

INTRODUCTION

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

FUNCTIONS

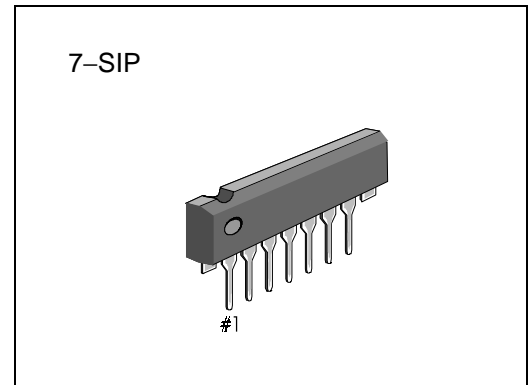
- 3-stage IF amplifier
- Peak detector

FEATURES

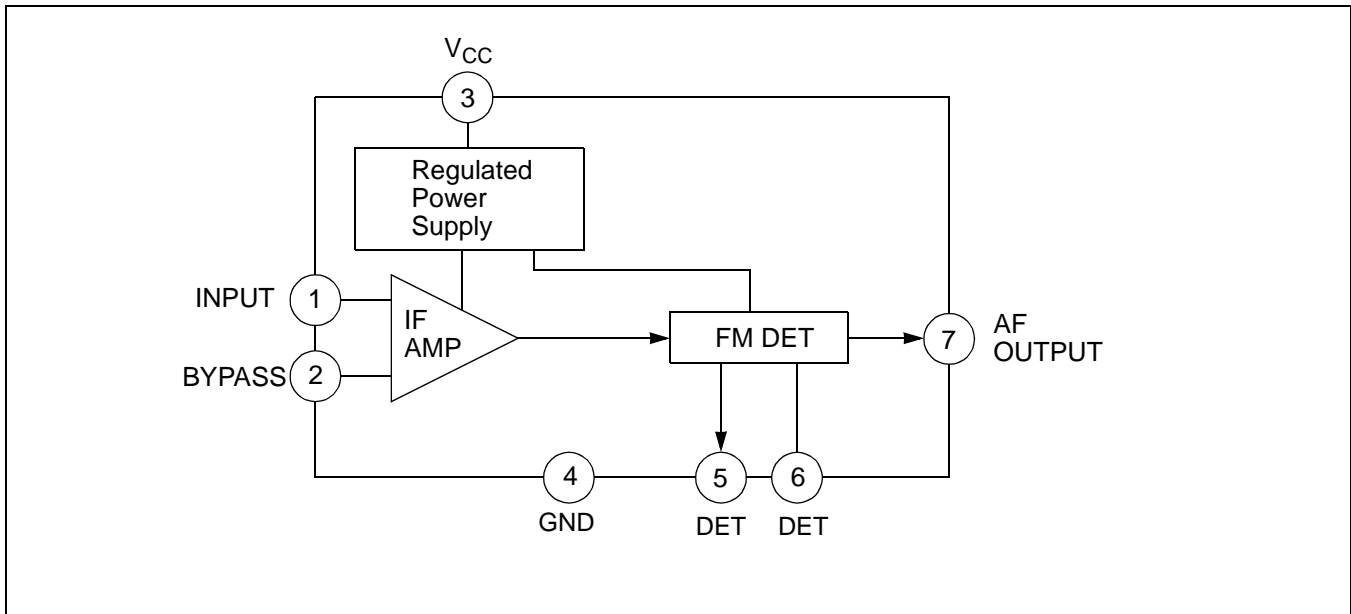
- Suitable for FM car radios
- Wide operating supply voltage range: $V_{CC} = 8V - 14V$
- High detector output voltage ($V_O = 500mV$, Typ)
- Excellent AM rejection: $AMR = 50dB$ (Typ)
- High sensitivity: $V_{I(LIM)} = 50dB\mu V$ (Typ)
- Simplified single coil tuning
- Low distortion (THD = 0.1 %: Typ)
- 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 ($T_a = 25^\circ\text{C}$)

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	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 – +125	$^\circ\text{C}$

