# *GENLINX*™ GS9007 Quad Serial Digital Cable Driver

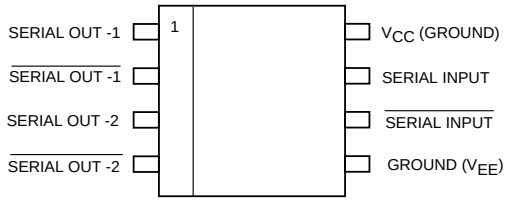
DATA SHEET

## FEATURES

- **two output pairs (four outputs total) meeting SMPTE 259M**
- **nominal 550 ps rise and fall times**
- **accepts SMPTE and standard ECL input levels**
- **operates from a single +5 or -5 volt supply**
- **on-chip DC restoration for low jitter**
- **250 mW power dissipation**
- **interfaces with *GENLINX*™ GS9002, GS9004A, GS9005A and GS9015A**

## PIN CONNECTIONS

TOP VIEW




## ORDERING INFORMATION

| Part Number | Package Type | Temperature Range |
|---|---|---|
| GS9007 - CKA | 8 Pin SOIC | 0° to 70°C |

## DEVICE DESCRIPTION

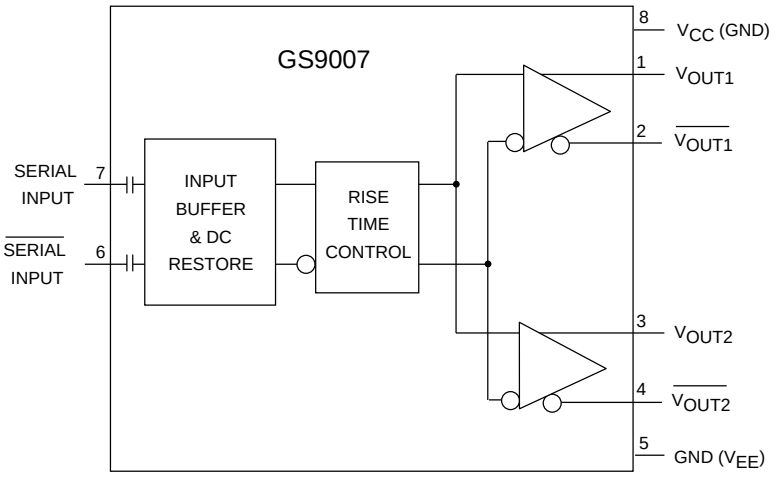
The ***GENLINX*™** GS9007 is a bipolar integrated circuit designed to drive four 75 Ω co-axial cables with SMPTE level serial digital video signals at data rates exceeding 400 Mb/s. It directly interfaces with other ***GENLINX*™** devices and can also be used as a general purpose high speed cable driver.

The differential inputs are AC-coupled and internally DC-restored which allows correct passage of pathological check codes associated with the serial digital standards. Even though the inputs are AC coupled, static protection diodes at each input restrict the DC differential so that if the driving source uses the opposite polarity power supply, external DC blocking capacitors must be used.

The GS9007 is packaged in an 8 pin SOIC, and operates from a single +5 or -5 volt supply consuming typically only 250 mW of power.

## APPLICATIONS

$4f_{SC}$, 4:2:2 and 360 Mb/s Serial Digital Interfaces.

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**FUNCTIONAL BLOCK DIAGRAM**

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GENNUM CORPORATION P.O. Box 489, Stn A, Burlington, Ontario, Canada L7R 3Y3 tel. (905) 632-2996 fax: (905) 632-2055
Japan Branch: A-302, Miyamae Village, 2-10-42 Miyamae, Suginami-ku, Tokyo 168, Japan tel. (03) 3247-8838 fax (03) 3247-8839

## GS9007 CABLE DRIVER - DC ELECTRICAL CHARACTERISTICS

$V_S$ = 5 V, $T_A$= 0 to 70°C, $R_L$ = 150Ω to GND and 143Ω AC coupled unless otherwise shown.

