8T13 B,F,W

DESCRIPTION

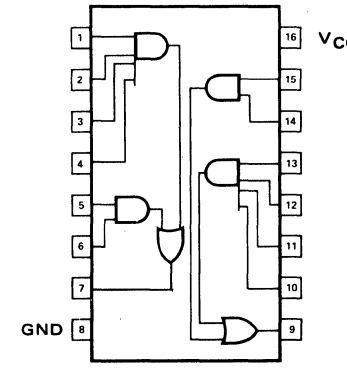
The 8T13 is a monolithic Dual Line Driver designed to drive 50 ohm or 75 ohm coaxial transmission lines. TTL multiple emitter inputs allow this line driver to interface with standard TTL or DTL systems. The outputs are designed to drive long lengths of coaxial cable, strip line, or twisted pair transmission lines with impedances of 50Ω to 500Ω.

KEY DESIGN BENEFITS

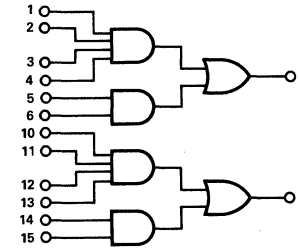
- High-Power Drive Capability:
  Specified at −75mA source current rating at 2.4 volts.
- Party-Line Operation:
  Emitter-follower outputs enable two or more drivers to drive the same line. This permits multiple time-shared terminal connections since these drivers have no effect upon the transmission line unless activated.
- Input gating structure allows employment of the "OR" as well as the "AND" function.
- High Speed: $t_{on} = t_{off} = 20ns$ (max).
- Input Clamp Diodes: Protects inputs from line ringing.
- Single 5 Volt power supply.
- Short Circuit Protection:
  Incorporates a latch-back short circuit protection feature which protects the device by limiting the current it may source when operating under conditions of zero load resistance.

PIN CONFIGURATION

B,F,W PACKAGE



LOGIC DIAGRAM



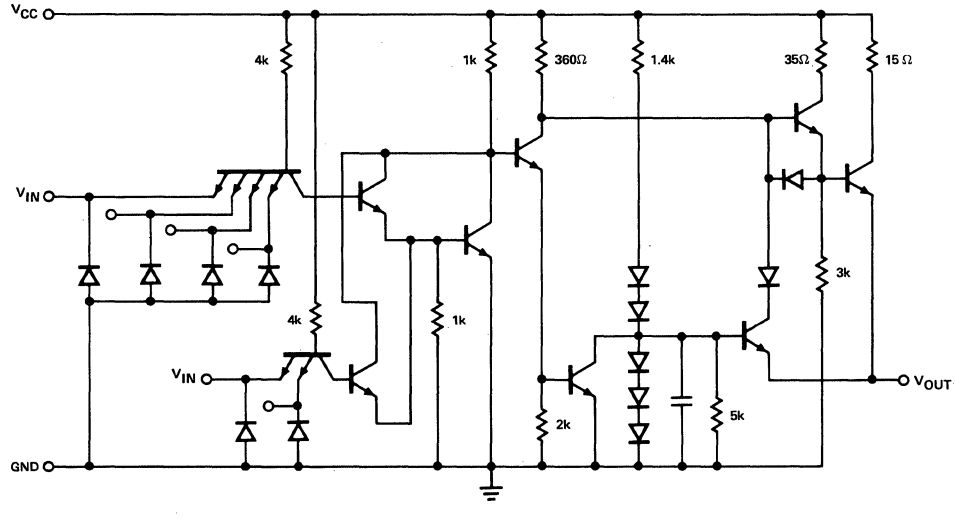
V_{CC} = (16)
GND = (8)
( ) = Denotes Pin Numbers

$T_A = 25°$ C and $V_{CC} = 5.0V$

PARAMETER	LIMITS			UNIT
	MIN	TYP	MAX	
t_{on}, Turn-On Delay		32	20	ns
t_{off}, Turn-Off Delay		22	20	ns

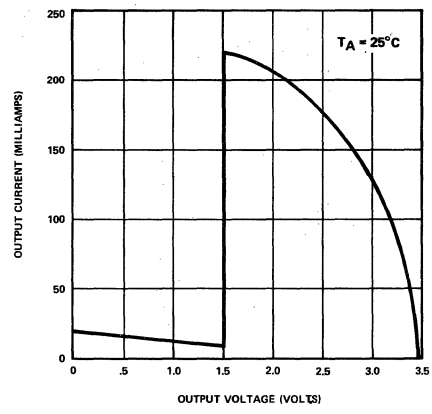
NOTES:
1. $R_L = 37\Omega$ to ground.
2. Load is 37Ω in parallel with 1000pF.
3. Reference AC Test Circuit and Pulse Requirements.

SCHEMATIC DIAGRAM

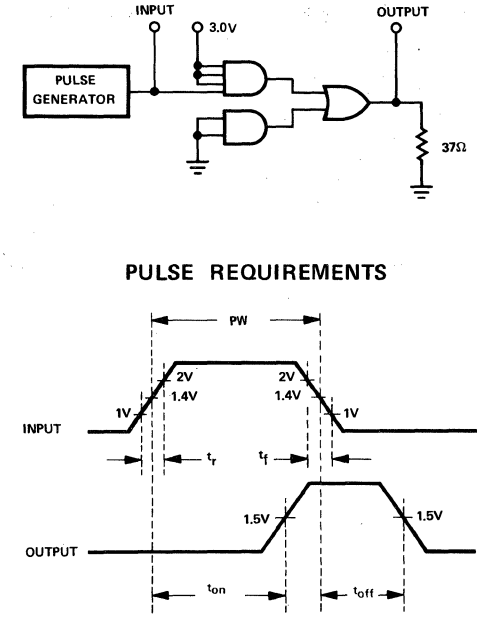


INTERFACE

TYPICAL OUTPUT CURRENT VERSUS Ω OUTPUT VOLTAGE CURVE



AC TEST FIGURE AND WAVEFORMS



INPUT PULSE:
Amplitude = 3.0V
PW = 40ns (50% Duty Cycle)
$t_r = t_f \leq 5$ns (10% and 90% measurement points)

TYPICAL APPLICATIONS

A typical application for the 8T13 is shown in Figure 1. If only one line driver is to be used for each transmission line, the line may be terminated with 50 ohms on the receiving end only. See Figure 2.

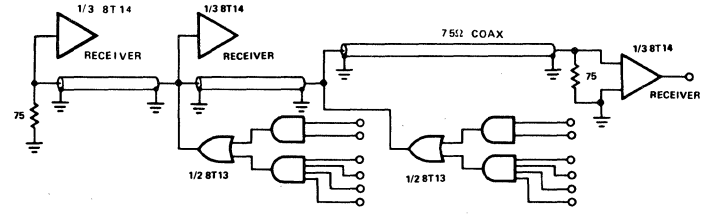


FIGURE 1

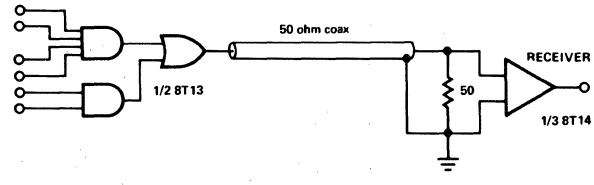


FIGURE 2