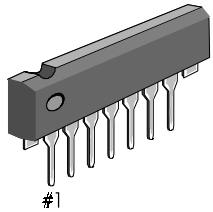
INTRODUCTION

The S1A2245X01 is a monolithic integrated circuit consisting of an FM IF amplifier and detector. It is suitable for car radios.

7–SIP



FUNCTIONS

- 3-stage IF amplifier
- Peak detector

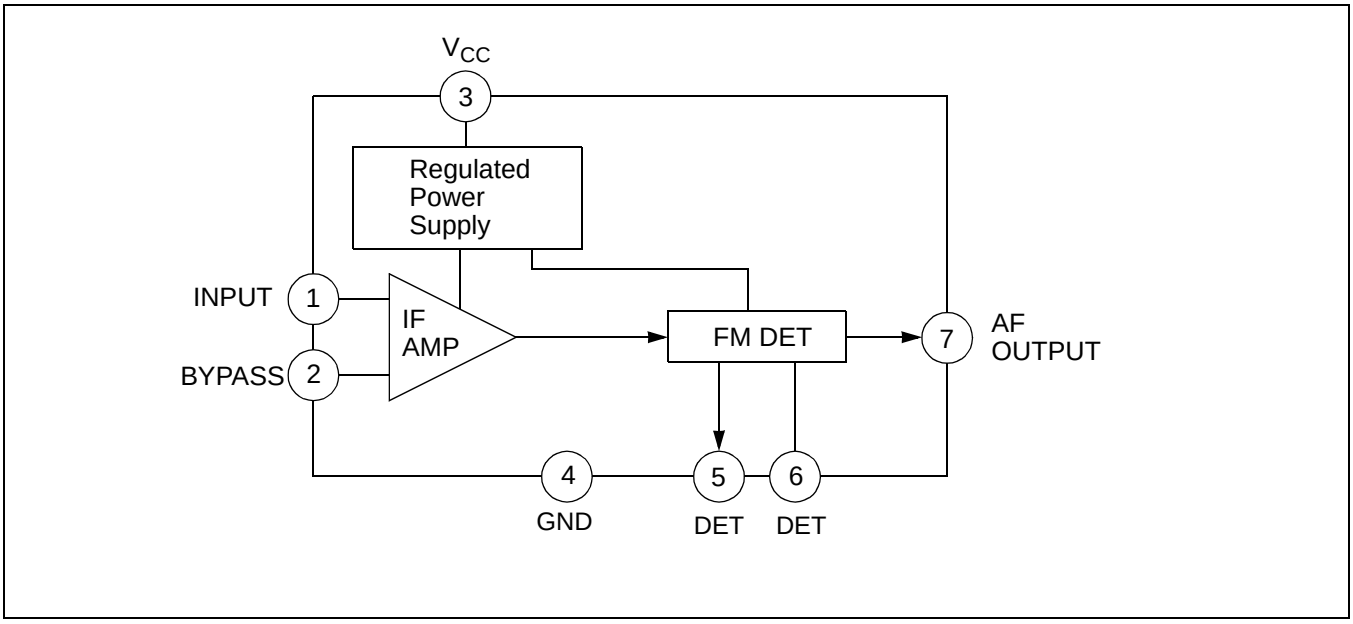
FEATURES

- Suitable for FM car radios
- Wide operating supply voltage range: V_{CC} = 8V – 14V
- High detector output voltage (V_O = 500mV, Typ)
- Excellent AM rejection: AMR = 50dB (Typ)
- High sensitivity: $V_{I\ (LIM)}$ = 50dBμV (Typ)
- Simplified single coil tuning
- Low distortion (THD = 0.1 %: Typ)
- Minimum number of external parts required

ORDERING INFORMATION

Device	Package	Operating Temperature
S1A2245X01-I0U0	7–SIP	–20°C – +70°C

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta =25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	15	V
Input Voltage	V_I	0.7	V
Power Dissipation	P_D	400	mW
Operating Temperature	T_{OPR}	–20 – +70	°C
Storage Temperature	T_{STG}	–40 – +125	°C

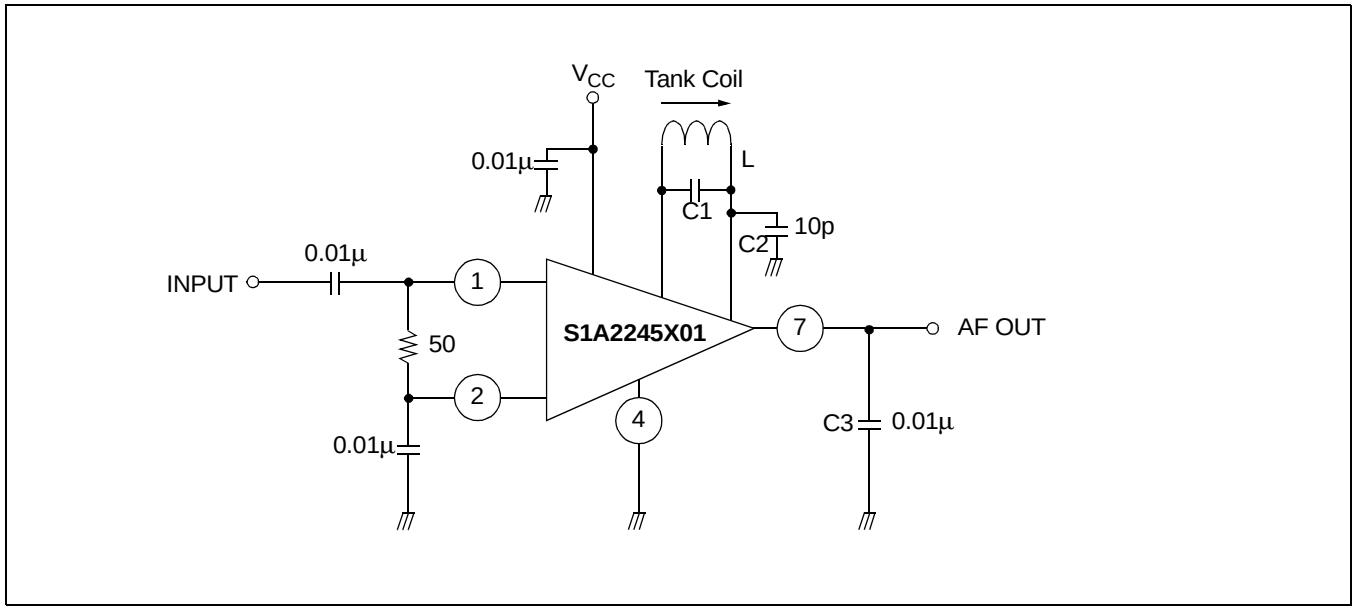
NOTE: Derated above Ta = 25°C in the proportion of 4 mW/°C

