

DESCRIPTION

The DS3611 series of dual peripheral drivers was designed for applications where higher breakdown voltage is required than that provided by the 75451 series.

The pin out for the 3611 series is identical to those of the 75451 through 75454. The 3611 series feature high voltage outputs (80V breakdown in the "off" state) as well as high current (300mA/driver in the on state).

FEATURES

- High voltage PNP inputs
- PMOS/CMOS TTL or DTL compatible inputs
- Low input currents
- High voltage outputs 80V (off)
- High current—300mA/driver (on)
- Input clamping diodes
- Choice of logic function
- DS3611/12/13/14, DS1611/12/13/14
- Military qualifications pending

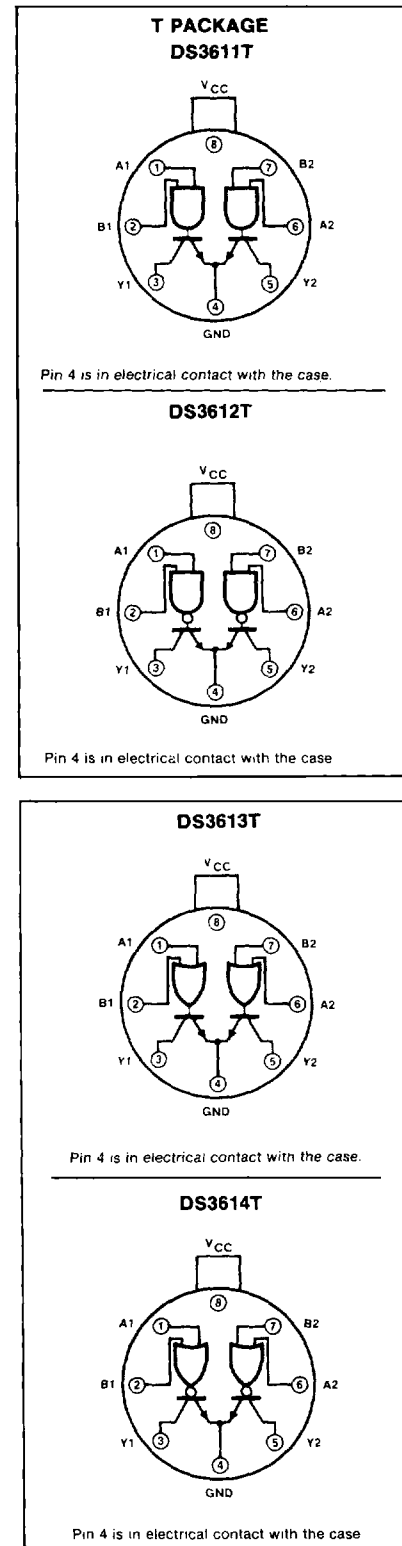
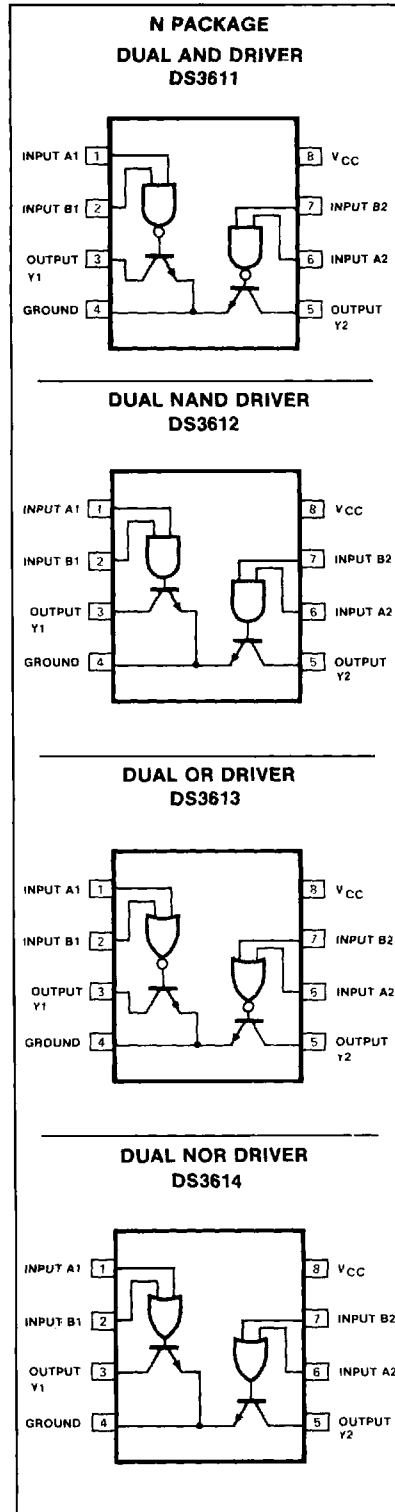
NOTE

