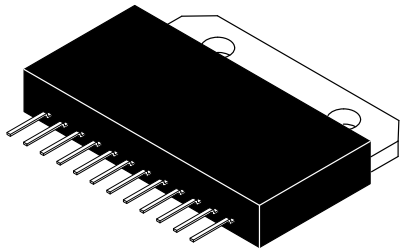
MHW3928

The RF Line
Triple Video Output Hybrid Amplifier

2.3 ns
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 Vp–p Output Swing with 90 V Supply Voltage
- Low Power Consumption
- Excellent Gray–Scale Linearity
- Unconditional Stability
- Gold Metallization System for the Ultimate in Reliability



CASE 455–01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Supply Voltage	V_{CC}	+95	Vdc
Operating Case Temperature Range	T_C	–20 to +100	°C
Storage Temperature Range	T_{stg}	–40 to +100	°C

ELECTRICAL CHARACTERISTICS (T_C = 25°C, V_{CC} = 90 V, C_{LOAD} = 10 pF, 40 V Peak–to–Peak Output Swing with 45 Vdc Offset; R_1 = 510 Ω, C_1 = 39 pF Typ)

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

(1) $A_V = V_{out}/V_S$
(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_r, t_f < 1.0 ns.
(3) Output is not short circuit protected.

TYPICAL CHARACTERISTICS

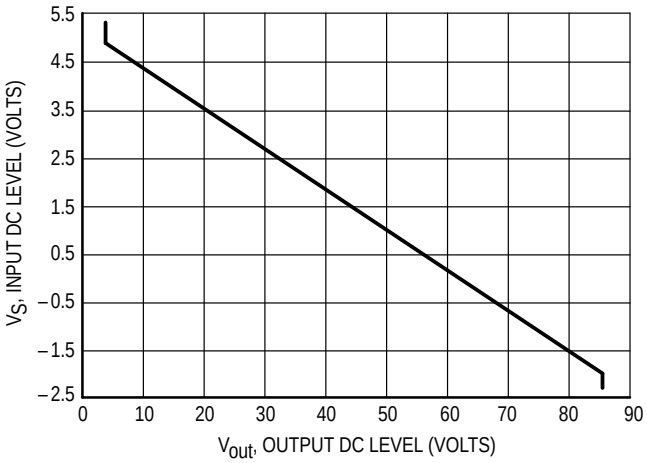


Figure 1. V_S versus V_{out}

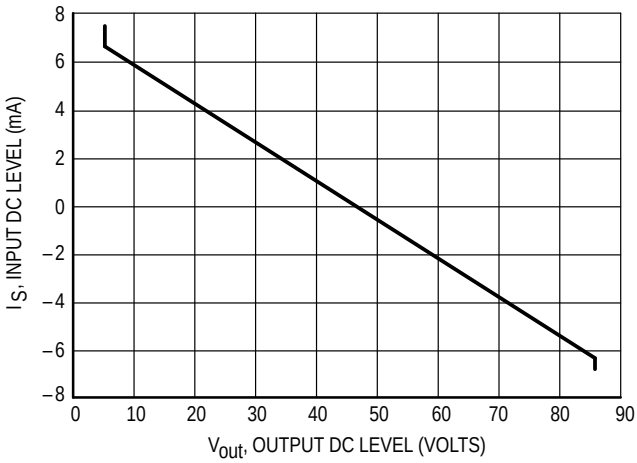


Figure 2. I_S versus V_{out}

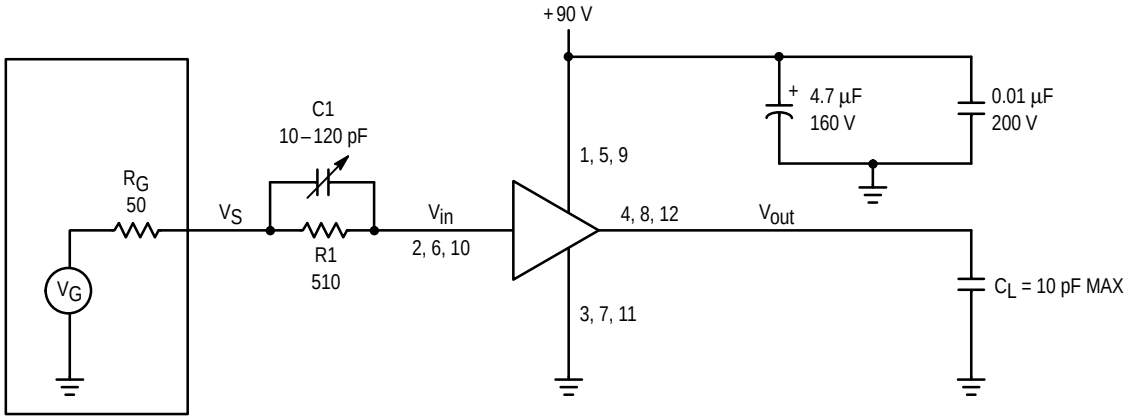
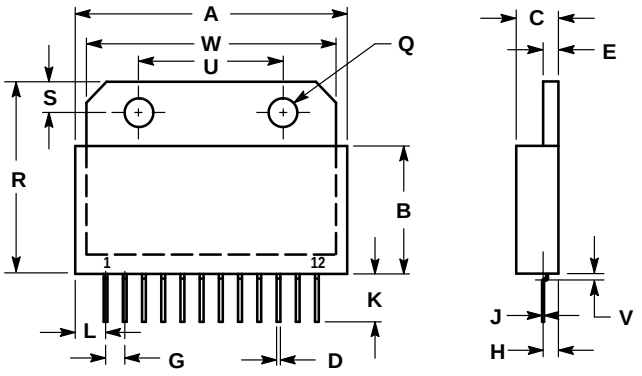


Figure 3. Hybrid Amplifier Test Circuit

PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	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

How to reach us:
USA / EUROPE / Locations Not Listed: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036. 1–800–441–2447 or 602–303–5454

MFAX: RMFAX0@email.sps.mot.com – TOUCHTONE 602–244–6609
INTERNET: http://Design–NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi–SPD–JLDC, 6F Seibu–Butsuryu–Center, 3–14–2 Tatsumi Koto–Ku, Tokyo 135, Japan. 03–81–3521–8315

ASIA / PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852–26629298