

## INTRODUCTION

The KA2297/D is a monolithic integrated circuit which consists of an FM F/E + AM/FM IF and DET AMP.

The KA2297/D is a no-adjustment AM/FM IF, DET coil.

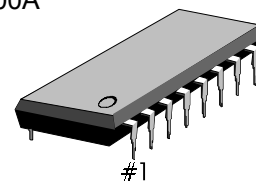
## FEATURES

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

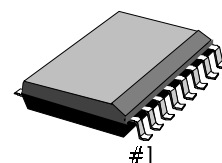
## ORDERING INFORMATION

Device	Package	Operating Temperature
KA2297	16-DIP-300A	-20°C ~ + 75°C
KA2297D	16-SOP-375	

16-DIP-300A



16-SOP-375



## BLOCK DIAGRAM

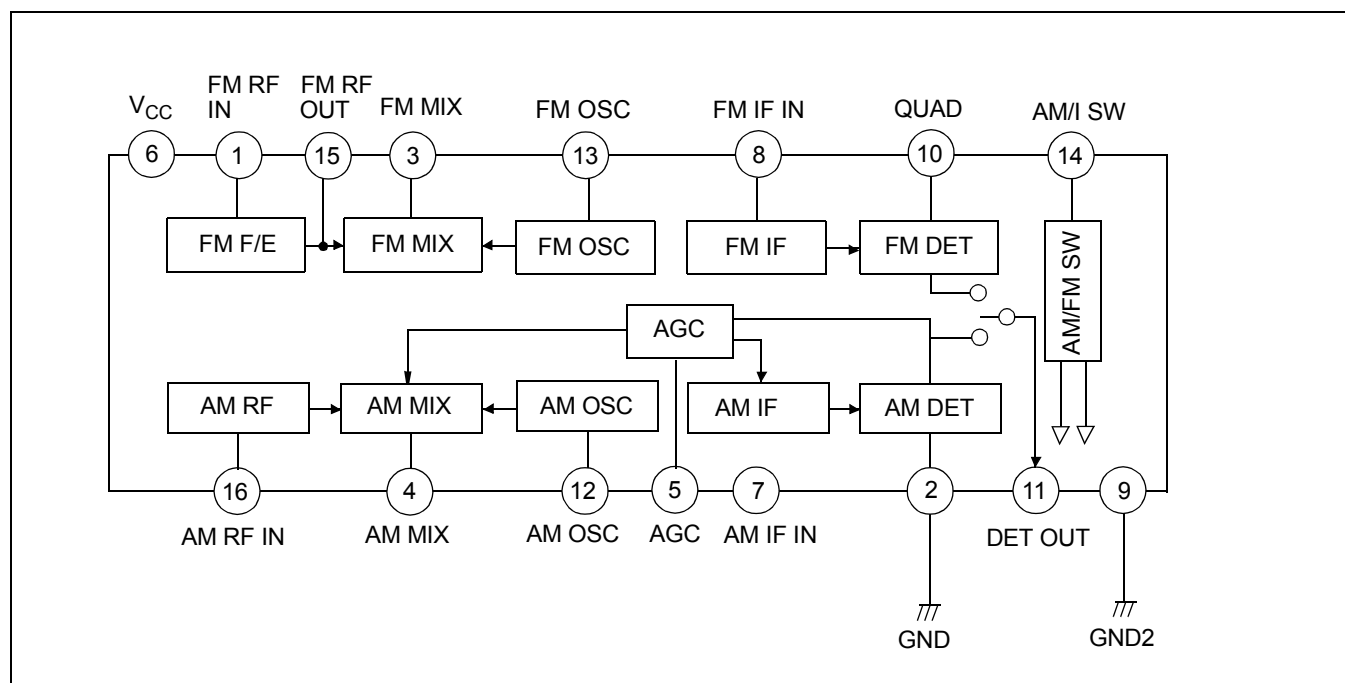


Figure 1.

