

INTRODUCTION

The S1A2297X01 is a monolithic integrated circuit which consists of an FM F/E + AM/FM IF and DET AMP.
The S1A2297X01 is a no-adjustment AM/FM IF, DET coil.

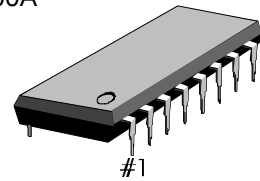
FEATURES

- Does not need AM/FM IF, FM DET COIL
- Built-in FM Front End
- Minimum number of external parts required
- Operating voltage : $V_{CC} = 1.8V - 7V$

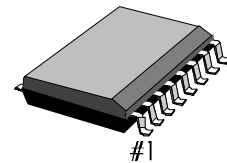
ORDERING INFORMATION

Device	Package	Operating Temperature
S1A2297X01-D0B0	16-DIP-300A	-20°C — + 75°C
S1A2297X01-S0B0	16-SOP-375	

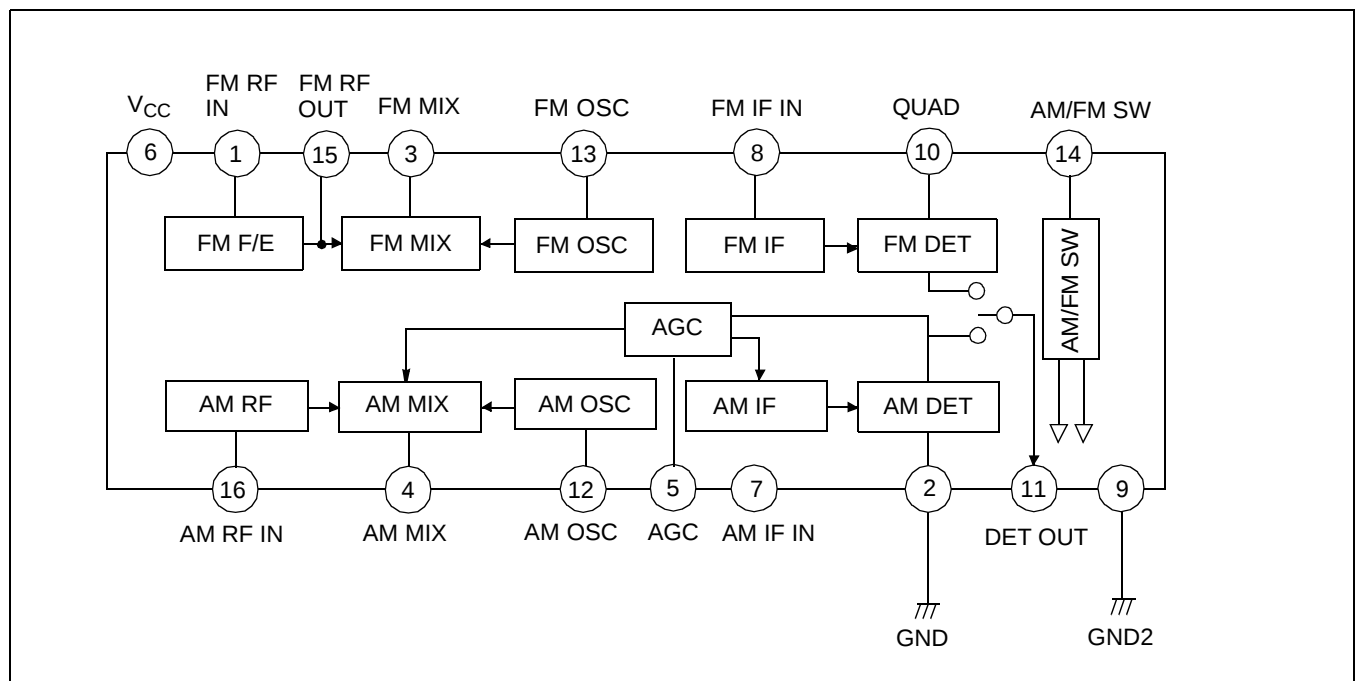
16-DIP-300A



16-SOP-375



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

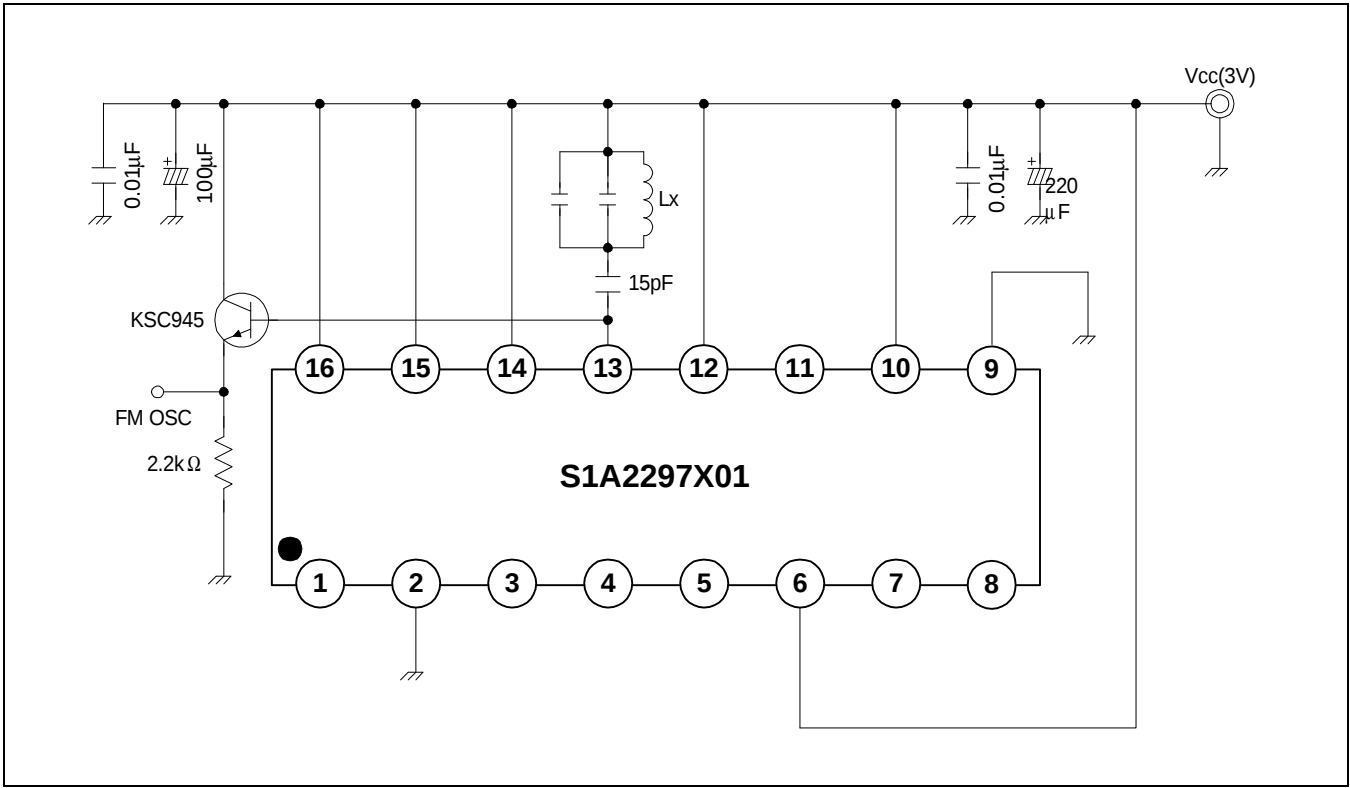
Characteristic	Symbol	Value	Unit
Maximum Supply Voltage	V_{CC}	8	V
Power Dissipation	P_D	250	mW
Operating Temperature	T_{OPR}	-20 — +75	°C
Storage Temperature	T_{STG}	-55 — +125	°C