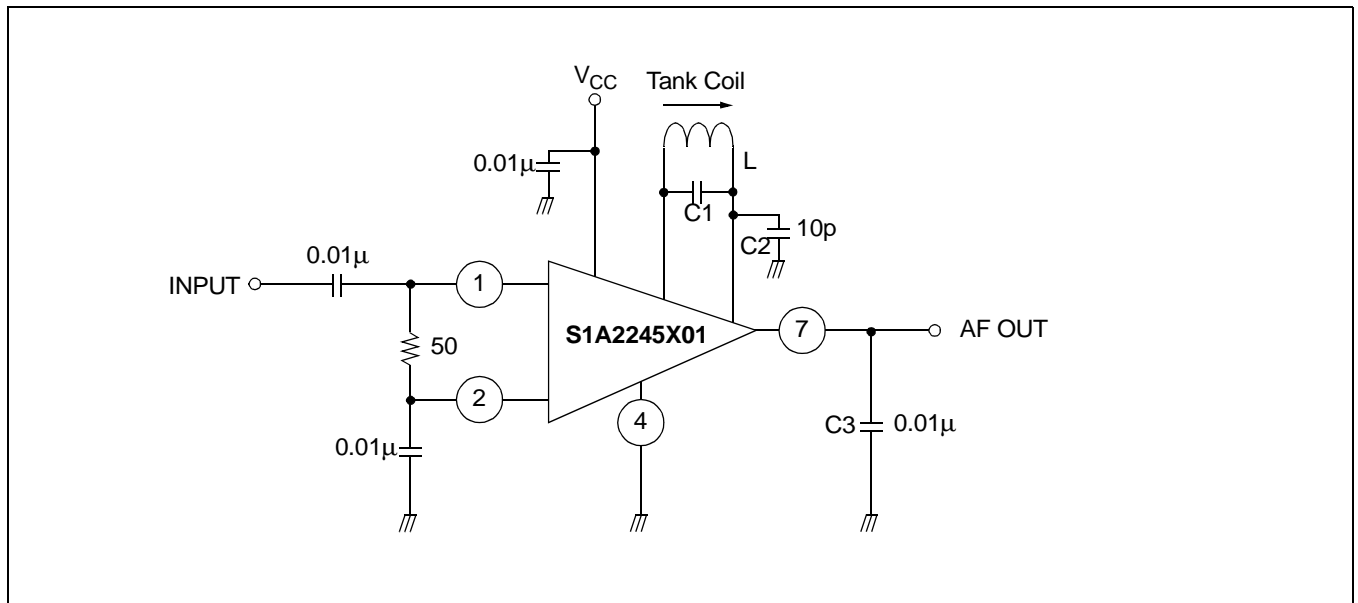
NOTE: Derated above $T_a = 25^\circ\text{C}$ in the proportion of 4 mW/ $^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

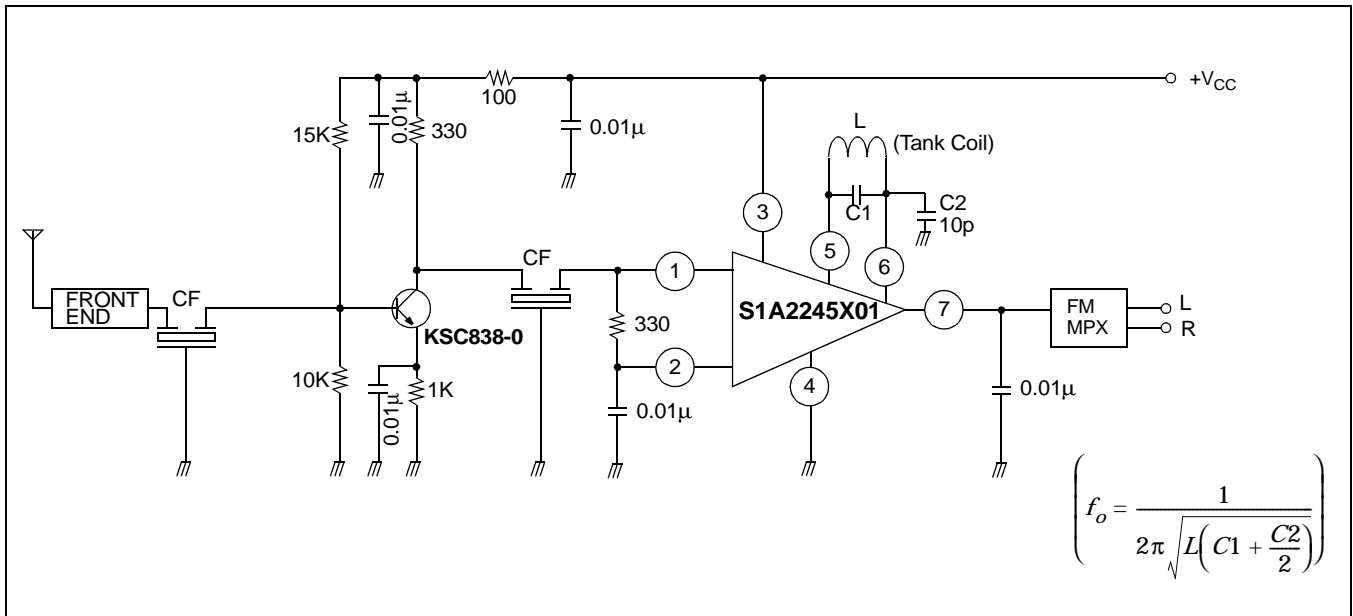
(Ta = 25°C, V_{CC} = 12V, f = 10.7MHz, fm = 400Hz)

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

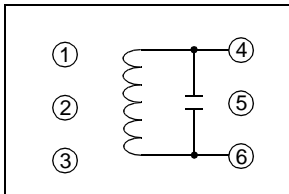
TEST CIRCUIT



APPLICATION CIRCUIT



COIL SPECIFICATIONS



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