- Special Signetics features

APPLICATIONS

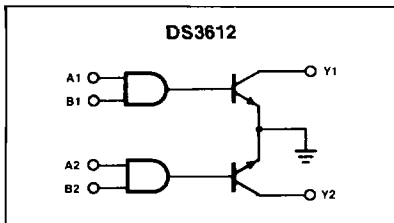
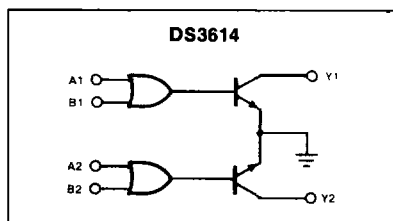
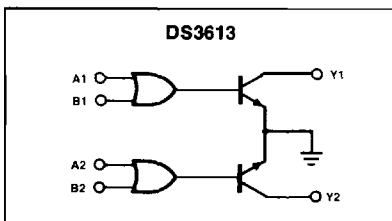
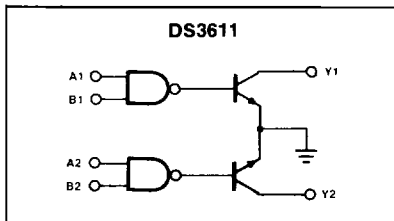
- Power drivers
- Relay drivers
- Lamp drivers
- Mos drivers
- Memory drivers

PIN CONFIGURATIONS

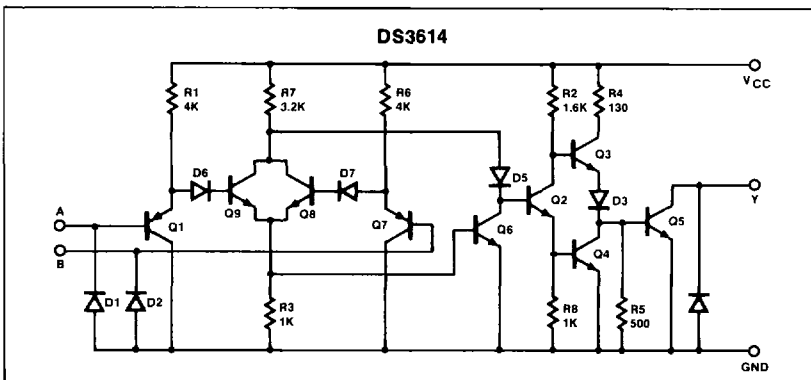
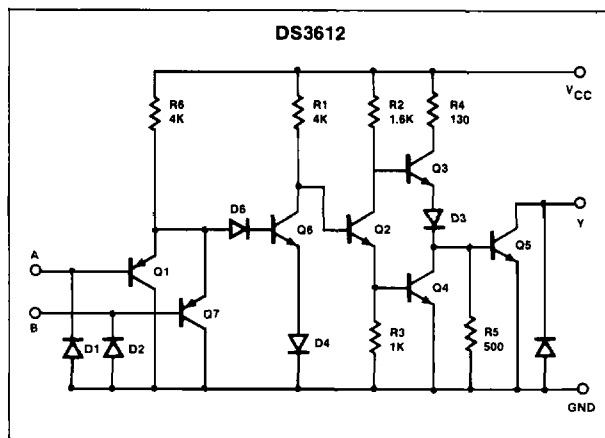
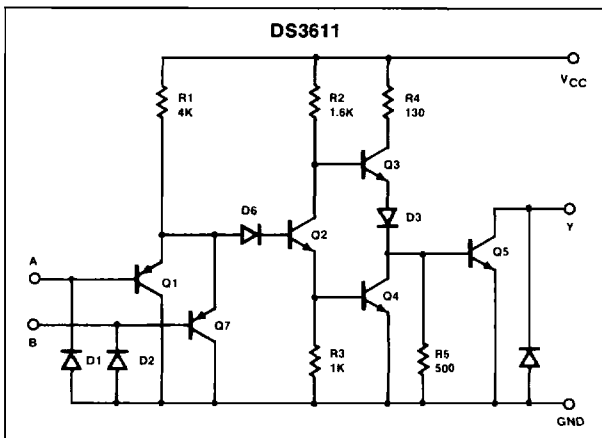
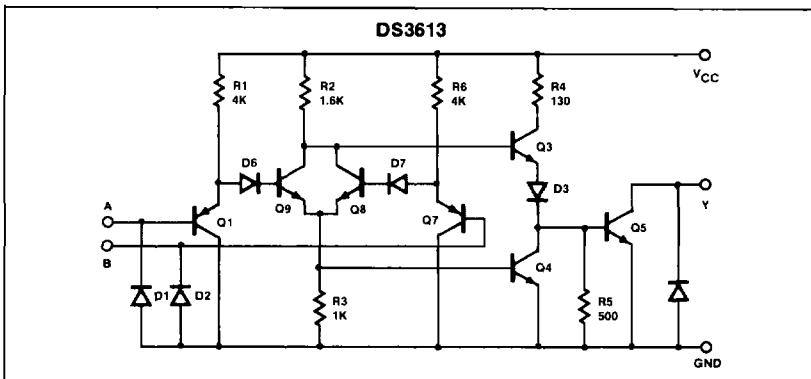