ELECTRICAL CHARACTERISTICS

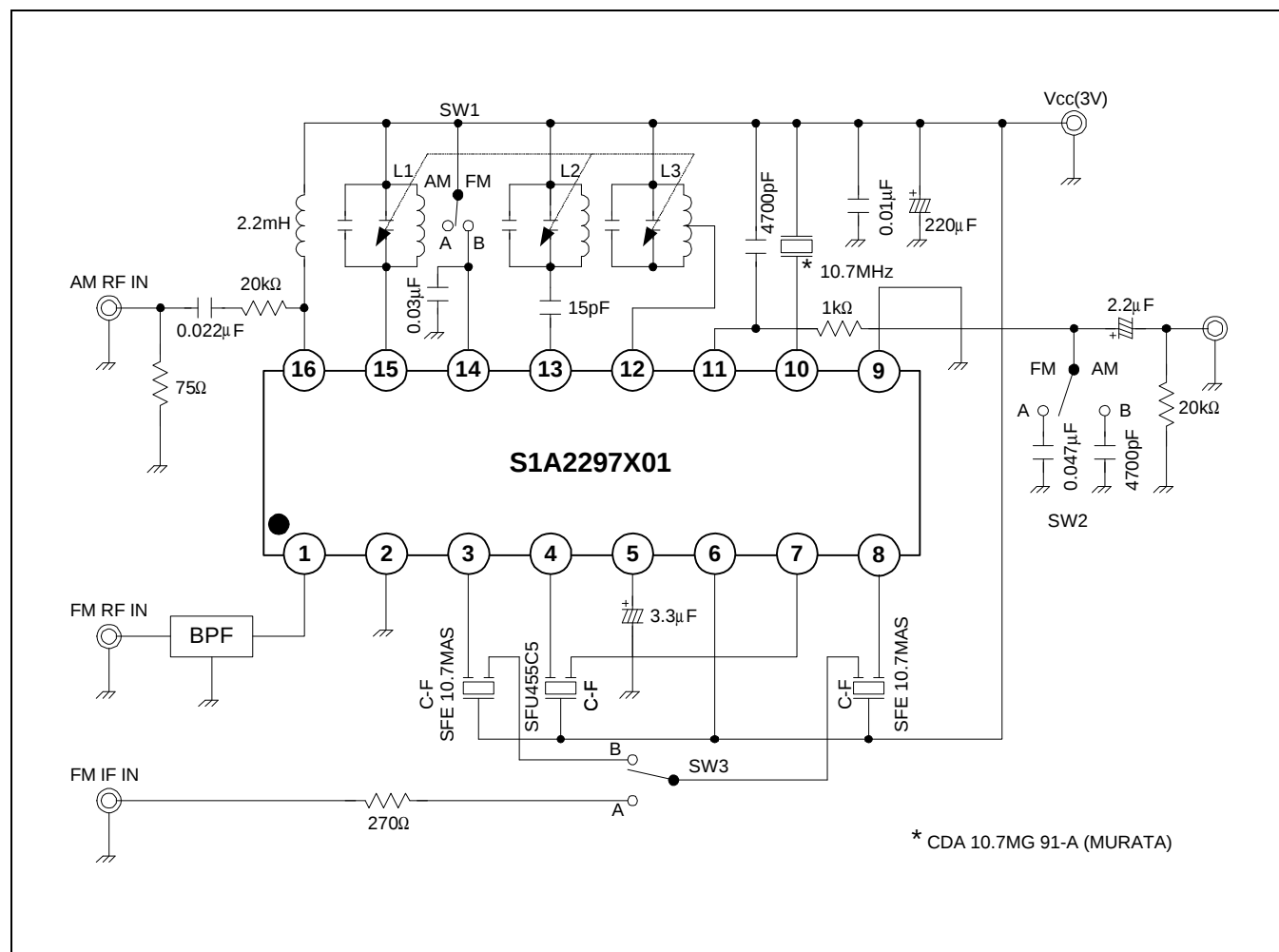
(FM F/E: $f = 98\text{MHz}$, $f_m = 1\text{kHz}$, $\Delta f = 22.5\text{kHz}$, FM IF: 10.7MHz , AM: $f = 1\text{MHz}$, $f_m = 1\text{kHz}$, 30% mod, $V_{CC} = 3\text{V}$)

