

ELECTRONIC AM/FM/MPX/NOISE CANCELLER TUNER.

FEATURES

- Super Compact 1 Pack FM+AM (MW) Tuner.
- Ideal for Car Stereo and Car CD System.
- Upper Side Band Super Heterodyne System.
- SD/SM and IF Counter Terminal for DTS, RDS System Application.
- IF Request Composite Terminal.
- Using AGC, LO/DX Application is Possible.
- Good at Multipath Noise with Diff. Quad Det.

ELECTRICAL SPECIFICATION (Ta=25°C)

ITEM		SPEC
Standard Supply Voltage		8.2 V
Tuning Voltage	FM	1.0 min ~ 7.8 max V (-30~+80°C)
	AM	0.8 min ~ 7.8 max V (-30~+80°C)
Receiving Frequency	FM	87.5 MHz ~ 108.1MHz
	AM	522 KHz ~ 1710 KHz
IF Center Frequency	FM	10.7MHz
	AM	450KHz
Antenna Input Impedance		FM : 75Ω unbalanced

FM TUNING VOLTAGE (Ta=25°C)

Receiving Freq	MIN	TYP	MAX	UNIT	Receiving Freq	MIN	TYP	MAX	UNIT
87.5 MHz	1.0	1.4	-	V	98.1 MHz	-	3.70	-	V
88.1 MHz	-	1.45	-		100.1 MHz	-	4.35	-	
90.1 MHz	-	1.75	-		102.1 MHz	-	5.00	-	
92.1 MHz	-	2.10	-		104.1 MHz	-	5.75	-	
94.1 MHz	-	2.60	-		106.1 MHz	-	6.62	-	
96.1 MHz	-	3.20	-		108.1 MHz	-	7.15	7.8	

AM TUNING VOLTAGE (Ta=25°C)

Receiving Freq	MIN	TYP	MAX	UNIT	Receiving Freq	MIN	TYP	MAX	UNIT
531 KHz	0.8	1.20	-	V	1215 KHz	-	5.00	-	V
603 KHz	-	1.90	-		1323 KHz	-	5.45	-	
711 KHz	-	2.65	-		1404 KHz	-	5.80	-	
819 KHz	-	3.25	-		1512 KHz	-	6.25	-	
900 KHz	-	3.65	-		1602 KHz	-	6.65	-	
999 KHz	-	4.10	-		1710 KHz	-	7.20	7.8	
1107 KHz	-	4.55	-						

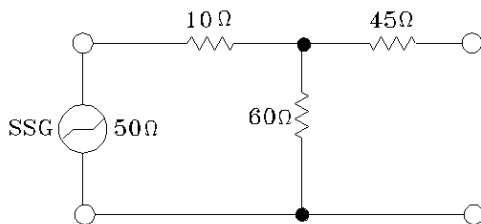
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ELECTRICAL CHARACTERISTICS (FM)

(Unless Otherwise Specified : $V_{CC}=8.2V$, $V_i=60dB\mu W$, $f_i=98MHz$, $\Delta f=22.5kHz$, $f_m=1kHz$)

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range		87.5	-	108.1	MHz
Usable Sensitivity	S/N=30dB	-	7	12	$dB\mu W$
Limiting Sensitivity	Detected Output -3dB	3	8	14	$dB\mu W$
S/N Ratio (Mono)	Input Level	50	55	-	dB
Image Rejection Ratio	Limiting Sensitivity	45	55	-	dB
IF Rejection Ratio	Limiting Sensitivity	60	70	-	dB
1/2 IF Rejection Ratio	Limiting Sensitivity	70	80	-	dB
AM Rejection Ratio	AM: 400Hz, 30% Mod	40	50	-	dB
SD Sensitivity (LO)	SD Voltage 1/2 V_{CC} ,	32	40	48	$dB\mu W$
SD Sensitivity (DX)	SD Voltage 1/2 V_{CC}	12	20	28	$dB\mu W$
SD Band Width		50	80	120	kHz
Stereo Separation	$\Delta f=75kHz$ DEV.	25	30	-	dB
Stereo Lamp Sensitivity	$\Delta f=75kHz$ DEV.	-	5.0	12	$dB\mu W$
Stereo Noise Control	$\Delta f=75kHz$ DEV.(Input $40dB\mu W$)	5	10	15	$dB\mu W$
High Cut Control	$\Delta f=75kHz$ DEV.(Input $30dB\mu W$)	2	5	9	dB
Audio Fidelity(1KHZ 0 dB)	75 μ sec Pre-Emphasis ON 15KHZ	-5	-2		dB
THD	$\Delta f=22.5kHz$ DEV.	-	0.3	1.0	%
Over Load Modulation THD	$\Delta f=75kHz$ DEV.	-	1.0	2.0	%
Strong Signal Input THD	120 $dB\mu W$, 1kHz 22.5kHz DEV.	-	0.3	1.0	%
OSC Output Level	1k Ω Load	120	200	280	mV _{rms}
AF Output Level	1kHz, 22.5kHz DEV. $6dB\mu W$ 88MHz	60	-	-	mV _{rms}
AF Out Channel Difference		-3.0	0	+3.0	dB