**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 = 98MHz, fm = 1KHz, FM IF: 10.7MHz, AM: f = 1MHz, fm = 1kHz, f = 30%,  $V_{CC}$  = 3V)

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	$V_{(LIM)1}$	$V_O = -3dB$ Point	—	12	22	dB $\mu$
FM IF	-3dB Limiting Sensitivity	$V_{(LIM)2}$	$V_O = -3dB$ Point	42	47	52	dB $\mu$
	Detector Output Voltage	$V_{O(DET)1}$	$V_I = 80dB\mu$	55	70	85	mVrms
	Total Harmonic Distortion	THD1	$V_I = 80dB\mu$	—	0.4	1	%
	Signal to Noise Ratio	S/N1	$V_I = 80dB\mu$	56	62	—	dB
	AM Rejection Ratio	AMR	$V_I = 80dB\mu$	32	38	—	dB
AM	Voltage Gain	$G_{V1}$	$V_I = 30dB\mu$	28	50	72	mVrms
	Detector Output Voltage	$V_{O(DET)2}$	$V_I = 60dB\mu$	40	60	82	mVrms
	Total Harmonic Distortion	THD2	$V_I = 60dB\mu$	—	1.0	2.0	%
	Signal to Noise Ratio	S/N2	$V_I = 60dB\mu$	37	43	—	dB

TEST CIRCUIT 1

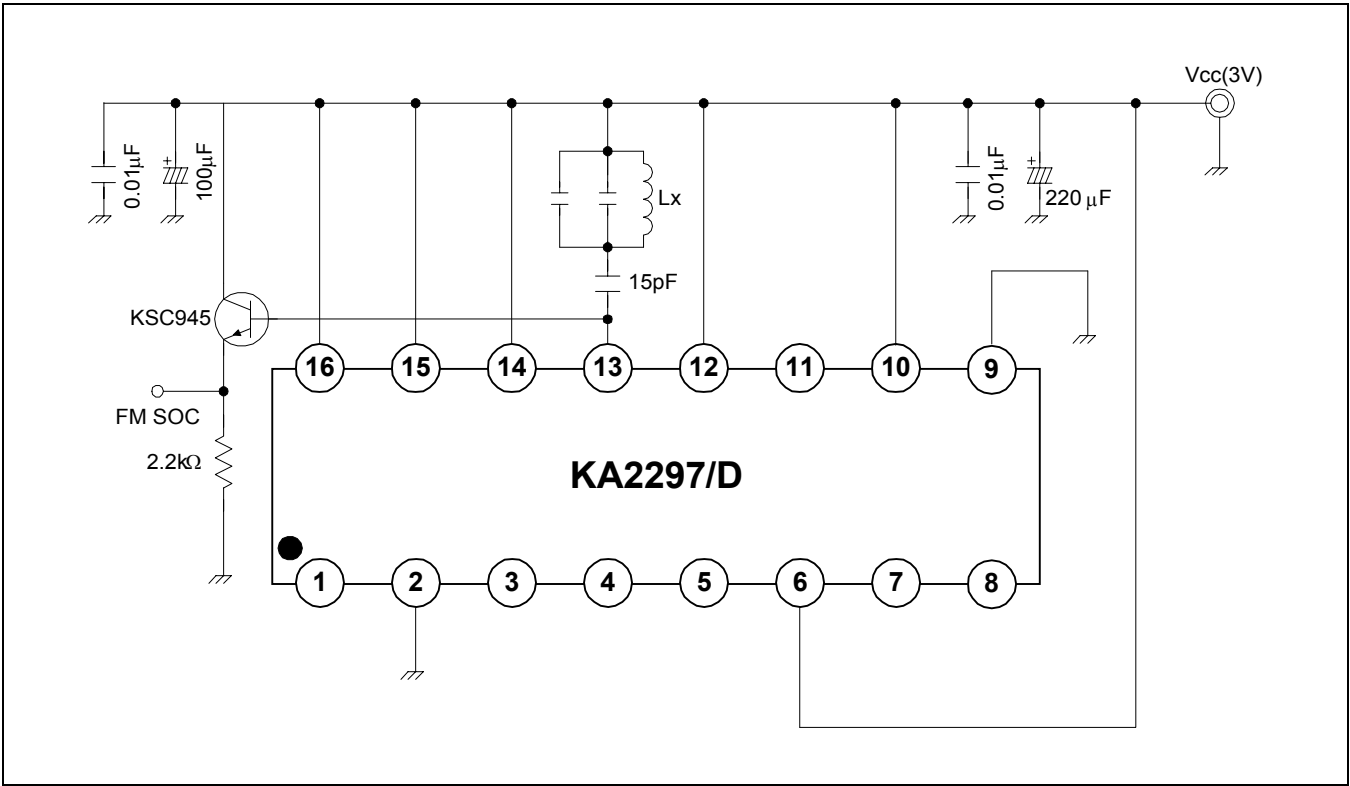


Figure 2.