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BLOCK DIAGRAMS



EQUIVALENT SCHEMATICS



NOTE
One circuit only shown

ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNIT
V _{CC} Supply voltage	7	V
continuous		
momentary (1 second)	15	V
V _{IN} Input voltage	30	V
V _{OUT} Output voltage (off state)	80	V
I _{OUT} Output current (continuous)	300	mA
P _D Power dissipation	750	mW
T _A Operating temperature range	0 to 70	°C
T _{STG} Storage temperature range	-65 to +150	°C
Lead temperature (soldering, 10 sec)	300	°C

NOTE

*The maximum junction temperature is 150°C. Derate at 162°C/Watt above 25°C.

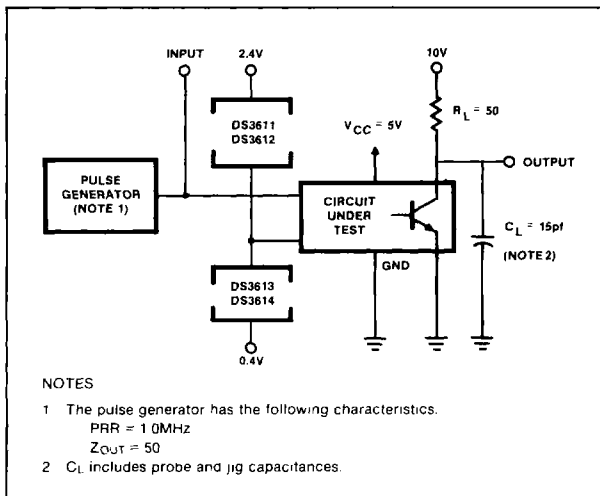
DC ELECTRICAL CHARACTERISTICS T_A = 25°C, V_{CC} = 5V, 0°C < T_A < 70°C unless otherwise specified.

PARAMETER	TEST CONDITIONS	DS3611 SERIES			UNIT
		Min	Typ	Max	
V _{IH} Logical "1" input voltage	V _{CC} = 4.75V	2.0			V
V _{IL} Logical "0" input voltage	V _{CC} = 4.75V			0.8	V
V _I Input clamp voltage	V _{CC} = 4.75V, I _I = -12mA		-1.2	-1.5	V
I _{IH} Logical "1" input current	V _{CC} = 5.25V, V _{IN} = 2.4V			10	μA
	V _{IN} = 5.5V		<1	10	μA
	V _{IN} = 30V			100	μA
I _{IL} Logical "0" input current	V _{CC} = 5.25V, V _{IN} = 0.4V		-50	-100	μA
V _{OL} Output low voltage	V _{IN} = 0.8V (DS3611/3613) V _{IN} = 2.0V (DS3612/3614) V _{CC} = 4.75V, I _{OL} = 100mA I _{OL} = 300mA		0.20 0.45	0.40 0.70	V V
V _{OH} Output breakdown voltage	V _{CC} = 5.25V, V _{IN} = 2.0V (DS3611/3613) V _{IN} = 0.8V (DS3612/3614) I _{OH} = 100μA	80			V
I _{OH} Output leakage current	V _{IN} = 2.0V (DS3611/3613) V _{IN} = 0.8V (DS3612/3614) V _{OUT} = 80V, V _{CC} = 5.25V V _{CC} = open			100 100	μA μA
I _{CCH} Supply current with outputs high	V _{CC} = 5.25V: DS3611 - V _{IN} = 5V DS3612 - V _{IN} = 0V DS3613 - V _{IN} = 5V DS3614 - V _{IN} = 0V		5 8 8 10	11 14 14 17	mA mA mA mA
I _{CCL} Supply current with outputs low	V _{CC} = 5.25V: DS3611 - V _{IN} = 0V DS3612 - V _{IN} = 5V DS3613 - V _{IN} = 0V DS3614 - V _{IN} = 5V		44 47 44 49	69 71 73 79	mA mA mA mA

AC ELECTRICAL CHARACTERISTICS $V_{CC} = 5V$, $T_A = 25^\circ C$ unless otherwise specified.

PARAMETER	TEST CONDITIONS	DS3611 SERIES			UNIT
		Min	Typ	Max	
T _{PLH} Propagation delay time, low-to-high output	$I_O \approx 200mA$ $C_L = 15pf$ $R_L = 50\Omega$ (See test figure) DS3611 DS3612 DS3613 DS3614				
			130	ns	
			110	ns	
			125	ns	
			220	ns	
T _{PHL} Propagation delay time, high-to-low output	DS3611 DS3612 DS3613 DS3614		125	ns	
			110	ns	
			125	ns	
			150	ns	

TYPICAL CIRCUIT



TIMING WAVEFORMS