DUMMY CONDITION



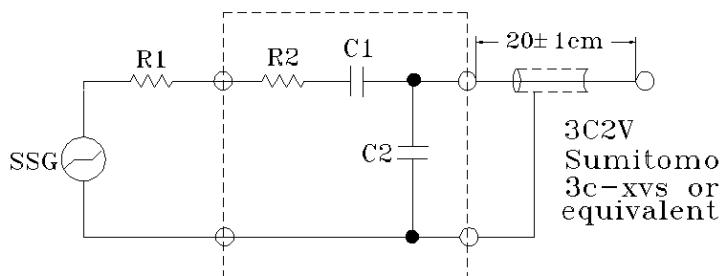
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ELECTRICAL CHARACTERISTICS (MW)

(Unless Otherwise Specified : $V_{CC}=8.2V$, $V_i=74dB\mu V$, $f_i=999kHz$, Mod=30%, $f_m=400Hz$)

CHARACTERISTIC	TEST CONDITION	MIN.	TYP.	MAX.	UNIT (EMF)	
Maximum Sensitivity	Detected output $30mV_{rms}$	-	22	28	$dB\mu V$	
Maximum Sensitivity Balance	522~1710kHz	-	3.0	7.0	dB	
Usable Sensitivity	S/N=20dB	-	26	32	$dB\mu V$	
S/N Ratio		45	50	-	dB	
Image Rejection	$f_i=1404kHz$	50	55	-	dB	
IF Rejection	$f_i=603kHz$	55	60	-	dB	
Band Width	Detected Output -6dB	5.5	7.5	9.5	kHz	
Selectivity	$f_i=999kHz \pm 9kHz$	50	60	-	dB	
AGC Effect	$V_i=74dB\mu V$ AGC Level=-10dB	50	55	-	dB	
Whistle Rejection		900 KHz	30	40	-	dB
		1350 KHz	35	50	-	dB
AF Output Voltage		50	75	100	mV	
IF Output Voltage	220k Ω , 33pF Local, IF Request Terminal : 5(V)	110	130	-	mV	
OSC Output Voltage	1k Ω Load (rms)	250	270	-	mV	
SD Sensitivity (DX)	SD Voltage 1/2 V_{CC} , LO/DX Terminal : 0(V)	27	35	43	$dB\mu V$	
SD Sensitivity (LO)	SD Voltage 1/2 V_{CC} , LO/DX Terminal : 5(V)	47	55	63	$dB\mu V$	
THD	MOD=30%	-	0.2	1.0	%	
Over Load Modulation THD	MOD=80%	-	0.8	2.0	%	
Strong Signal Input THD	120dB μV , 400Hz, 30% Mod	-	0.2	1.0	%	
Fidelity	EXT. Mod 400Hz, 30% -6dB Point	LOW	-	50	100	Hz
		HIGH	2k	2.3k	-	
OSC Temperature Drift	Temp. Cycle 20 $^{\circ}C \pm 40^{\circ}C$	-	20	30	kHz	

