



**TV VIF & SIF & DEFLECTION SYSTEM**

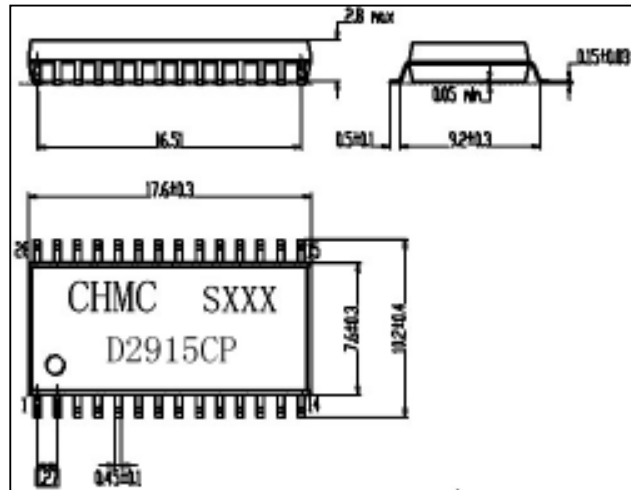
**D2915**

**(IC FOR TV LARGE INTEGRATION)**

**GENERAL DESCRIPTION**

The D2915 is a monolithic integrated circuit containing all stages for the VIF, SIF and deflection functions of television receivers.

**OUTLINE DRAWING**



**FUNCTIONS**

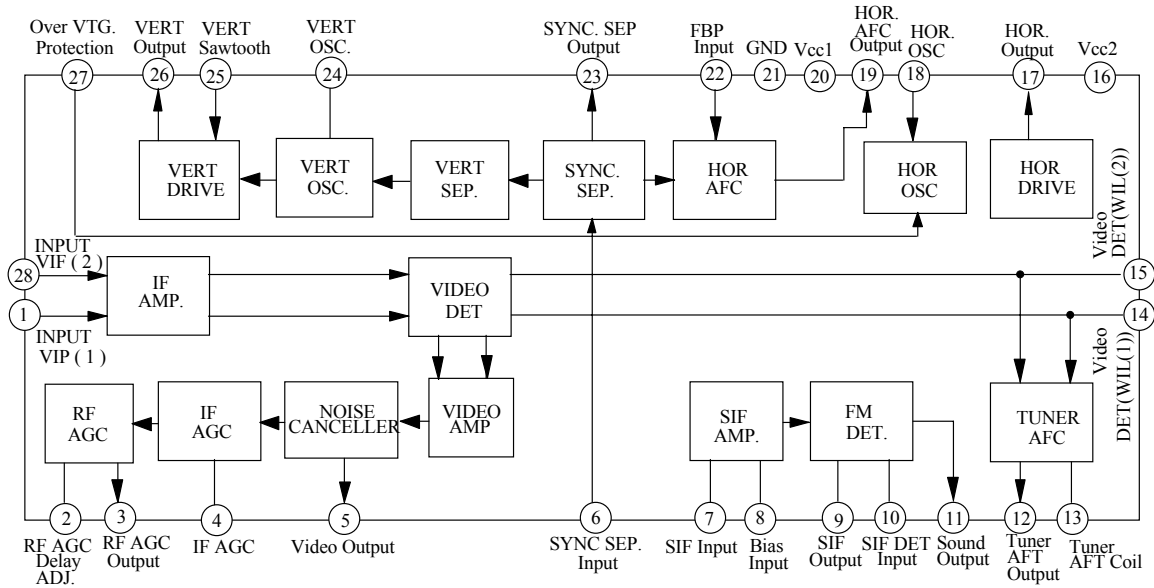
- IF AMP
- Video Amp
- IF AGC
- Tuner AFT
- Sound DET. (FM DET.)
- Vertical trig.
- Vertical drive
- Horizontal drive
- Video DET. (AM DET.)

