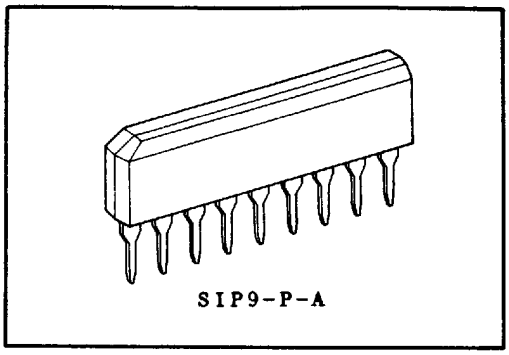
TOSHIBA INTEGRATED CIRCUIT
TECHNICAL DATA

TA7370P

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT
SILICON MONOLITHIC

PLL FM STEREO MULTIPLEX (3V USE)

The TA7370P/F are PLL FM stereo multiplex ICs designed for portable radio applications. It is especially suitable for small-sized low-voltage sets because of flat package and low current.



Weight: 0.92g(Typ.)

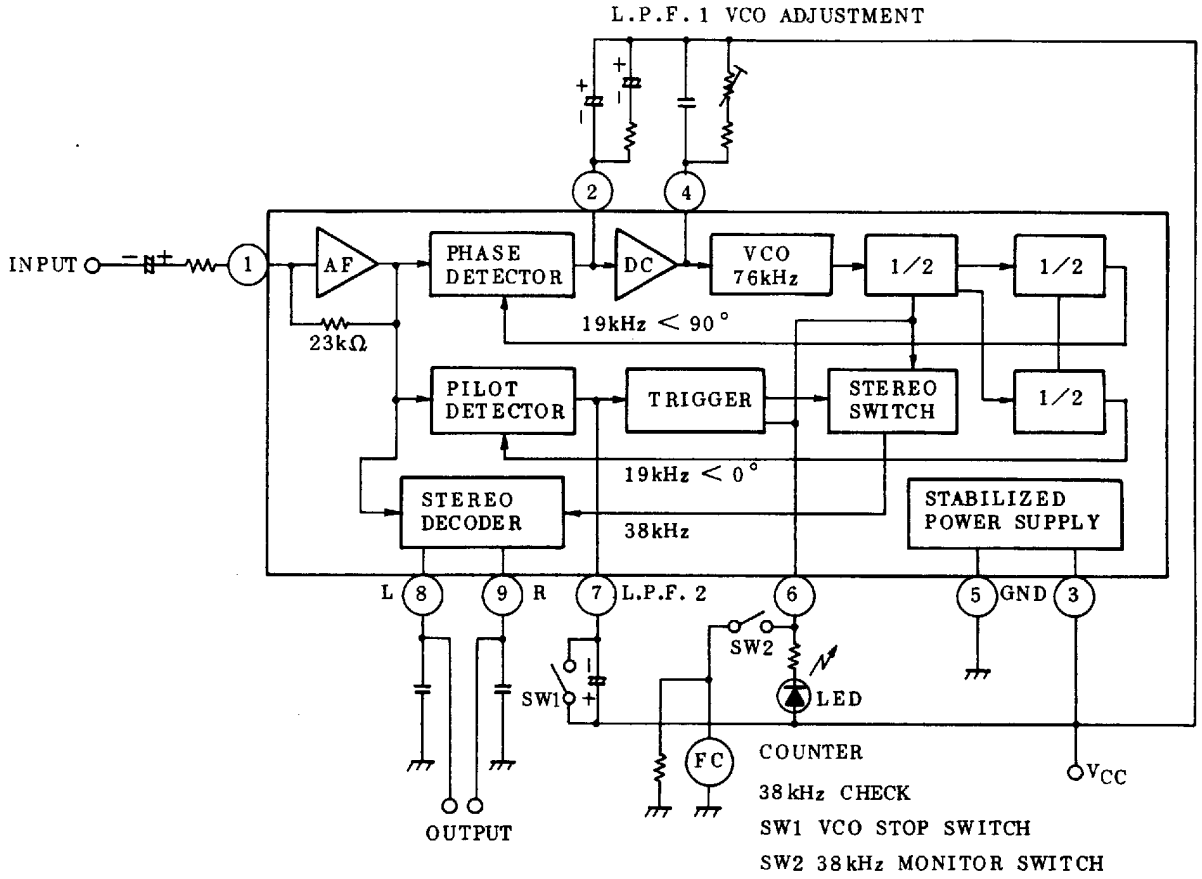
- Small Installed Area and Few External Parts
- Excellent Pilot Lamp Sensitivity
  : $V_{L(ON)}$=9mVrms(Typ.)
- Operating Supply Voltage Range : $V_{CC(opr)}$=1.6~5V
- Suitable for LED Driving : I_{LAMP}=8mA(Max.)
- VCO Stop Capability (The VCO is stopped when the L.P.F.2 terminal is connected to the power supply line, and then the stereo indicator is turned off.)
- Easy Adjustment (The monitored free running frequency of VCO is 38kHz at Stereo Lamp terminal.)