DUMMY CONDITION



S.S.G : Standard
Signal Generator

R1 : SSG Output
Impedance

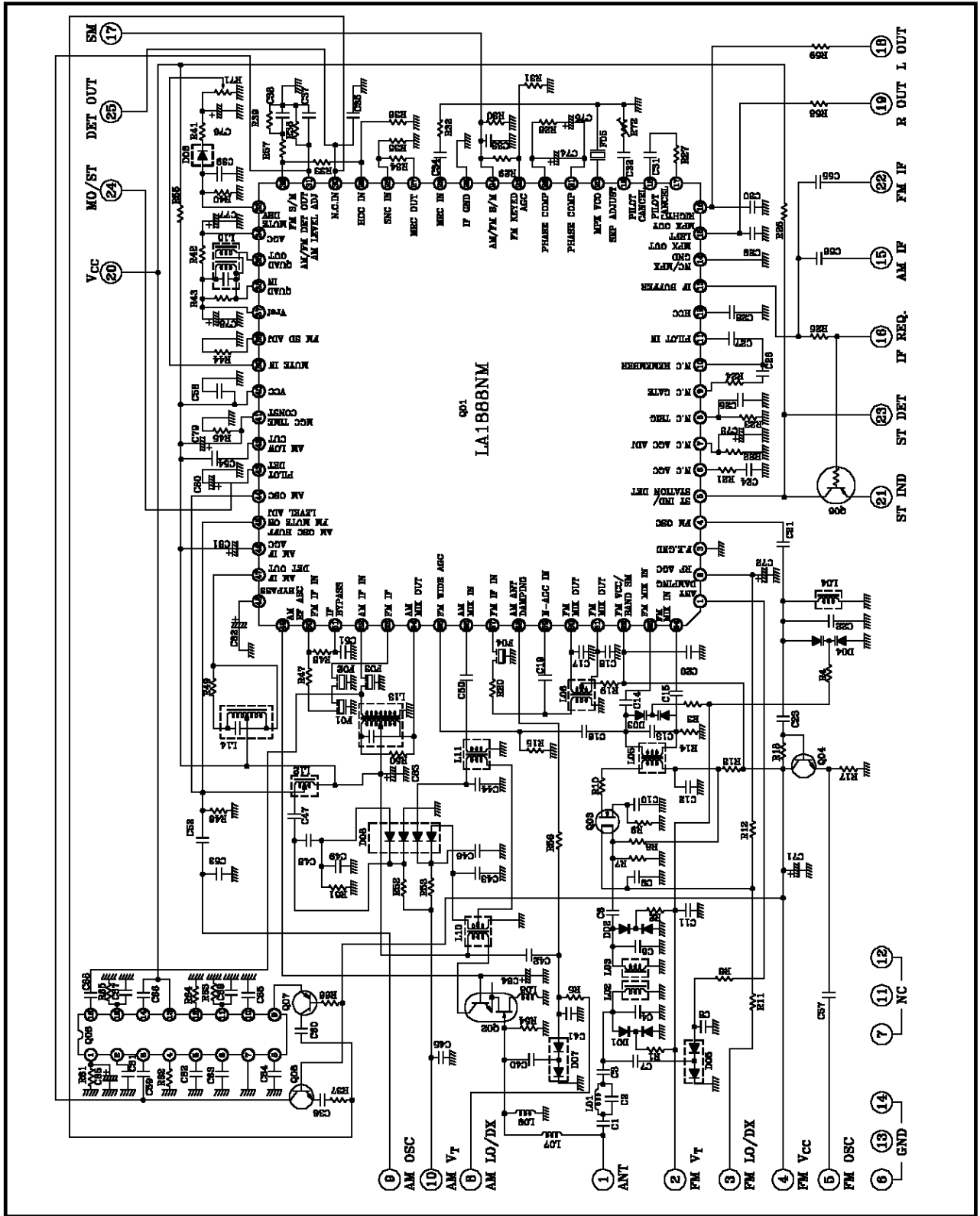
$R1+R2=80\Omega$

$C1=15pF$

$C2=65pF$

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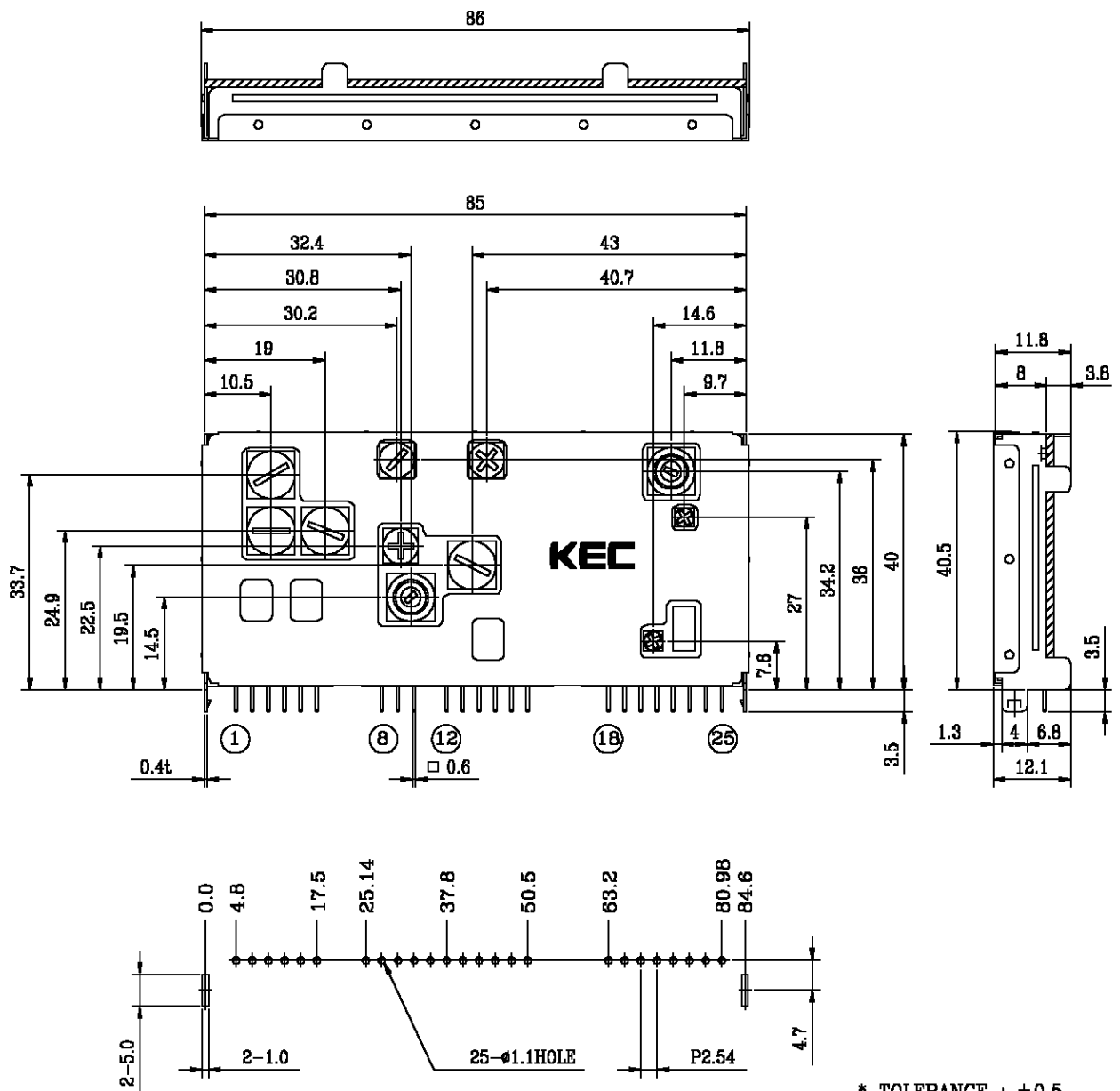
INTERNAL CIRCUIT



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OUTLINE DIMENSIONS (Unit:mm)

* TERMINALS	6	G N D	12	N.C	18	L OUT	24	DET OUT	
1	A N T	7	N.C	13	G N D	19	R OUT	25	DET OUT
2	FM VT	8	AM LO/DX	14	G N D	20	VCC		
3	FM LO/DX	9	AM OSC	15	AM IF COUNTER	21	ST IND		
4	FM VCC	10	AM VT	16	IF REQUEST	22	FM IF COUNTER		
5	FM OSC	11	N.C	17	S-METER	23	ST DET		



HOLE DIMENSIONS (TOP VIEW) * TOLERANCE : ± 0.1

* TOLERANCE : ± 0.5