

# AN5036

## TV Tuning Control Circuit

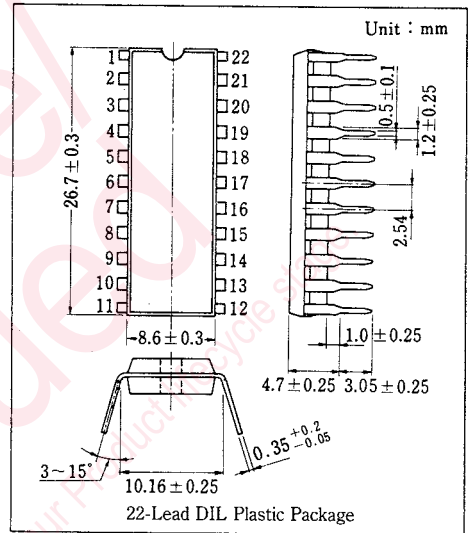
### Outline

The AN5036 is an integrated circuit designed for tuner control circuit of TV electronic tuning system using a frequency synthesizer method.

### Features

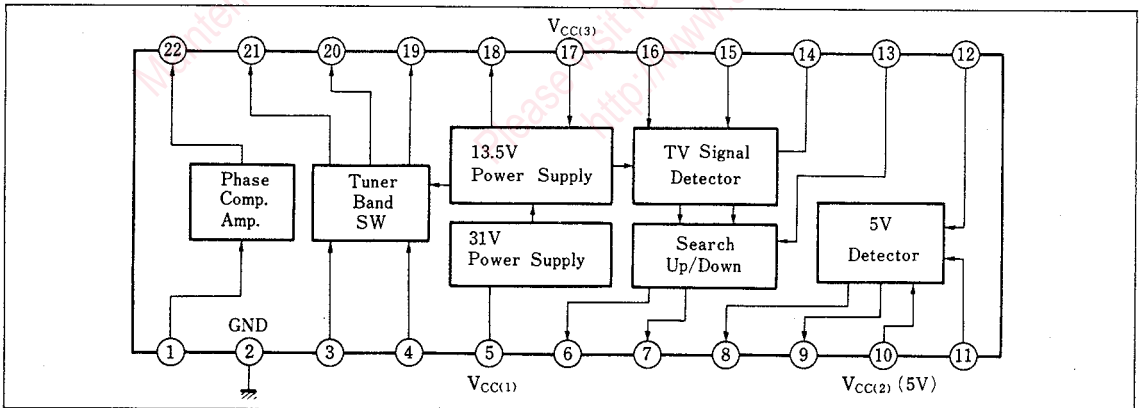
- Reference voltage stabilizer for electronic tuning incorporated
- Electronic tuner power supply incorporated
- Power supply voltage rise-up detection circuit incorporated

### Pin



Pin No.	Pin Name	Pin No.	Pin Name
1	Phase Comp. Signal Input	12	V <sub>CC</sub> Det. Input
2	GND	13	AFC. Voltage Input
3	Band SW Input (1)	14	Filter Terminal
4	Band SW Input (2)	15	H. BLK Pulse Input
5	31V Regulator (V <sub>CC1</sub> )	16	H. Sync. Input
6	AFC Down Output	17	V <sub>CC3</sub>
7	AFC Up Output	18	BM Output
8	Reset Output	19	BU Output
9	C.E. Output	20	BV Output
10	V <sub>CC2</sub>	21	BS Output
11	3V Ref. Voltage Input	22	BT Voltage Output

### Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Item		Symbol	Rating		Unit
Voltage	Supply Voltage	V <sub>CC2</sub>	7		V
		V <sub>CC3</sub>	24		V
	Circuit Voltage	V <sub>6-2</sub> , V <sub>7-2</sub>	0	+7	V
V <sub>21-2</sub>		0	+27	V	
Current	Supply Current	I <sub>5</sub>	0	+13	mA
	Circuit Current	I <sub>17</sub>	0	+60	mA
		I <sub>18</sub>	-60	+20	mA
		I <sub>19</sub> , I <sub>20</sub>	-30	0	mA
		I <sub>21</sub>	0	+30	mA
Power Dissipation		P <sub>b</sub>	1100		mW
Temperature	Operating Ambient Temperature	T <sub>opr</sub>	-20~+70		°C
	Storage Temperature	T <sub>stg</sub>	-55~+150		°C