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V_{CC}	6	V
Lamp Voltage		V_{LAMP}	8	V
Lamp Current		I_{LAMP}	8	mA
Power Dissipation (Note)	TA7370P	P_D	500	mW
Operating Temperature		T_{opr}	-25~75	°C
Storage Temperature		T_{stg}	-55~150	°C

Note: Derated above Ta=25°C in the proportion of 4mW/°C for TA7370P.

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS

1. DC CHARACTERISTICS (Ta=25°C, V_{CC}=3V, Terminal Voltage at No Signal)

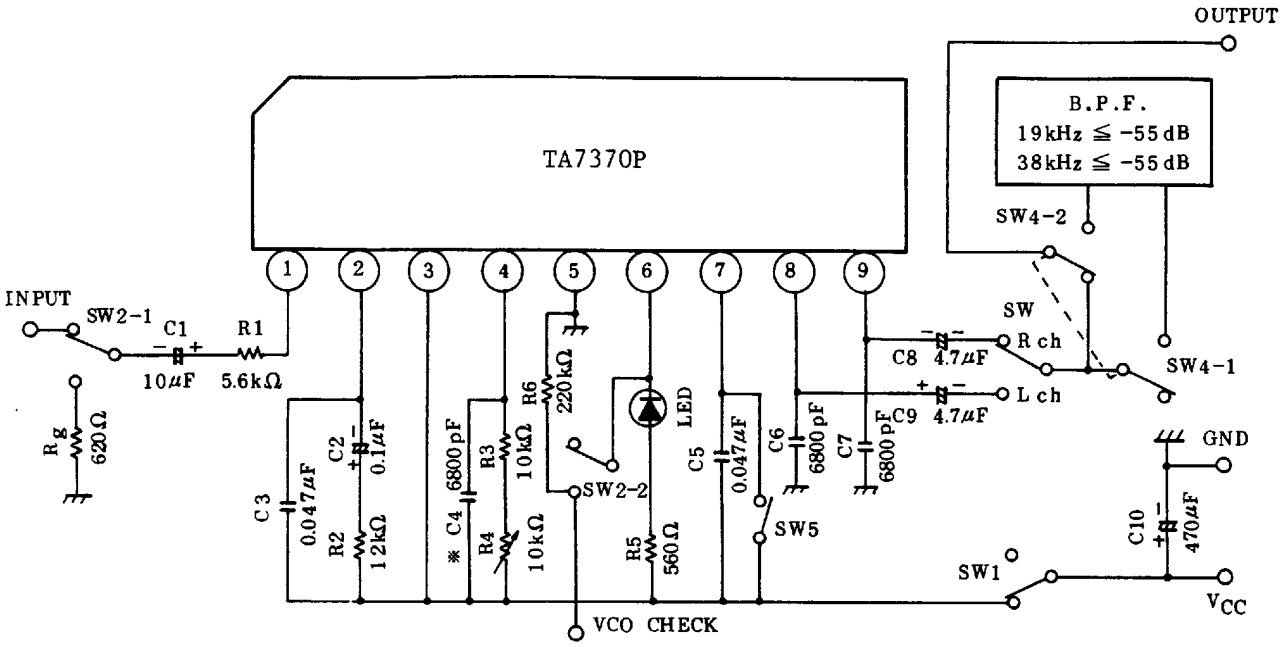
TERMINAL	CHARACTERISTIC	SYMBOL	TYP.	UNIT
1	INPUT	V1	0.2	V
2	L.P.F.1	V2	2.6	V
3	V_{CC}	V3	3.0	V
4	VCO	V4	2.8	V
5	GND	V5	0	V
6	ST. LAMP	V6	-	V
7	L.P.F.2	V7	2.6	V
8	L-CH OUTPUT	V8	1.0	V
9	R-CH OUTPUT	V9	1.0	V

