

# KA2142

## Vertical Deflection Output Circuit

### Features

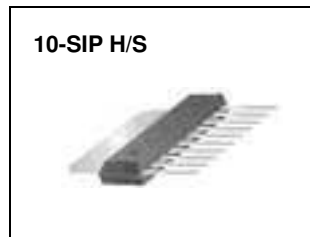
- High output current
- Pump - up circuit
- Low dissipation
- Minimum number of external parts required
- Direct drive to the deflection coils
- Internal thermal shutdown circuit

### Applications

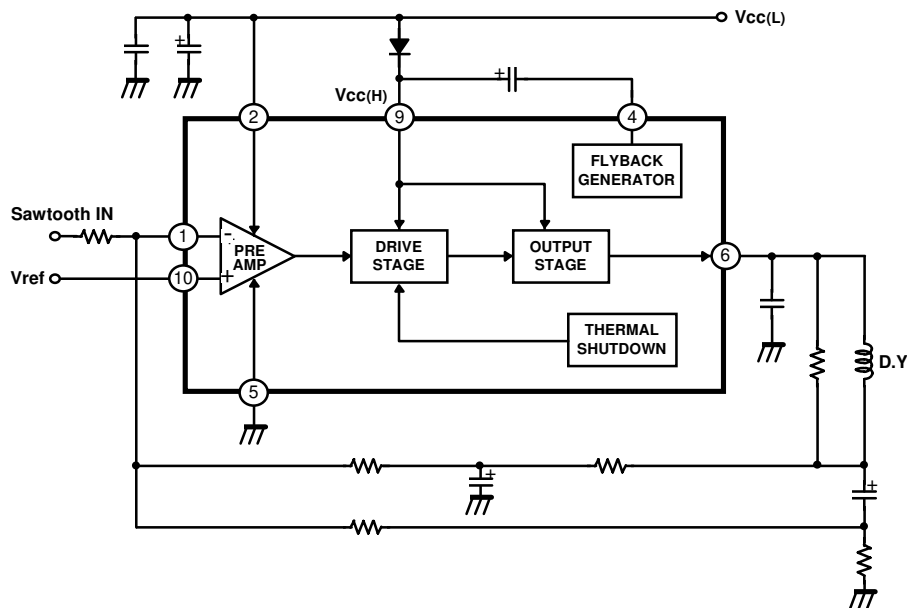
- Power Amplifier
- Thermal Protection
- Flyback Generator

### Description

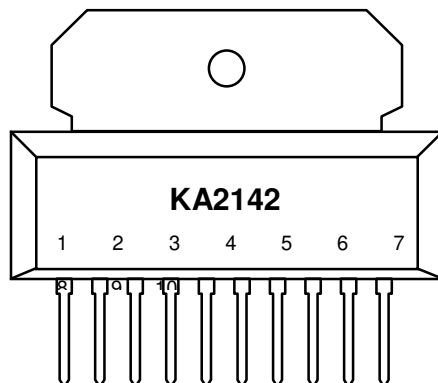
The KA2142 is a monolithic linear IC designed for color TV and monitor vertical deflection output. It is intended for direct drive of the deflection coils with a high efficiency.



### internal Block Diagram

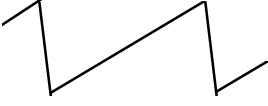
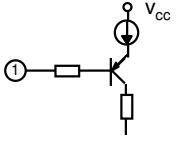

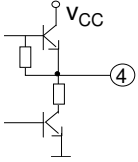
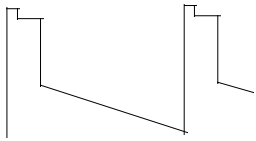
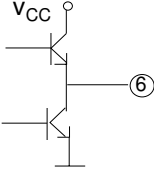
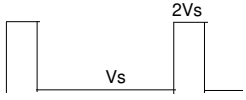
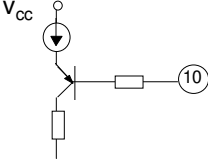


## Pin Assignments



Pin Number	Pin Name	I/O	Pin Function Description
1	Vin ( - )	I	Inverting Input
2	Vcc(L)	I	Supply Voltage
3	-	-	N.C.
4	F.G	O	Flyback Generator
5	GND	-	Ground
6	VO	O	Output
7	-	-	N.C.
8	-	-	N.C.
9	Vcc(H)	I	Output Stage Supply Voltage
10	Vin ( + )	I	Non-Inverting Input

