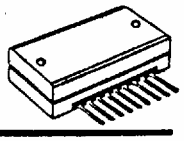
SANYO



VPH01

FBET Hybrid IC
Video Pack (VPH Series)
Video Output Amplifiers For
Extended-Definition TV Projections

Overview

The VPH01 is Video Output Amplifier for a Extended-Definition TV Projection integrates a complet amplifier using high-precision FBET and LSBT transistor chips into a single IC, allowing very high-output voltage, wide-bandwidth video output amplifier circuits to be implemented with greatly reduced parts count. The result is that cost reduction and saving board space can be realized. VPH01's 9-pin metal SIP package also minimizes EMI problems and simplifies circuit board design.

The 18MHz bandwidth makes the VPH01 ideally suited for use with 32kHZ line frequency EDTV Projection. A supply voltage of 170V is typical.

The VPH01 is one of the devices in a series of Sanyo's IC that cover the complete range of video output amplifier applications - - from EDTV·projection to externally ATV/MAC·projections.

Evaluation samples are available now.

For HDTV-PROJECTION oriented applicatins, refer to the VPH03 Video output Amplifier System data sheets.

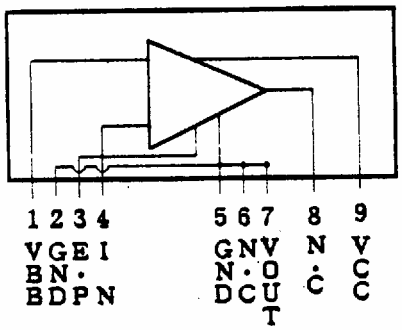
Features

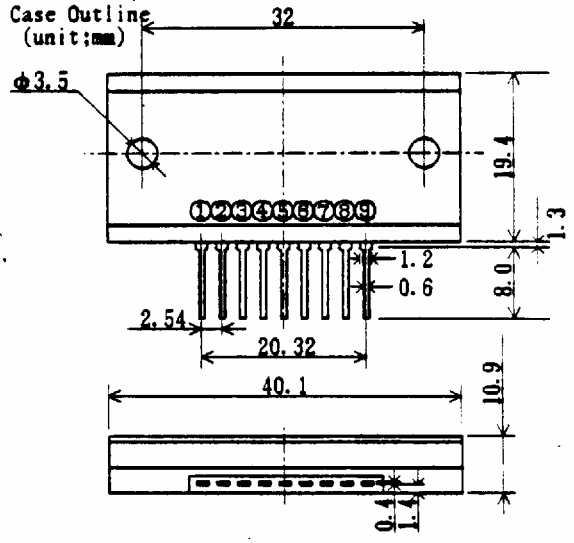
- ·High performance
- ·Up to 100Vp-p output voltage
- ·18MHz typical bandwidth
- ·Simplifies circuit design
- ·Compact package
- ·Metal casing reduces EMI

Absolute Maximum Ratings at Ta=25℃

			unit
Maximum Supply Voltage	VCC	230	V
	VBB	20	V
Allowable Power Dissipation	PD (Ta=25℃)	3.5	W
	PD (Tc=25℃)	20	W
Junction Temperature	Tj	150	℃
Operating Temperature	Ta(op)	85	℃
Storage Temperature	Tstg	-20 to 110	℃

Connection and Outline





Specifications and information herein are subject to change without notice.

SANYO Electric Co.,Ltd. Semiconductor Overseas Marketing Div.
Natsume Bldg., 18-6, 2-chome, Yushima, Bunkyo-ku, TOKYO 113 JAPAN

Recommended Operating Conditions at Ta=25℃

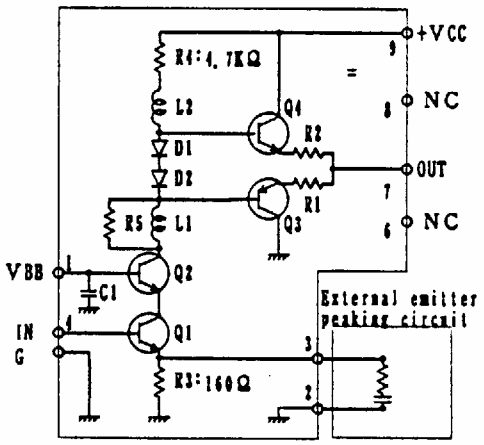
			unit
Condition 1	VCC	Vout ~100Vp-p	150 V
	VBB	Vin(DC)=3.1V	12 V
Condition 2	VCC	Vout ~150Vp-p	200 V
	VBB	Vin(DC)=4.1V	12 V