2. AC CHARACTERISTICS (Unless otherwise specified, Ta=25°C, V_{CC}=3V, f=1kHz)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Supply Current		I_{CC}	-	at Lamp off		-	1.6	3.0	mA
Input Resistance		R_{IN}	-			-	23	-	kΩ
Output Resistance		R_{OUT}	-			-	6.8	-	kΩ
Max. Composite Signal Input Voltage		$V_{IN(MAX)}$ STEREO	-	L+R 90%, P=10% f_m=1kHz, THD=5%		-	300	-	mV_{rms}
Separation		Sep.	-	L+R=135mV_{rms} P=15mV_{rms}	f_m=100Hz	-	33	-	dB
					f_m=1kHz	25	33	-	
					f_m=10kHz	-	33	-	
Total Harmonic Distortion	MONAURAL	THD (MONAU-RAL)	-	V_{IN}=150mV_{rms}		-	0.1	1.0	%
	STEREO	THD (STEREO)		L+R=135mV_{rms} P=15mV_{rms}, f_m=1kHz		-	0.1	-	
Voltage Gain		G_V	-	V_{IN}=150mV_{rms}		-1.5	0	1.5	dB
Channel Balance		C.B.	-	V_{IN}=150mV_{rms}		-	0	1.5	dB
Lamp ON Sensitivity		$V_{L(ON)}$	-	Pilot Input		-	9	15	mV_{rms}
Lamp OFF Sensitivity		$V_{L(OFF)}$	-			2	6	-	
Stereo Lamp Hysteresis		V_H	-	To turn Off from turn On		-	3	-	mV_{rms}
Capture Range		C.R.	-	P=15mV_{rms}		-	±3	-	%
Carrier Leak (Note)	19kHz	C.L.	-	P=15mV_{rms}		-	30	-	dB
	38kHz			L+R=135mV_{rms}		-	50	-	
SCA Rejection Ratio		SCA Rej.	-	P=15mV_{rms}, L+R=120mV_{rms} SCA=15mV_{rms}, f_{SCA}=67kHz		-	70	-	dB
Signal to Noise Ratio		S/N	-	V_{IN}=150mV_{rms}, Rg=620Ω		-	78	-	dB

Note: Carrier Leak of 38kHz is only carrier.

TEST CIRCUIT

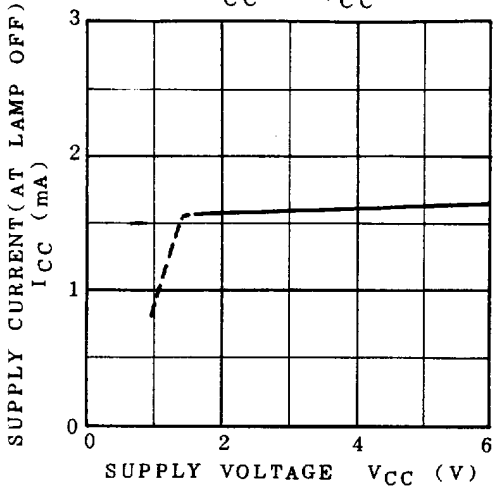


※ POLYSTIROLL CAPACITOR

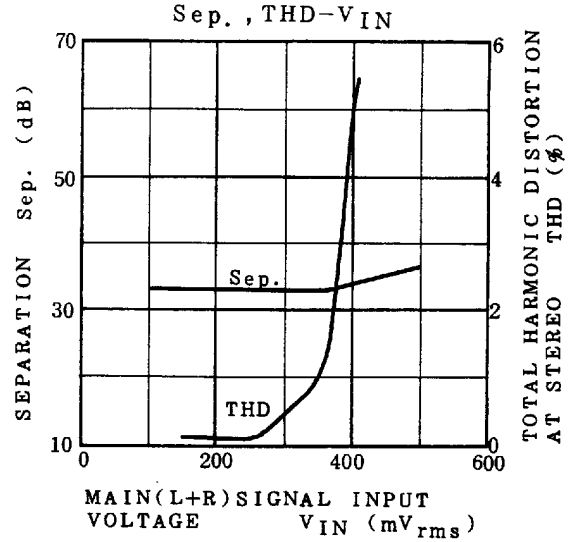
TA7370P-4
1991-9-18
TOSHIBA CORPORATION

GT1A12(2)