## PIN Definitions

Pin Number	Pin Name	WAVEFORM	EQUIVALENT CIRCUIT
1	Inverting Input		
2	Voltage Supply	DC	-
4	Flyback Generator		
5	Ground	DC	-
6	Output Voltage		
9	Output Stage Voltage Supply		-
10	Non-Inverting Input	DC	

## Absolute Maximum Rating (Ta = 25°C)

Parameter	Symbol	Value	Unit
Supply Voltage	Vcc(L)	35	V
Flyback Peak Voltage	V6, V9	70	V
Flyback Generator Voltage	V6	35	V
Input Voltage	V1, V10	V cc(L) - 0.5	V
Peak - to - Peak Output Current*	Io(p-p)	3	A
Peak - to - Peak Flyback Current ( f = 50 or 60Hz, Tfb ≤ 1.5mS )	I4(p-p)	3	A
Total Power Dissipation ( Ta = 25°C )	PD	15	W
Storage Temperature Range	Tstg	-40 ~ +150	°C
Operating Ambient Temperature	Topt	-25 ~ +70	°C

\* Maximum output peak to peak current in TV or Monitor set.

## Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Between Junction and Case	Rth ( j - c )	12	°C/W
Thermal Resistance Between Junction and Ambient	Rth ( j - a )	60	°C/W
Thermal Shut down Temperature	Ttsd	150	°C

## Electrical Characteristic

(Refer to the test circuit , V cc(L)= 35V, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	VCC(L)	-	15	25	35	V
	VCC(H)	-	15	-	70	V
Supply Quiescent Current	ICC(L)	-	-	6	16	mA
	ICC(H)	-	-	22	36	mA
Pin4 Saturation Voltage to Gnd	V4SAT	I4 = 20mA	-	0.5	1	V
Saturation Voltage to supply	VHSAT	I6 = -1.2A	-	1.6	2.2	V
		I6 = -0.7A	-	1.3	1.8	V
Saturation Voltage to ground	VLSAT	I6 = 1.2A	-	1	1.4	V
		I6 = 0.7A	-	0.7	1	V
Output Center Voltage	VMID	R1=5.6K,Rfb=45K V1=V10=2V	-	18	-	V
Input Bias Current	IBIAS	V1 = 1V, V10 = 2V	-	-0.1	-1	μA