Electrical Characteristics at Ta=25℃

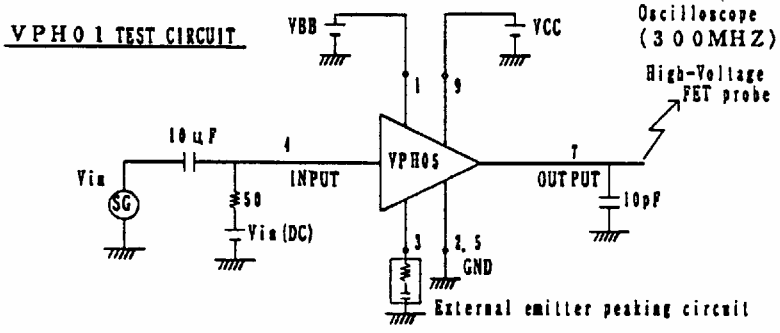
				min	typ	max	unit
Frequency Bandwidth	fc(-3dB)	Condition 1	Vout=100Vp-p	15	18		MHz
		Condition 2	Vout=150Vp-p	13	15		MHz
Voltage Gain	VG(DC)			26	29	32	times
Current Dissipation	ICC(1)	Condition 1	f=10 MHz clock		29		mA
	ICC(2)	Condition 1	f=18 MHz clock		35		mA
	ICC(3)	Condition 2	f=10 MHz clock		43		mA
	ICC(4)	Condition 2	f=15 MHz clock		47		mA