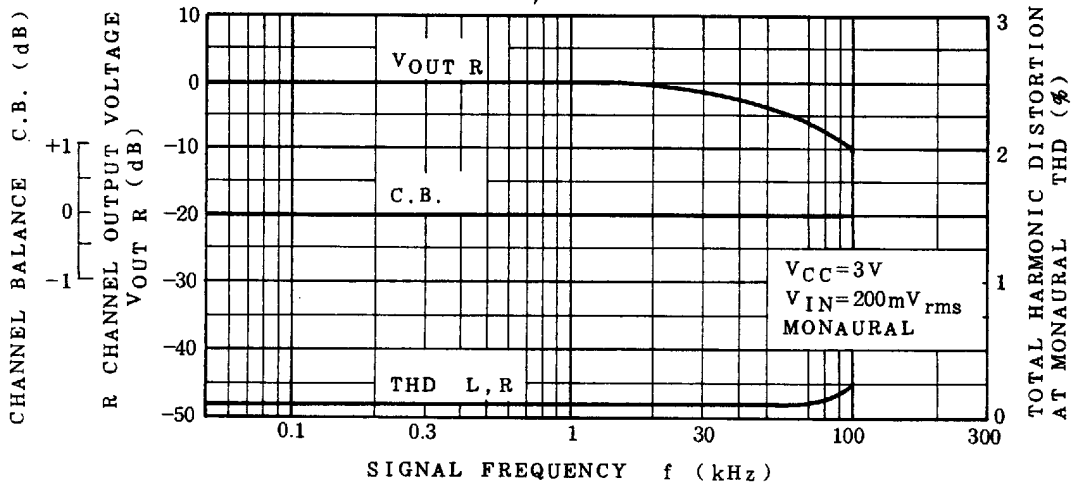
I_{CC} – V_{CC}



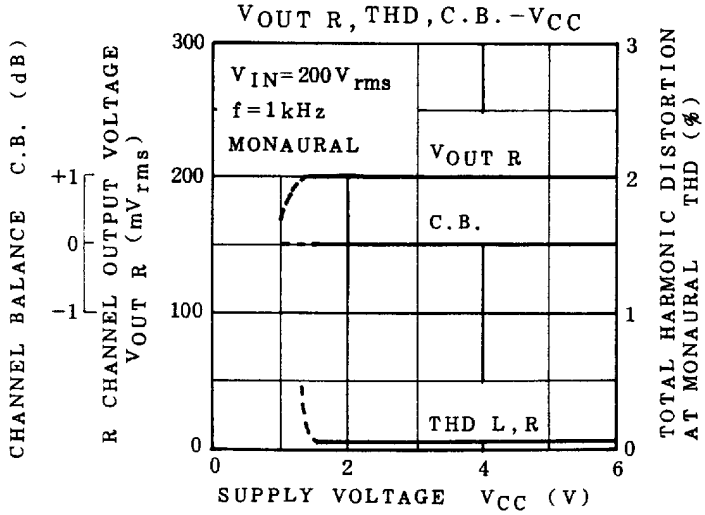
Sep., THD–V_{IN}



V_{OUT} R, C.B., THD–f