## TEST CIRCUIT 2

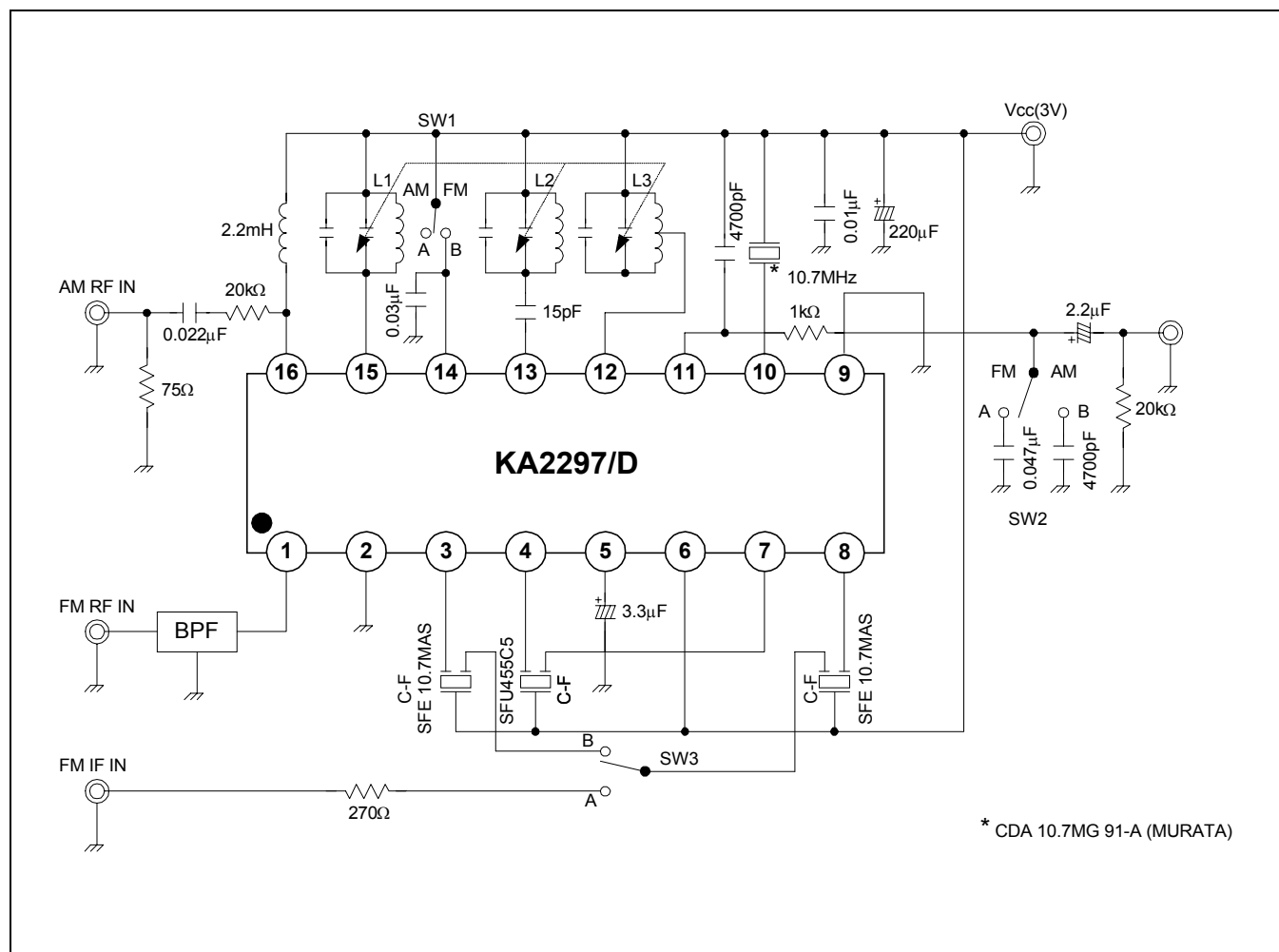
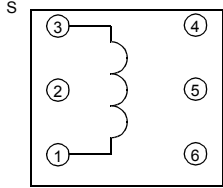
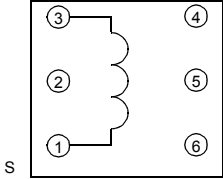
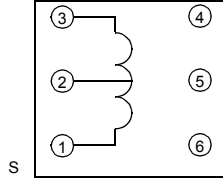
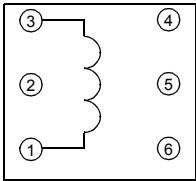
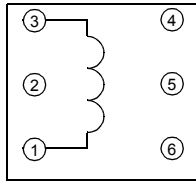
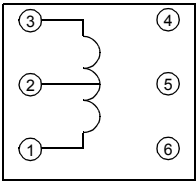


Figure 3.