Characteristic		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current		I_{CCQ1}	FM, $V_I = 0$	6.0	10.0	14.0	mA
		I_{CCQ2}	AM, $V_I = 0$	3.0	5.0	8.0	mA
FM F/E	-3dB Limiting	$V_{(LIM)1}$	$V_O = -3\text{dB Point}$	—	12	22	dB μ
FM IF	-3dB Limiting Sensitivity	$V_{(LIM)2}$	$V_O = -3\text{dB Point}$	42	47	52	dB μ
	Detector Output Voltage	$V_{O(DET)1}$	$V_I = 80\text{dB}\mu$	55	70	85	mVrms
	Total Harmonic Distortion	THD1	$V_I = 80\text{dB}\mu$	—	0.4	1	%
	Signal to Noise Ratio	S/N1	$V_I = 80\text{dB}\mu$	56	62	—	dB
	AM Rejection Ratio	AMR	$V_I = 80\text{dB}\mu$	32	38	—	dB
AM	Voltage Gain	G_{V1}	$V_I = 30\text{dB}\mu$	28	50	72	mVrms
	Detector Output Voltage	$V_{O(DET)2}$	$V_I = 60\text{dB}\mu$	40	60	82	mVrms
	Total Harmonic Distortion	THD2	$V_I = 60\text{dB}\mu$	—	1.0	2.0	%
	Signal to Noise Ratio	S/N2	$V_I = 60\text{dB}\mu$	37	43	—	dB

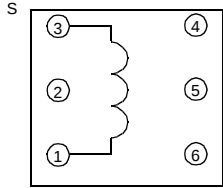
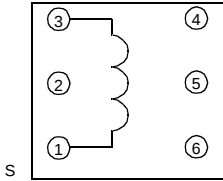
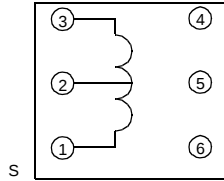
TEST CIRCUIT 1

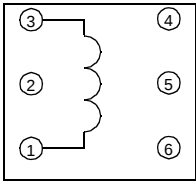
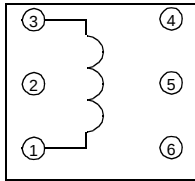
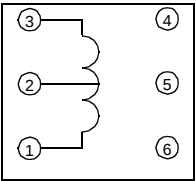


TEST CIRCUIT 2



COIL SPEC

Seal Name	L1		L2		L3	
TURNS	3-1	2 2/8	1-3	2 6/8	1-2	12T
—	—	—	—	—	2-3	73T
WIRE (mm)	0.5	UEW	0.5	UEW	0.08	UEW
CONNECTION (BOTTOM VIEW) (KOREA TOKO)						
FREQUENCY	100MHz		100MHz		792kHz	
TUNING CAPACITY	—		—		—	
INDUCTANCE	—		—		268uH ± 8%min	
UNLOADED Q	—		—		70min	

Seal Name	L1		L2		L3	
TURNS	3-1	2 2/8	1-3	2 6/8	1-2	12T
—	—	—	—	—	2-3	73T
WIRE (mm)	0.5	UEW	0.5	UEW	0.05	UEW
CONNECTION (BOTTOM VIEW)						
KWANG SUNG PART NO	KST-FO2		FST-FR2		FSI-AO2	
FREQUENCY	100MHz		100MHz		796kHz	
TUNING CAPACITY	—		—		—	
INDUCTANCE	—		—		268 uH ± 8% min	
UNLOADED Q	—		—		70 min	

APPLICATION CIRCUIT