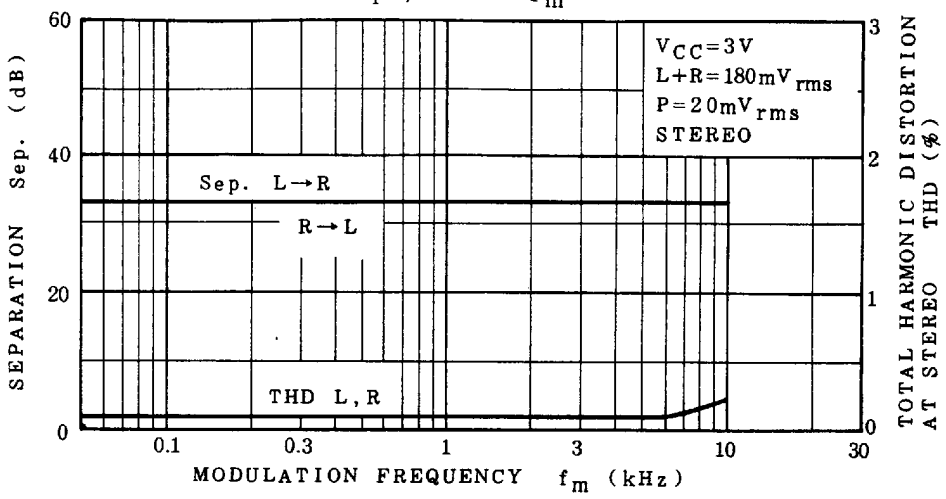
V_{OUT} R, THD, C.B.–V_{CC}



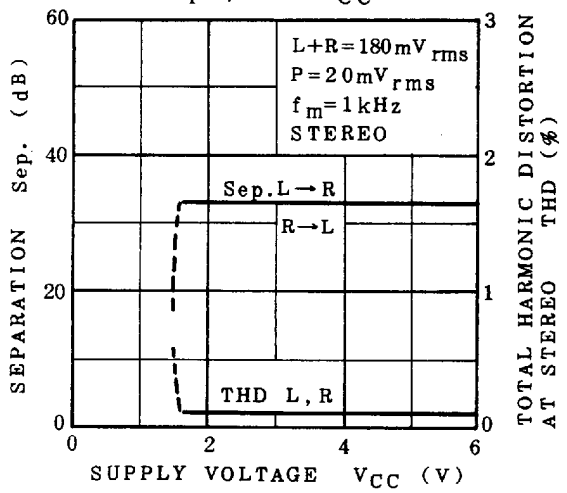
TA7370P-5
1991-9-18
TOSHIBA CORPORATION

GT1A12(2)