## 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

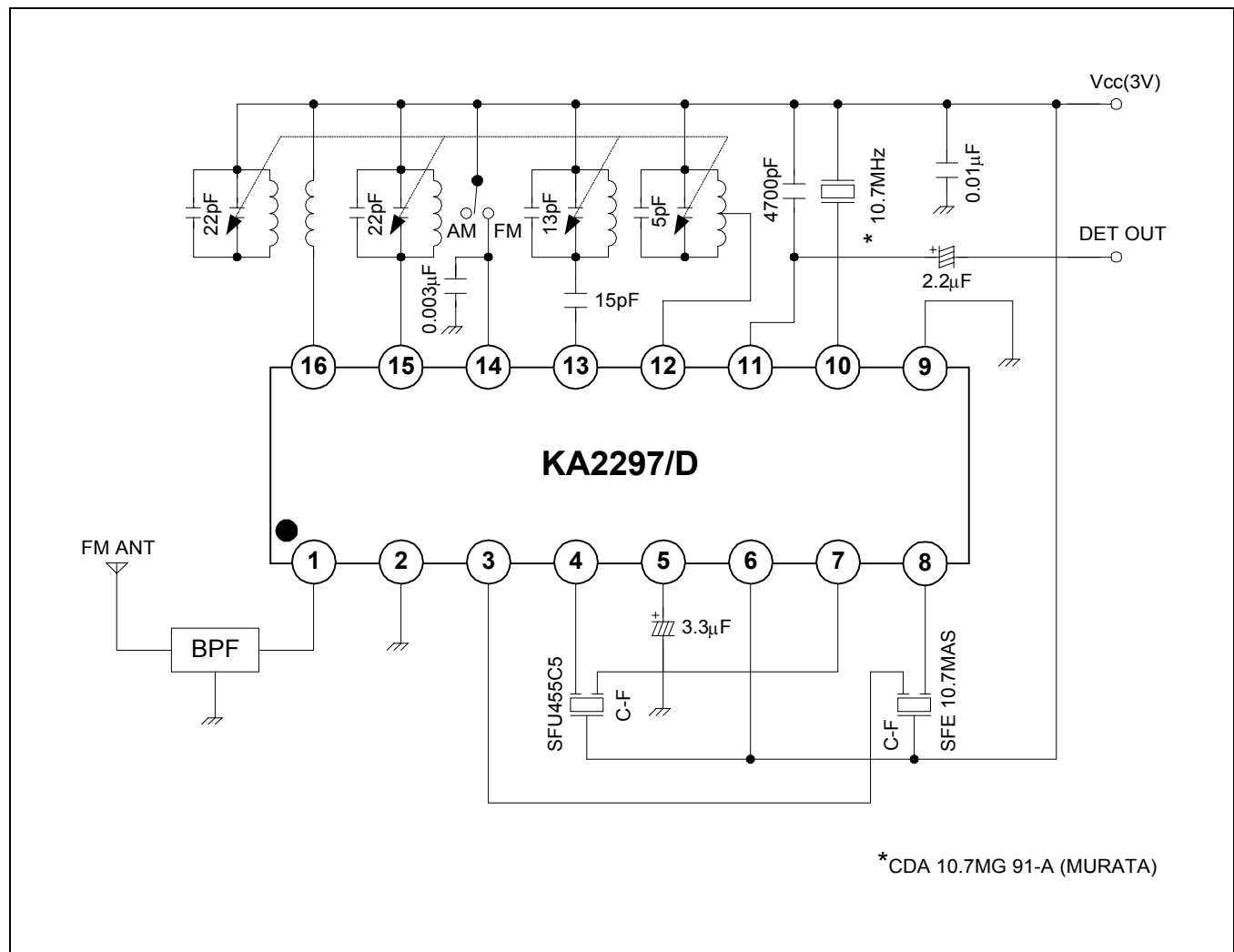


Figure 4.

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Datasheets for electronics components.