■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
V <sub>CC1</sub> Circuit Current	I <sub>5</sub>	1	S <sub>1</sub> =A, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =3.5V	2.5	3.3	4.1	mA
V <sub>CC2</sub> Circuit Current	I <sub>10</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =5V	4.2	5.6	7.2	mA
V <sub>CC3</sub> Circuit Current	I <sub>17</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =5V	14	19	24	mA
SD Output Voltage	V <sub>6-2(1)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =3.5V	0	0.2	0.4	V
	V <sub>6-2(2)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =5.5V	4.9	5.0	5.1	V
	V <sub>6-2(3)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =B, V <sub>10</sub> =5V, V <sub>13</sub> =7.5V	0	0.2	0.4	V
SU Output Voltage	V <sub>6-2(4)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =B, V <sub>10</sub> =5V, V <sub>13</sub> =9.5V	4.9	5.0	5.1	V
	V <sub>7-2(1)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =B, V <sub>10</sub> =5V, V <sub>13</sub> =3.5V	4.9	5.0	5.1	V
	V <sub>7-2(2)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =B, V <sub>10</sub> =5V, V <sub>13</sub> =5.5V	0	0.2	0.4	V
	V <sub>7-2(3)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =7.5V	4.9	5.0	5.1	V
5V Power Supply	V <sub>7-2(4)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =5V, V <sub>13</sub> =9.5V	0	0.2	0.4	V
	V <sub>8-2(1)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =3.5V, V <sub>13</sub> =5V	0	0.1	0.3	V
Rise-up Detection	V <sub>8-2(2)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =4.5V, V <sub>13</sub> =5V	4.2	4.4	4.5	V
	V <sub>9-2(1)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =3.5V, V <sub>13</sub> =5V	2.2	2.6	3.0	V
Phase Comparison Amplifier Output Voltage	V <sub>9-2(2)</sub>	1	S <sub>1</sub> =B, S <sub>2</sub> =A, V <sub>10</sub> =4.5V, V <sub>13</sub> =5V	0		0.2	V
	V <sub>22-2(1)</sub>	2	S <sub>3</sub> =B, S <sub>4</sub> =B, S <sub>5</sub> =B, V <sub>1</sub> =2.2V	28	31	35	V
BM Output Voltage	V <sub>22-2(2)</sub>	2	S <sub>3</sub> =B, S <sub>4</sub> =B, S <sub>5</sub> =B, V <sub>1</sub> =3.2V	0.4	1.0	1.6	V
BU Output Voltage	V <sub>18-2</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =B, S <sub>5</sub> =A, V <sub>1</sub> =0	12.5	13.6	14.7	V
BV Output Voltage	V <sub>19-2</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =C, S <sub>5</sub> =C, V <sub>1</sub> =0	11.1	12.2	13.5	V
BS Output Voltage	V <sub>20-2</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =B, S <sub>5</sub> =D, V <sub>1</sub> =0	11.1	12.3	13.5	V
	V <sub>21-2(1)</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =B, S <sub>5</sub> =B, V <sub>1</sub> =0	0	0.4	0.8	V
V <sub>CC1</sub> Voltage Regulator	V <sub>21-2(2)</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =A, S <sub>5</sub> =B, V <sub>1</sub> =0	26.5		27	V
V <sub>CC1</sub> Operating Resistance	V <sub>5-2</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =B, S <sub>5</sub> =B, V <sub>1</sub> =0	29	31.5	34	V
	I <sub>5</sub>	2	S <sub>3</sub> =A, S <sub>4</sub> =B, S <sub>5</sub> =B, V <sub>1</sub> =0		10	25	Ω



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