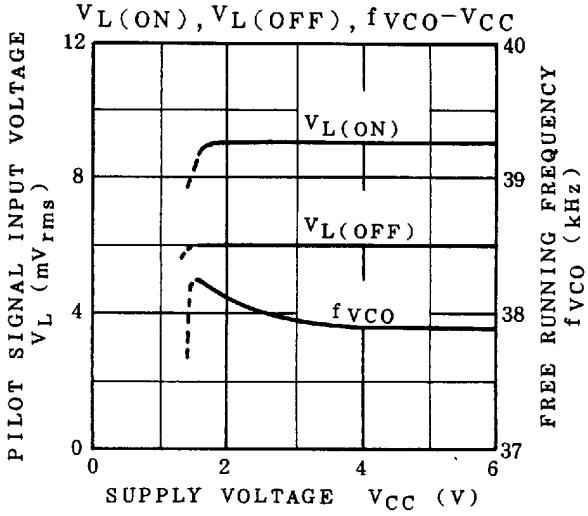
Sep., THD – f_m



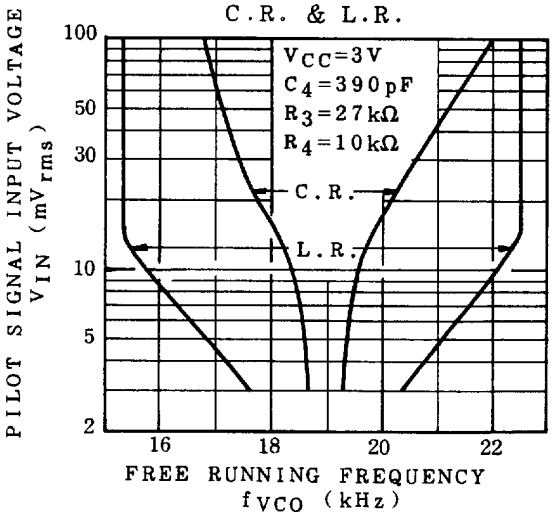
Sep., THD–V_{CC}



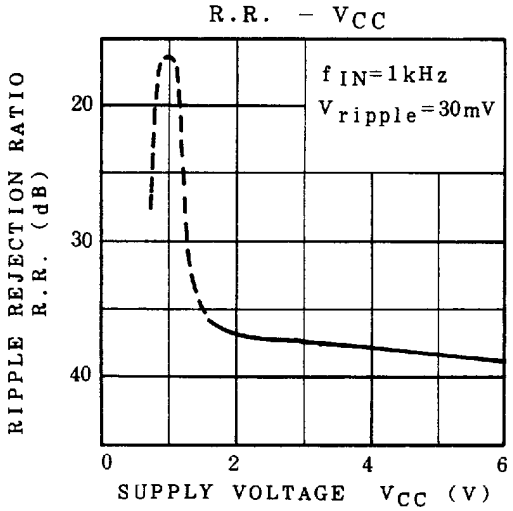
$V_{L(ON)}$, $V_{L(OFF)}$, f_{VCO}–V_{CC}



CAPTURE RANGE & LOCK RANG
C.R. & L.R.



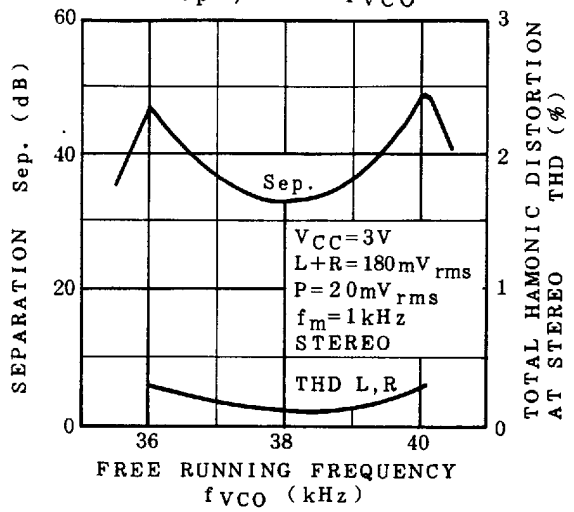
R.R. – V_{CC}



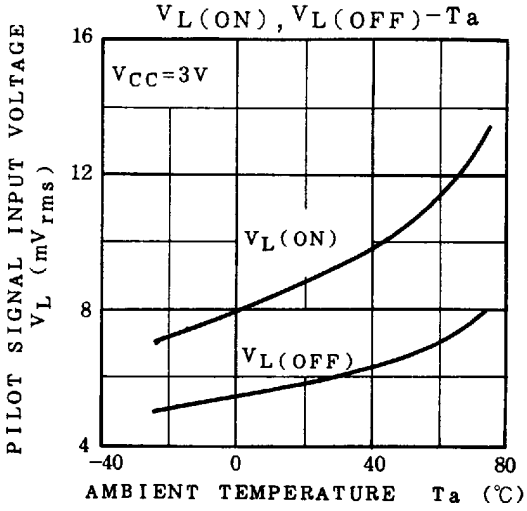
TA7370P-6
1991-9-18
TOSHIBA CORPORATION

GT1A12(2)