Equivalent Circuit

VPH01 INTERNAL CIRCUIT

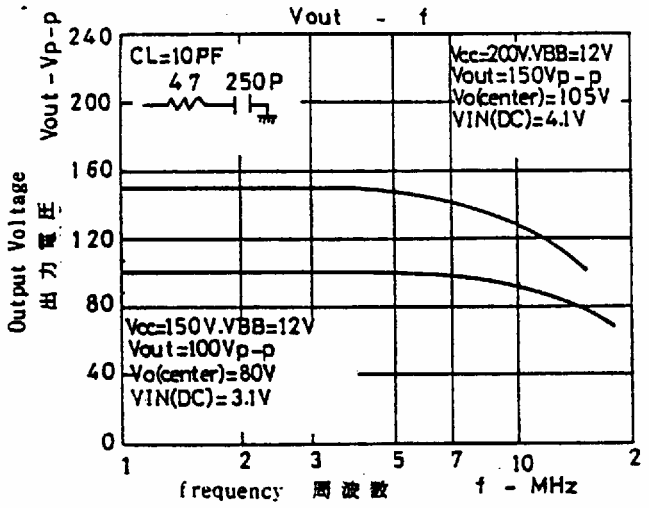


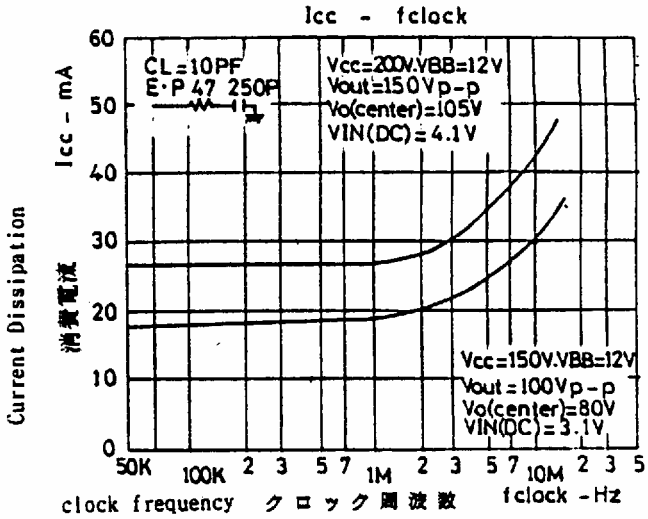
VPH01 TEST CIRCUIT

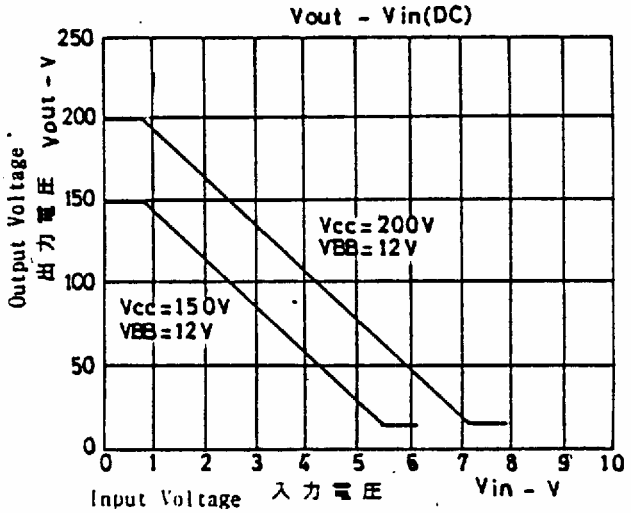


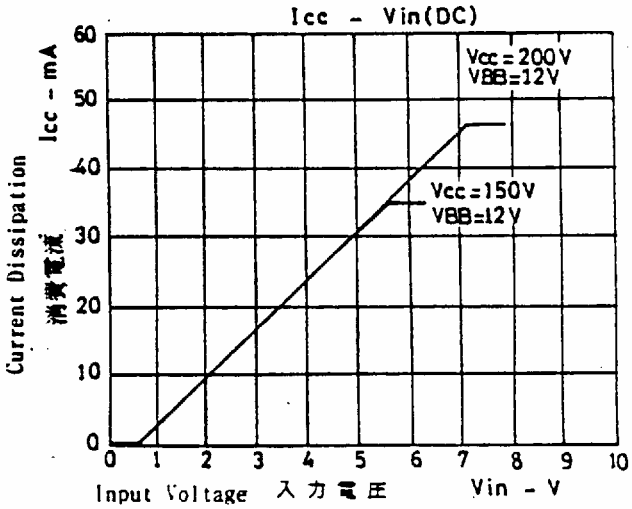
Precautions

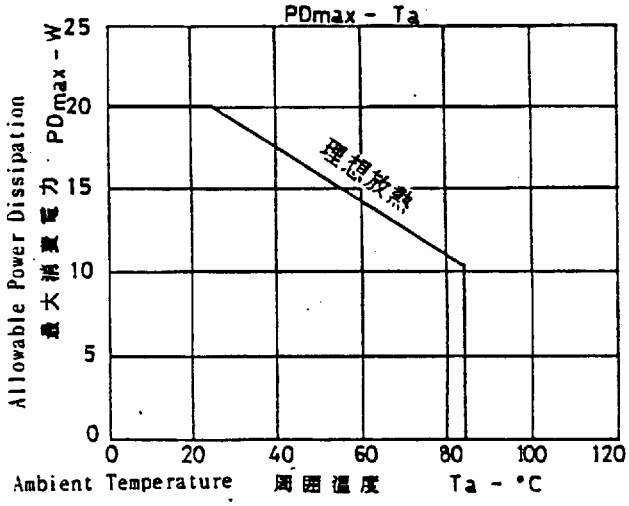
1) Do not short the pins, or degradation may occur.
2) On heat sink design and test board condition, refer to the technical document "Sanyo Video Pack".
3) Case is connected to the internal GND.
4) The mounting torque should be in the range of 4 to 6Kg·cm


Vout - f
Vout - Vp-p
Output Voltage 出力電圧
CL=10PF
47 250P
Vcc=200V.VBB=12V
Vout=150Vp-p
Vo(center)=105V
VIN(DC)=4.1V
Vcc=150V.VBB=12V
Vout=100Vp-p
Vo(center)=80V
VIN(DC)=3.1V
240
200
160
120
80
40
0
1 2 3 5 7 10 2
frequency 周波数
f - MHz


Icc - fclock
Icc - mA
Current Dissipation 消費電流
CL=10PF
E·P 47 250P
Vcc=200V.VBB=12V
Vout=150Vp-p
Vo(center)=105V
VIN(DC)=4.1V
Vcc=150V.VBB=12V
Vout=100Vp-p
Vo(center)=80V
VIN(DC)=3.1V
60
50
40
30
20
10
0
50K 100K 2 3 5 7 1M 2 3 5 7 10M 2 3 5
clock frequency クロック周波数
fclock -Hz


Vout - Vin(DC)
Vout - V
Output Voltage 出力電圧
Vcc=200V
VBB=12V
Vcc=150V
VBB=12V
250
200
150
100
50
0
0 1 2 3 4 5 6 7 8 9 10
Input Voltage 入力電圧
Vin - V


Icc - Vin(DC)
Icc - mA
Current Dissipation 消費電流
Vcc=200V
VBB=12V
Vcc=150V
VBB=12V
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10
Input Voltage 入力電圧
Vin - V


PDmax - Ta
Allowable Power Dissipation 最大消費電力 PDmax - W
理想放熱
25
20
15
10
5
0
0 20 40 60 80 100 120
Ambient Temperature 周囲温度
Ta - °C