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS | NOTES |
|---|---|---|---|---|---|---|---|
| Supply Voltage | $V_S$ | Operating Range | 4.5 | 5.0 | 5.5 | V | |
| Power Consumption | $P_D$ | 4x150Ω Loads DC | - | 250 | 290 | mW | |
| Supply Current | $I_{S1}$ | 1% Accuracy, $T_A$= 25°C | - | 105 | 110 | mA | |
| | $I_{S2}$ | DC No Loads, $T_A$= 25°C | - | 17.2 | 22 | mA | |

## GS9007 CABLE DRIVER - AC ELECTRICAL CHARACTERISTICS

$V_S$ = 5 V, $T_A$= 0 to 70°C, $R_L$ = 150Ω to GND and 143Ω AC coupled unless otherwise shown.

| PARAMETER | | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS | NOTES |
|---|---|---|---|---|---|---|---|---|
| SERIAL DIGITAL INPUTS | Signal Swing | $V_{IN}$ | | 700 | 800 | 1000 | mVp-p | |
| | Rise/Fall Times | $t_R$, $t_F$ | | - | - | 750 | ps | measured at 20% and 80% |
| SERIAL DIGITAL OUTPUTS | Rise/Fall Times | $t_R$, $t_F$ | | 400 | 550 | 800 | ps | measured at 20% and 80% |
| | Jitter | $t_J$ | at 270 Mb/s | - | - | ±25 | ps | |
| | Propagation Delay | $t_P$ | | - | 1 | - | ns | |
| | Output Overshoot | | $t_R$ = $t_F$ = 600 ps | - | 0 | - | % | see Figure 4 |
| | Signal Swing | $V_{OUT}$ | Across 75 Ω Load | 720 | 800 | 880 | mVp-p | |

## INPUT / OUTPUT CIRCUITS

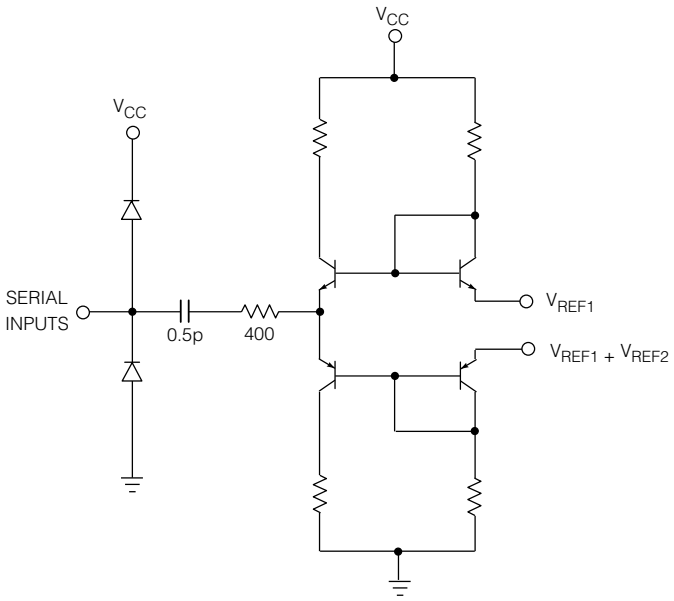


Fig. 1 Input Circuit (Pins 6 and 7)

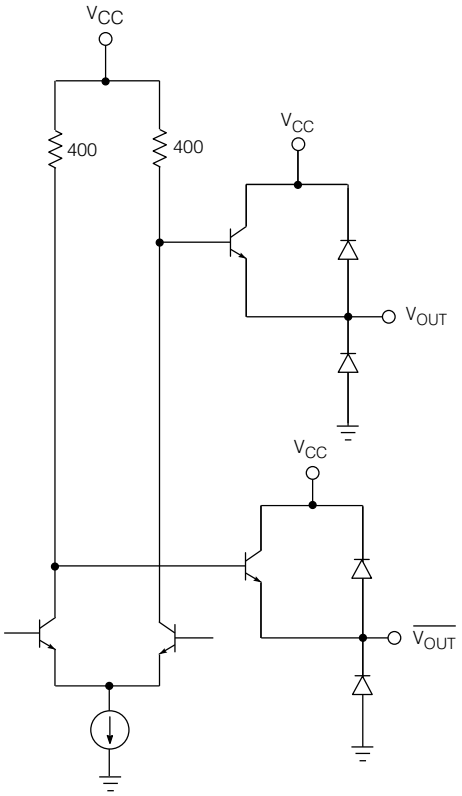


Fig. 2 Output Circuit (Pins 1, 2 and 3, 4)