## Typical Performance Characteristic

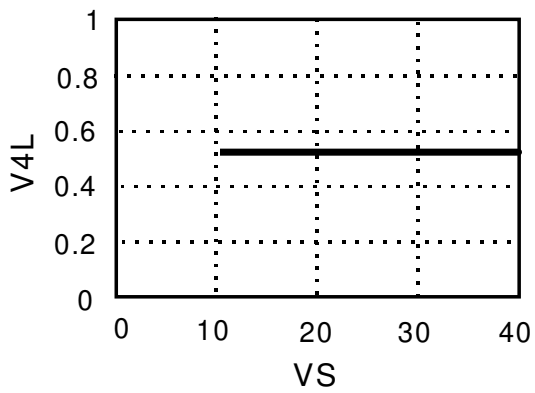


Figure 1. Vs-V4L

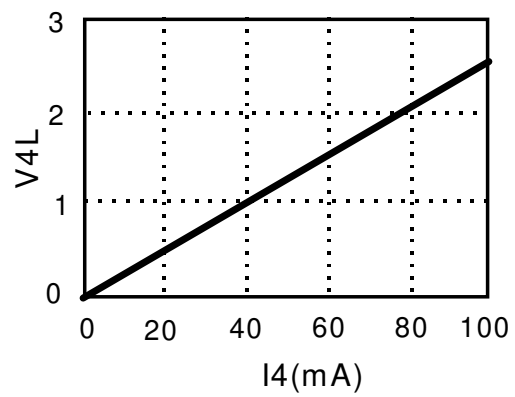


Figure 2. I4-V4L

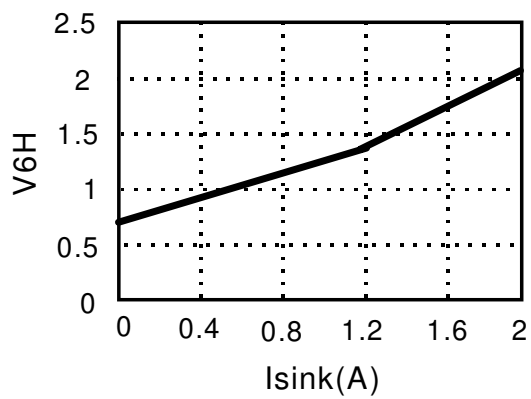


Figure 3. Isink-V6H

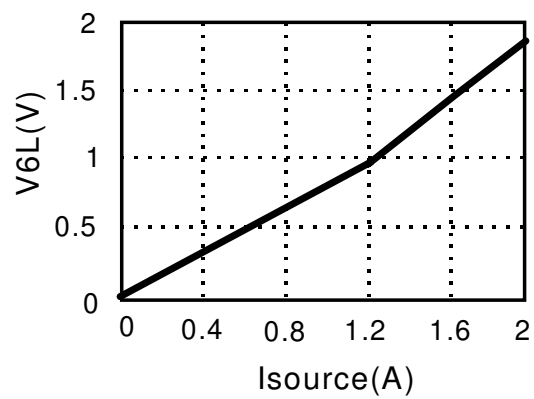


Figure 4. Isource-V6L

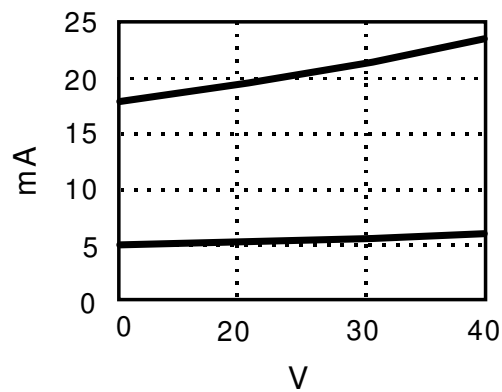
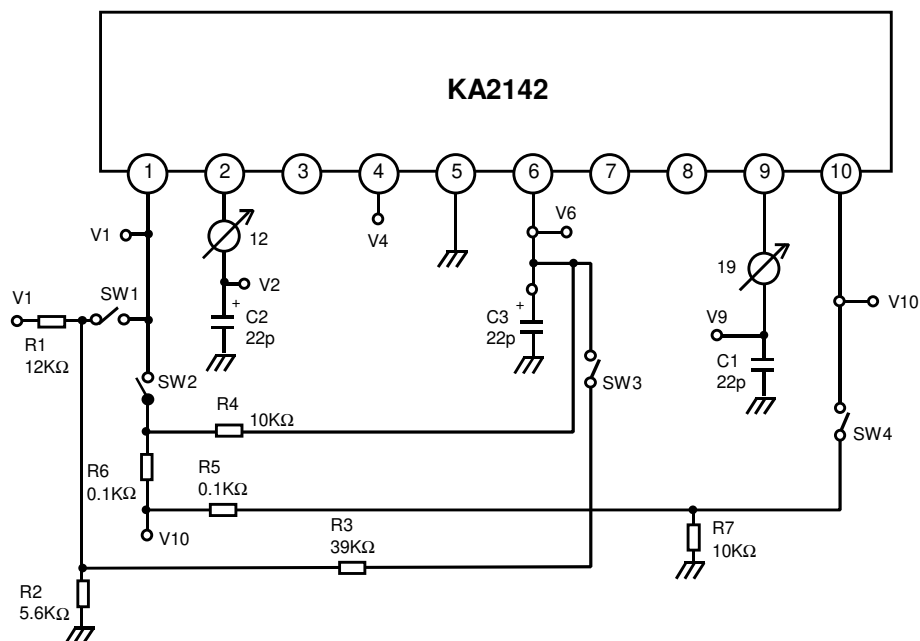


