

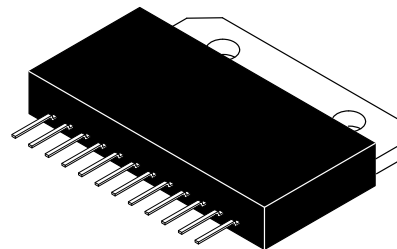
## The RF Line Triple Video Output Hybrid Amplifier

A high performance triple video output amplifier designed specially for use as the video channel final stage in high resolution color monitors.

- Typical 10–90% Transitions Times are 2.3 ns
- Supports Video Clock Rates up to 250 MHz
- Up to 80 V<sub>p-p</sub> Output Swing with 90 V Supply Voltage
- Low Power Consumption
- Excellent Gray–Scale Linearity
- Unconditional Stability
- Gold Metallization System for the Ultimate in Reliability

**MHW3928**

**2.3 ns  
TRIPLE VIDEO OUTPUT  
HYBRID  
AMPLIFIER**



CASE 455-01, STYLE 1

### MAXIMUM RATINGS

| Rating                           | Symbol           | Value       | Unit |
|----------------------------------|------------------|-------------|------|
| Supply Voltage                   | V <sub>CC</sub>  | +95         | Vdc  |
| Operating Case Temperature Range | T <sub>C</sub>   | –20 to +100 | °C   |
| Storage Temperature Range        | T <sub>stg</sub> | –40 to +100 | °C   |

**ELECTRICAL CHARACTERISTICS** (T<sub>C</sub> = 25°C, V<sub>CC</sub> = 90 V, C<sub>LOAD</sub> = 10 pF, 40 V Peak-to-Peak Output Swing with 45 Vdc Offset; R<sub>1</sub> = 510 Ω, C<sub>1</sub> = 39 pF Typ)

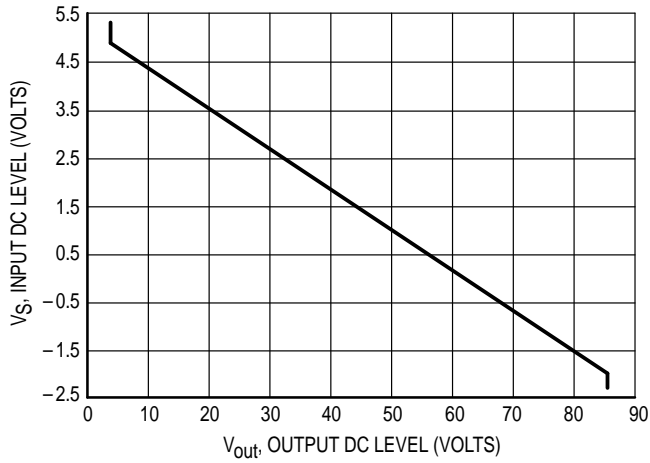
| Characteristic  | Symbol             | Min  | Typ | Max  | Unit |
|---|--------------------|------|-----|------|------|
| Supply Current (With Input Open Circuited) Per Channel        | I <sub>CC</sub>    | 28   | 32  | 36   | mA   |
| Input DC Voltage (With Input Open Circuited)                  | V <sub>inDC</sub>  | 1.2  | 1.5 | 1.8  | V    |
| Input DC Voltage (With Input Open Circuited)                  | V <sub>outDC</sub> | 42   | 45  | 48   | V    |
| Voltage Gain (1) (2)  | A <sub>V</sub>     | 10.8 | 12  | 14.2 | V/V  |
| Transient Response (2)  |                    |      |     |      |      |
| — Rise Time (10% to 90%)                                      | t <sub>r</sub>     | —    | 2.3 | 2.7  | ns   |
| — Overshoot   | V <sub>OS,r</sub>  | —    | 6.0 | 10   | %    |
| — Fall Time (90% to 10%)                                      | t <sub>f</sub>     | —    | 2.3 | 2.7  | ns   |
| — Overshoot   | V <sub>OS,f</sub>  | —    | 6.0 | 10   | %    |
| Operating Supply Current per Channel @ 50 MHz Square Wave (3) | I <sub>CC</sub>    |      |     |      | mA   |
| (V <sub>out</sub> = 40 V <sub>p-p</sub> and 45 V offset)      |                    | —    | 68  | —    |      |
| (V <sub>out</sub> = 50 V <sub>p-p</sub> and 45 V offset)      |                    | —    | 78  | —    |      |
| Linearity Error (V <sub>out</sub> = 5.0 V to +85 V)           | —                  | —    | —   | 5.0  | %    |