## ABSOLUTE MAXIMUM RATINGS

| PARAMETER | VALUES/UNITS |
|---|---|
| Supply Voltage ($V_S$) | 5.5 V |
| Input Voltage Range (any input) | $V_S$ - 0.5 V |
| Power Dissipation | 300 mW |
| Operating Temperature Range | 0 °C ≤ $T_A$ ≤ 70 °C |
| Storage Temperature Range | -65 °C ≤ $T_S$ ≤ 150 °C |
| Lead Temperature (Soldering, 10 sec.) | 260 °C |

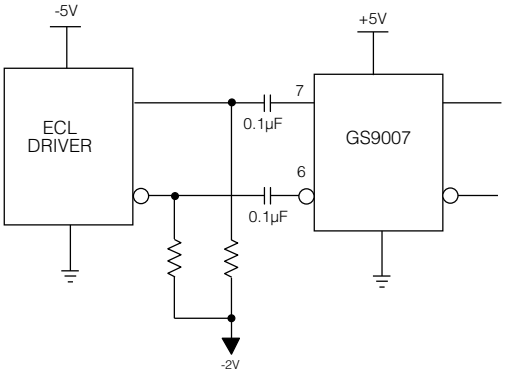


Fig. 3 Split Supply Interfacing

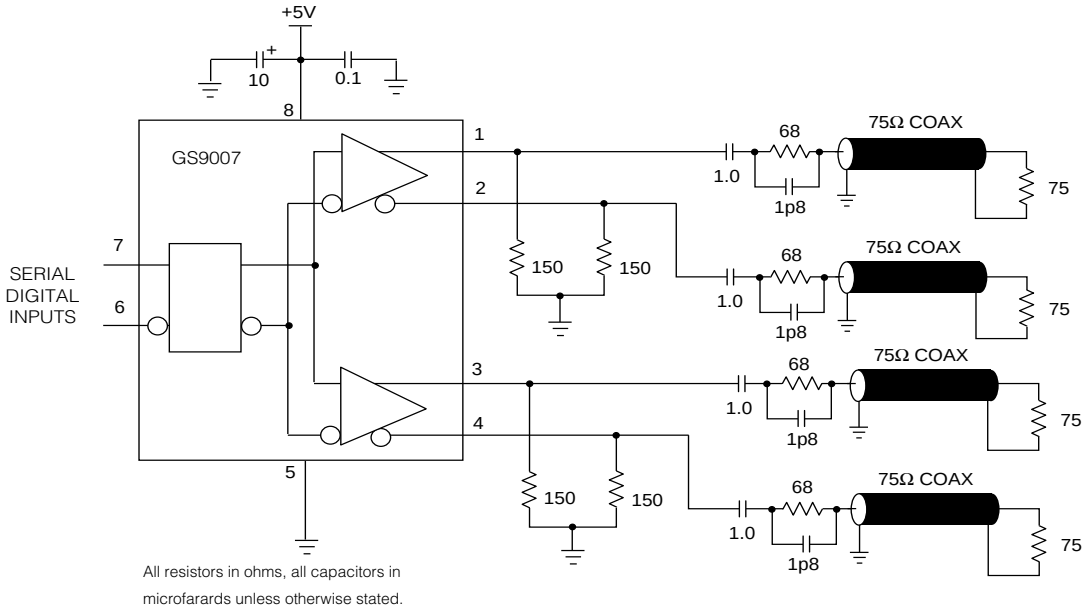


Fig. 4 Typical Termination Configuration

REVISION NOTES
Changes to Electrical Characteristics.

**CAUTION**
ELECTROSTATIC
SENSITIVE DEVICES
DO NOT OPEN PACKAGES OR HANDLE
EXCEPT AT A STATIC-FREE WORKSTATION

DOCUMENT
IDENTIFICATION

PRODUCT PROPOSAL
This data has been compiled for market investigation purposes only, and does not constitute an offer for sale.

ADVANCE INFORMATION NOTE
This product is in development phase and specifications are subject to change without notice. Gennum reserves the right to remove the product at any time. Listing the product does not constitute an offer for sale.

PRELIMINARY DATA SHEET
The product is in a preproduction phase and specifications are subject to change without notice.

DATA SHEET
The product is in production. Gennum reserves the right to make changes at any time to improve reliability, function or design, in order to provide the best product possible.