- Noise canceller
- Forward RF AGC
- SIF Amp
- Sync separation
- Vertical oscillation
- Horizontal oscillation
- Horizontal AFC

**FEATURES**

- High integrator technology makes it possible the integration of video IF circuit, tuner AFC circuit, sound IF circuit and deflection-jungle circuit on one single chip.
- Supply voltage range : 8~12V (Typ. 10V).
- Operating Temperature: -20°C~+70°C

## BLOCKDIAGRAM



## ABSOLUTE MAXIMUM RATINGS(TA=25°C)

Characteristic	Symbol	Value		Unit
Supply Voltage	Vcc(V <sub>20-21</sub> )	12		V
Supply Current	I <sub>20</sub>	85		mA
	I <sub>16</sub>	15		mA
Circuit Voltage	V <sub>2,3,4,24~21</sub>	V <sub>20-21</sub>	0	V
	V <sub>8~21</sub>	5.5	0	
	V <sub>13~21</sub>	4.2	0	
	V <sub>17~21</sub>	V <sub>16-21</sub>	0	
Circuit Current	I <sub>5,6,11,23,26</sub>	+0.3	-10	mA(peak)
	I <sub>19</sub>	+0.6	-0.6	
	I <sub>25</sub>	+10	0	
	I <sub>17</sub>	+10	-4	
Power Dissipation (Ta=70°C)	P <sub>D</sub>	1100		mW
Operating Temperature	T <sub>OPR</sub>	-20~+70		°C
Storage Temperature	T <sub>STG</sub>	-55~+150		°C

## ELECTRICAL CHARACTERISTICS (V<sub>CC1</sub>=10V, V<sub>CC</sub>=9.5V, T<sub>a</sub>=25°C)

### Video Section

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Video Det. Output	V <sub>o</sub>	m=87.5%	1.8	2.1	2.4	V <sub>p-p</sub>
Input Sensitivity	V <sub>s</sub>	V <sub>o</sub> =-3dB		50	55	dBμ
Maximum Input	V <sub>MAX</sub>	V <sub>o</sub> >+0dB	105	110		dBμ
SN Rating	S/N	V <sub>i</sub> =80dBμ	51	56		dBμ
Differential Gain	A <sub>D</sub>	m=87.5%		4	8	%
Differential Phase	SP <sub>D</sub>	m=87.5%		3	6	deg
Video Freq. Characteristic	f <sub>c</sub>	V <sub>o</sub> =-3dB	4.5	6.0	8.0	MHz
Sync. Peak Voltage	V <sub>P</sub>		1.9	2.3	2.7	V
Noise Inverter Output Level	V <sub>NT</sub>		1.0	1.4	1.8	V
Noise Inverter Capture Level	V <sub>NI</sub>		3.0	4.0	5.0	V
Sound IF Output	V <sub>SIF</sub>	P/S=20dB	100	104	107	dBμ
Input Resistor (pin 1)	R <sub>IN1</sub>	f=45.75MHz	0.8	1.0	1.2	kΩ
Input Capacitor(pin 1)	C <sub>ZNI</sub>	f=45.75MHz	3.0	3.4	3.8	pF
Output Resistor(pin 5)	R <sub>o5</sub>	f=500kHz	30	50	150	Ω
RF AGC Max. Voltage	G <sub>RFAGC</sub>	f=10kHz, V <sub>4</sub> =5mV	36	42	48	dB
RF AGC Max. Voltage	V <sub>3(MAX)</sub>		8.2	8.8	9.4	V
RF AGC Min. Voltage	V <sub>3(MIN)</sub>		3.6	4.2	4.8	V
AFC Center Voltage	V <sub>2</sub>		4.0	5.4	6.0	V
AFC SW Operating Voltage	V <sub>AFTSW</sub>	R <sub>s</sub> =10k	0.5	2.6	3.0	V
AFC Max Output Voltage	V <sub>12(Max.)</sub>		8.5	9.6	10.0	V
AFC Min Output Voltage	V <sub>12(Min.)</sub>		0	0.7	1.2	V
Selection Sensitivity	μ	R <sub>L</sub> =68k /82k	30	50	90	mV/kHz