(1) A<sub>V</sub> = V<sub>out</sub>/V<sub>S</sub>

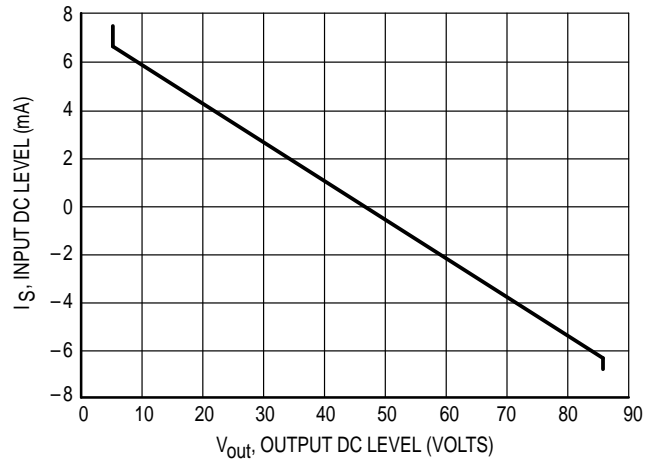
(2) Input Signal is normally a 62.5 kHz square wave of 3.3 V peak-to-peak with 1.5 Vdc offset. Input t<sub>r</sub>, t<sub>f</sub> < 1.0 ns.

(3) Output is not short circuit protected.

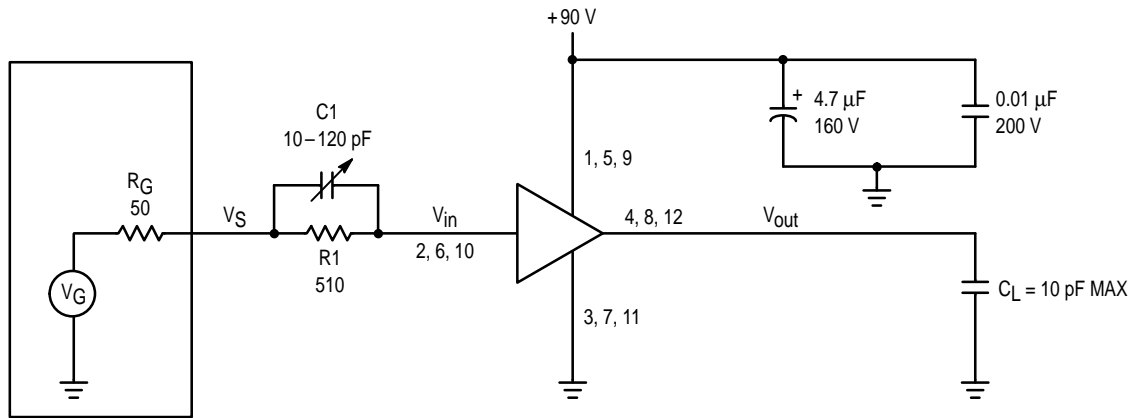
## TYPICAL CHARACTERISTICS



**Figure 1.  $V_S$  versus  $V_{out}$**

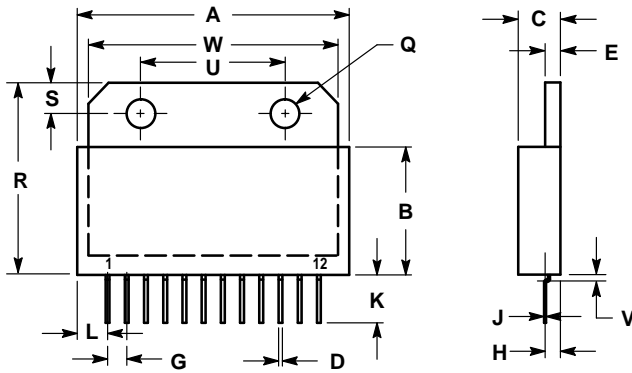


**Figure 2.  $I_S$  versus  $V_{out}$**



**Figure 3. Hybrid Amplifier Test Circuit**

## PACKAGE DIMENSIONS




- NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES |       | MILLIMETERS |       |
|-----|--------|-------|-------------|-------|
|     | MIN    | MAX   | MIN         | MAX   |
| A   | —      | 1.415 | —           | 35.94 |
| B   | —      | 0.665 | —           | 16.89 |
| C   | 0.210  | 0.225 | 5.33        | 5.72  |
| D   | 0.020  | —     | 0.51        | —     |
| E   | 0.070  | 0.085 | 1.78        | 2.16  |
| G   | 0.095  | 0.105 | 2.41        | 2.67  |
| H   | 0.065  | 0.085 | 1.65        | 2.16  |
| J   | 0.010  | —     | 0.25        | —     |
| K   | 0.250  | —     | 6.33        | —     |
| L   | 0.150  | 0.160 | 3.81        | 4.06  |
| Q   | 0.140  | 0.155 | 3.56        | 3.94  |
| R   | 0.995  | 1.015 | 25.27       | 25.78 |
| S   | 0.155  | 0.165 | 3.94        | 4.19  |
| U   | 0.745  | 0.755 | 18.92       | 19.18 |
| V   | —      | 0.025 | —           | 0.64  |
| W   | 1.295  | 1.305 | 32.89       | 33.15 |

- STYLE 1:  
 PIN 1. +VCC  
 2. VIN  
 3. GROUND  
 4. VOUT  
 5. +VCC  
 6. VIN  
 7. GROUND  
 8. VOUT  
 9. +VCC  
 10. VIN  
 11. GROUND  
 12. VOUT

**CASE 455-01  
 ISSUE A**

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