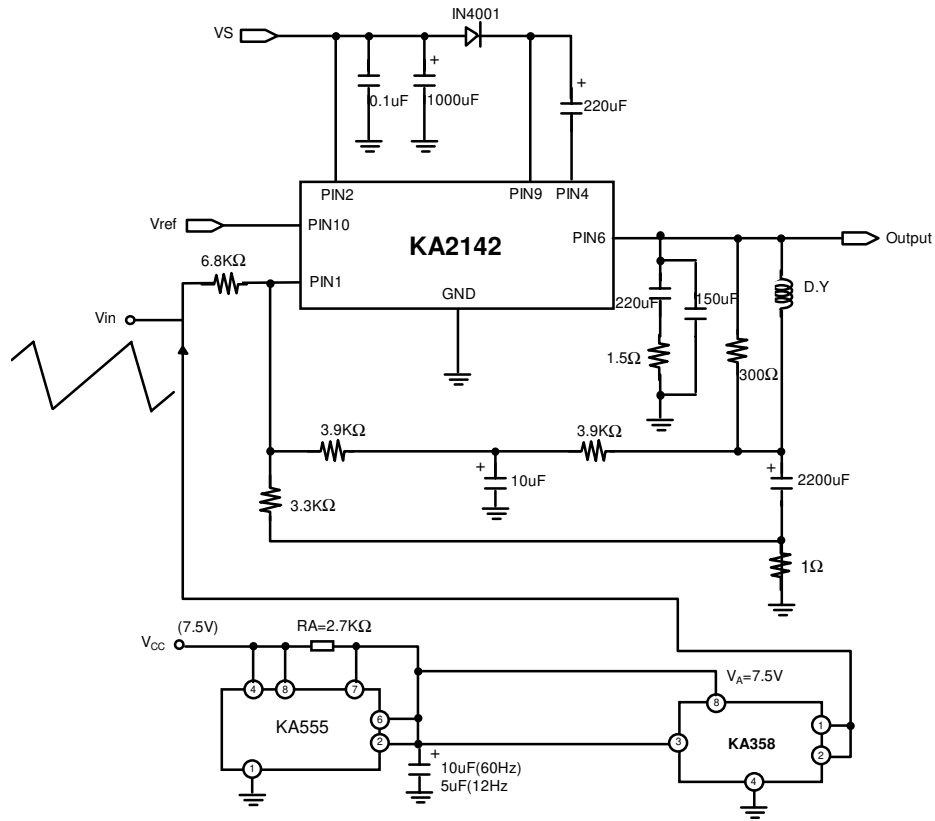
Figure 5. Vs-I2, I9

## DC Test Circuit

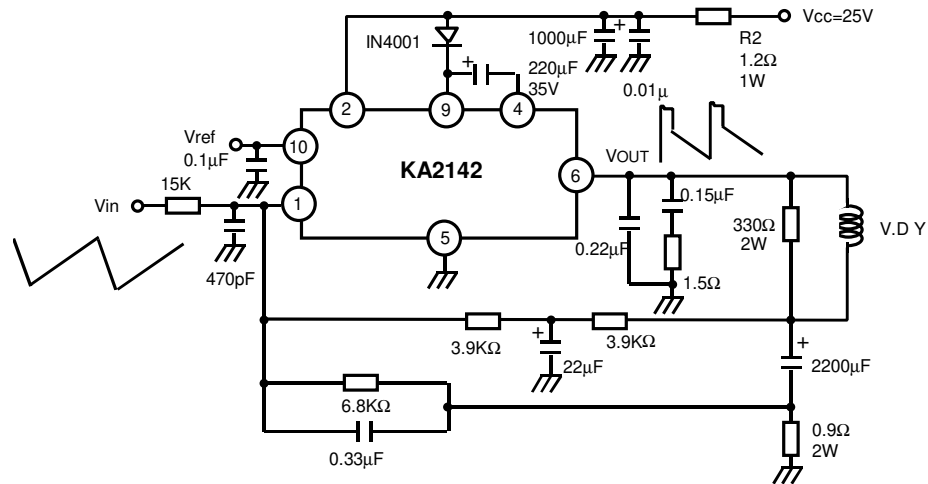


ITEM	INPUT VOLTAGE (V)					SWITCH STATE			
	V1	V10	Vin1	Vin2	SW1	SW2	SW3	SW4	
I2, I9	-	-	-	2	OFF	ON	OFF	ON	
I1	1	2	-	-	OFF	OFF	OFF	OFF	
V4L	3	2	-	-	OFF	OFF	OFF	OFF	
V6L	3	2	-	-	OFF	OFF	OFF	OFF	
V6H	1	2	-	-	OFF	OFF	OFF	OFF	