ELECTRICAL CHARACTERISTICS

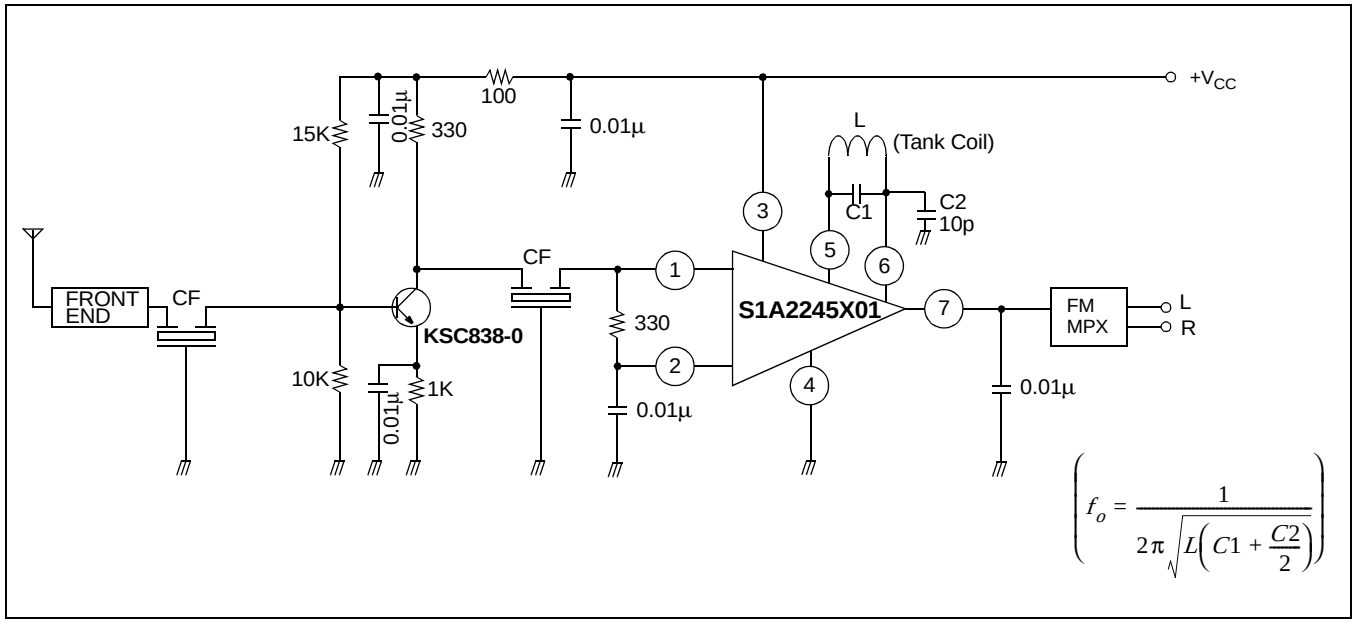
(Ta = 25°C, V_{CC} = 12V, f = 10.7MHz, fm = 400Hz)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current	I_{CCQ}	V_I = 0	8	12	15	mA
- 3dB Limiting Sensitivity	$V_{I(LIM)}$	-3dB point from V_O, V_I = 80dBμ, Δf = 75kHz	–	50	55	dB
AM Rejection Ratio	AMR	FM: Δf = ± 75kHz dev AM: 30 % Mod V_I = 80dBμ	–	50	–	dB
Detector Output Voltage	V_O	Δf = ± 75kHz dev V_I = 80dBμV	300	500	700	mV
Total Harmonic Distortion	THD	Δf = ± 225kHz dev V_I = 80dBμV	–	0.2	–	%
Signal to Noise Ratio	S/N	Δf = ± 75kHz dev V_I = 80dBμV	–	60	–	dB

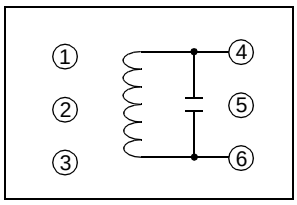
TEST CIRCUIT



APPLICATION CIRCUIT



COIL SPECIFICATIONS



Co(pF)	f(MHz)	Qo(%)	Turns		
			4-6	–	–
27	10.7	150	18	–	–