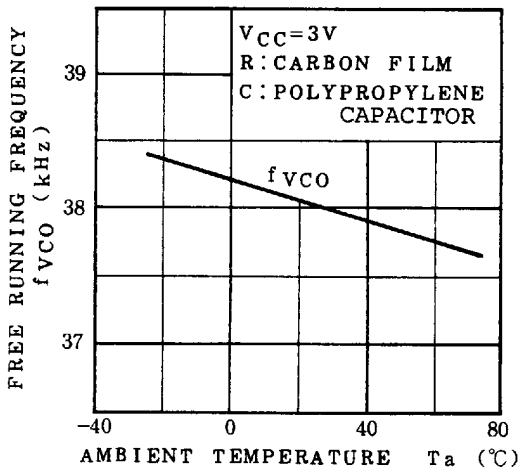
Sep., THD – f_{VCO}



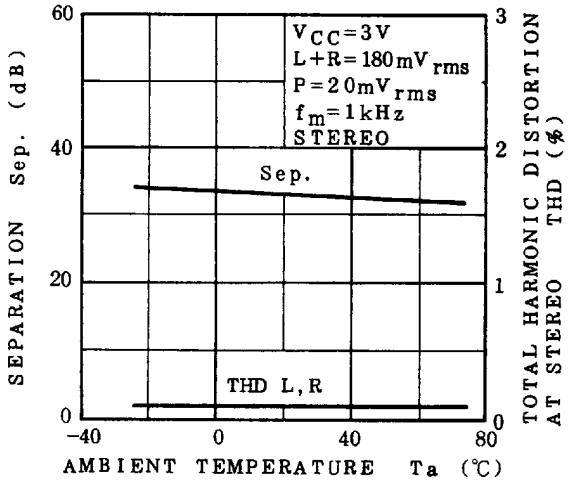
$V_{L(ON)}$, $V_{L(OFF)}$–Ta



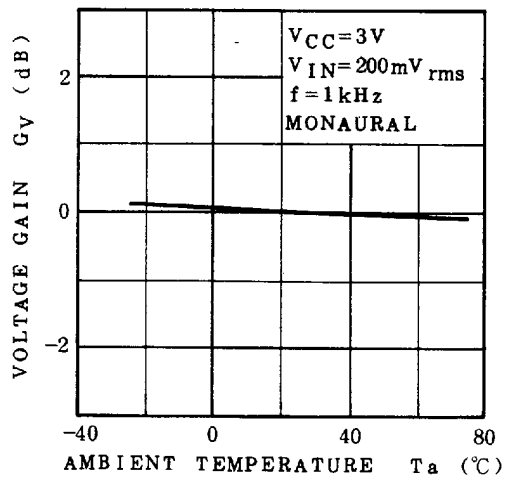
f_{VCO} – Ta



Sep., THD – Ta

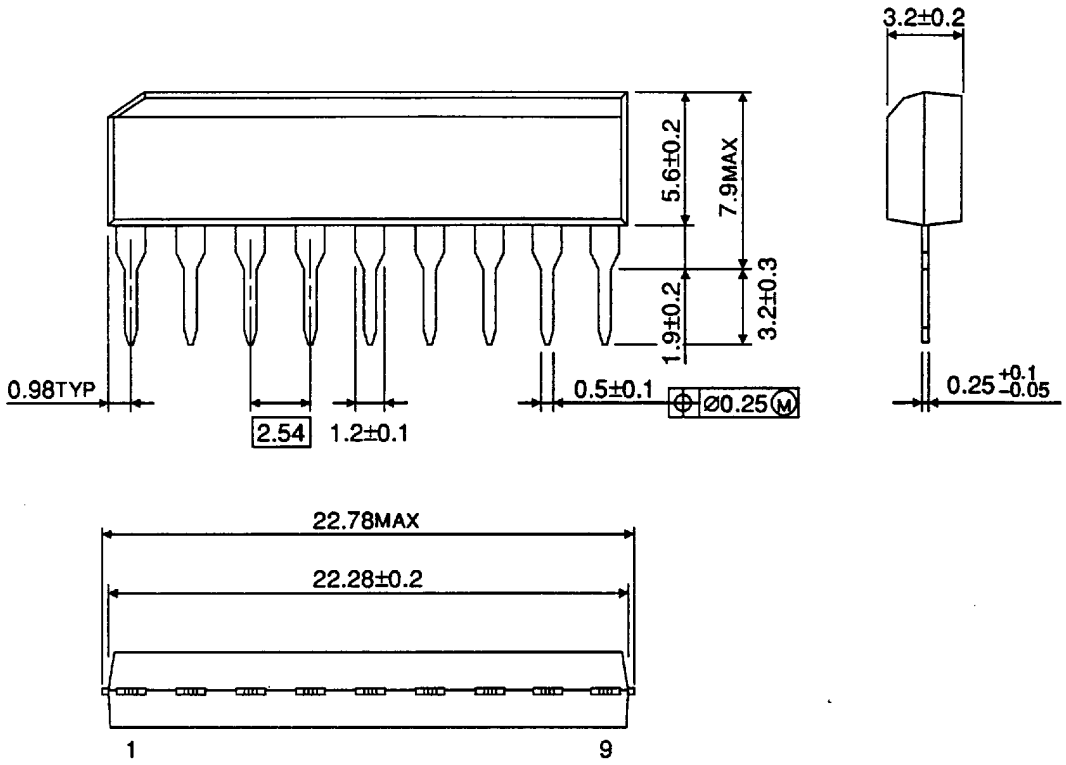


G_V – Ta



OUTLINE DRAWING
SIP9-P-A

Unit in mm



Weight : 0.92g (Typ.)