### Sound Section

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Sound Det. Output	V <sub>o</sub>	f <sub>o</sub> =4.5MHz, f <sub>m</sub> =400Hz f=±25kHz, V <sub>i</sub> =100mVrms	200	300	400	mVrms
Input Limit Voltage	V <sub>I(LIM)</sub>	f=4.5MHz, f <sub>m</sub> =400Hz f=±25kHz		280	450	μVrms
Total Harmonic Distortion	THD	f <sub>o</sub> =4.5MHz, f <sub>m</sub> =400Hz		0.6	1.0	%
AM Rejection Ratio	AMR	f=±25kHz, V <sub>i</sub> =100mVrms	43	55		dB
Input Impedance	R <sub>17</sub>	f=4.5MHz	6	20	100	k
	C <sub>17</sub>		1.3	4.3	7.3	pF

## Sound Section

continue

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Detector Input Impedance	R <sub>D9</sub>	f=4.5MHz	2.0	3.0	4.0	k
	C <sub>D9</sub>		2.1	5.1	8.1	pF
	R <sub>D10</sub>		50	200		k
	C <sub>D10</sub>		2.9	3.4	3.9	pF

## Deflection Section

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Sync Sep. Hori. Pulse Width (1)	T <sub>sync1</sub>	Video Input 2.5Vp-p, APL=50%, V <sub>cc1</sub> =10V	4.8	5.1	5.4	μS
Sync Sep. Hori. Pulse Width (2)	T <sub>sync2</sub>	Video Input 1.0Vp-p, APL=50%, V <sub>cc1</sub> =10V	4.9	5.2	5.5	μS
Hori. AFC Hori. Pulse Width (1)	T <sub>sync3</sub>	Video Input 2.5Vp-p, APL=50% V <sub>cc1</sub> =10V	4.8	5.1	5.4	μS
Hori. AFC Hori. Pulse Width (2)	T <sub>sync4</sub>	Video Input 1.0Vp-p, APL=50%, V <sub>cc1</sub> =10V	4.9	5.2	5.5	μS
Vert Osc, Start Supply Voltage	V <sub>fvos</sub>	f <sub>vo</sub> =40~60Hz Output=0.7Vp-p		4.9	6	V
Vert. Free Running Frequency	f <sub>vo</sub>	R <sub>osc(v)</sub> =30 k V <sub>cc1</sub> =10V	57	60	63	Hz
Vert. OSC. Pulse Width	T <sub>vo</sub>	R <sub>osc(v)</sub> =30 k V <sub>cc1</sub> =10V	470	650	830	μS
Vert. full in Range	f <sub>vo/Vcc</sub>	V <sub>cc1</sub> =12V, 8V f <sub>vo/Vcc</sub> =f <sub>vo</sub> (12V)-f <sub>vo</sub> (8V)	0	1.0	1.3	Hz
Vert. full in Range	f <sub>pV</sub>	Composite Signal Input 2Vp-p V <sub>cc1</sub> =10V	39	43	47	Hz
Hori. OSC. Start Supply Voltage	V <sub>hHO.S</sub>	f <sub>HO</sub> =10~20kHz Output=1Vp-p Pin16 Voltage		3.7	5	V
Hori. OSC. Freq.	f <sub>HO</sub>	R <sub>osc(H)</sub> =21K+B=20V	15.0	15.75	16.25	kHz
Hori. OSC. Pulse Width	T <sub>HO</sub>	R <sub>osc(H)</sub> =21 K+B=20V	21	24	27	μS
Hori. OSC. Freq. Voltage Dependent	f <sub>HO/Vcc</sub>	V <sub>cc2</sub> =10V,8V f <sub>HO/Vcc</sub> = f <sub>HO</sub> (10V)-f <sub>HO</sub> (8V)	0	50	100	Hz
Hori. OSC. Control sensitivity	β	I <sub>1</sub> ± 100μA Input Variable OSC. Freq. Variable	73	81	89	Hz/μA
Phase Det. Sensitivity	μ <sub>p</sub>	TV Input 2Vp-p, R(U)=31.4k , μ=V19*10	13.5	16.5	19.5	μA/μS
X-Ray Protector Operating Voltage	V27-21		0.81	0.87	0.93	V
X-Ray Protector Input Resistor	R27		16	19	22.5	k

TYPICAL APPLICATION CIRCUIT (12" or 14" B/W TV)