## AC Test Circuit



## Typical Application Circuit

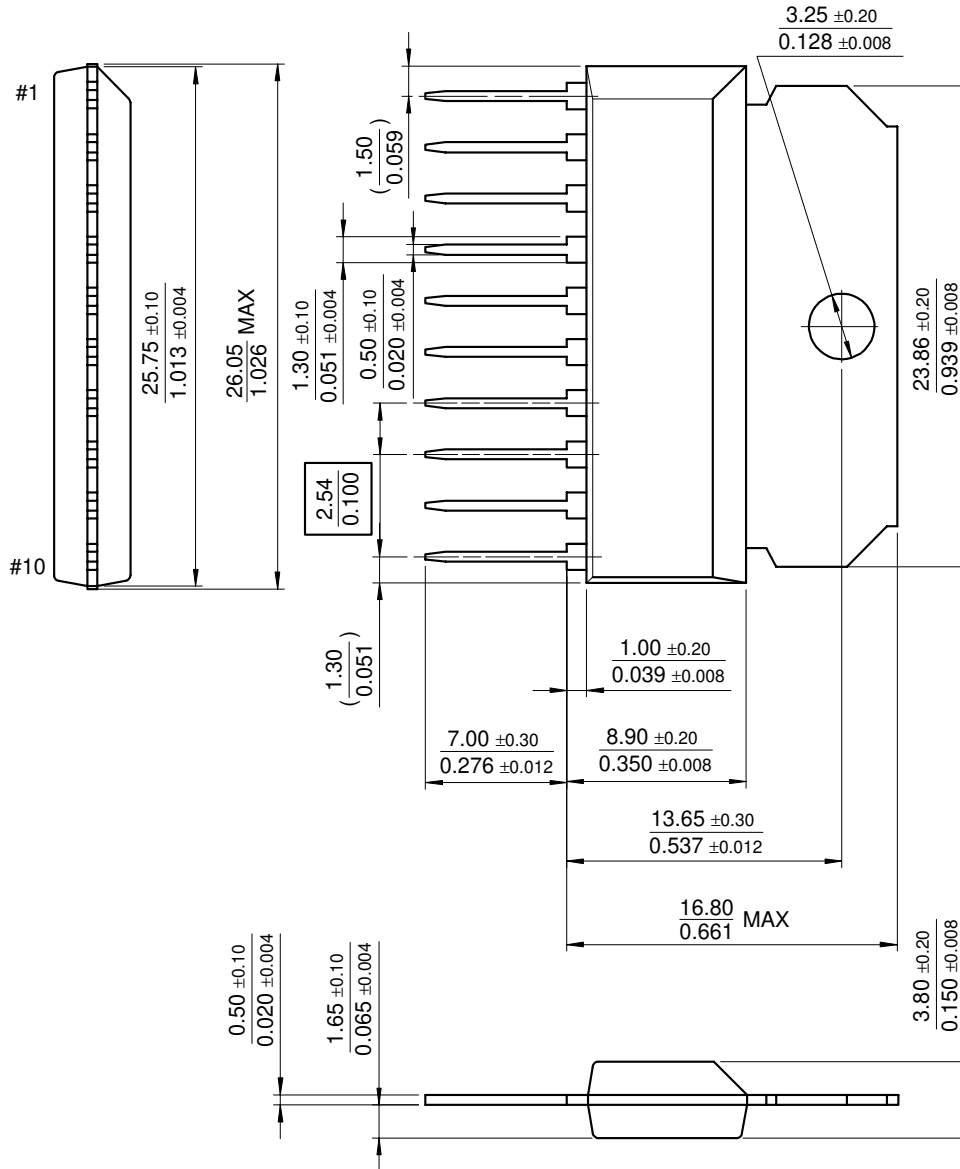


# Mechanical Dimensions

Package

Dimensions in millimeters

## 10-SIP H/S





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## Ordering Information

Product Number	Package	Operating Temperature
KA2142	10-SIP H/S	-20°C ~ +70 °C

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