

UDN-2985A AND UDN-2986A 8-CHANNEL SOURCE DRIVERS

FEATURES

- TTL, DTL, PMOS, or CMOS Compatible Inputs
- 250 mA Output Source Current Capability
- Output Transient-Suppression Diodes
- 30 V Minimum Output Breakdown Voltage
- Low Output-Saturation Voltage

Recommended for applications requiring separate logic and load grounds, load supply voltages to 30 V, and load currents to 250 mA, the UDN-2985A and UDN-2986A source drivers are used as interface between standard low-power digital logic and LEDs, relays and solenoids. The outputs feature saturated transistors for low collector-emitter saturation voltages.

The UDN-2985A driver is for use with 5 V logic systems—TTL, Schottky TTL, DTL, and CMOS. The UDN-2986A is intended for MOS interface (PMOS and CMOS) operating from supply voltages of 6 to 16 V. Both devices have a minimum output breakdown rating of 30 V with a minimum output sustaining voltage of 15 V. In all cases, the output is switched ON by an active high input level.

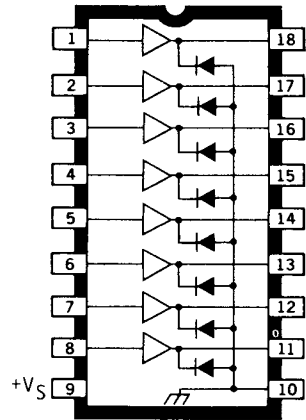
Under normal operating conditions, these devices can source up to 120 mA for each of the eight outputs at an ambient temperature of 75°C and a supply voltage of 15 V. Both devices incorporate input current-limiting resistors and output transient suppression diodes.

The UDN-2985A and UDN-2986A source drivers are supplied in 18-lead dual in-line packages. All inputs are on one side of the package, output pins on the other, to simplify printed wiring board layout.

ABSOLUTE MAXIMUM RATINGS at $T_A = 25^\circ\text{C}$

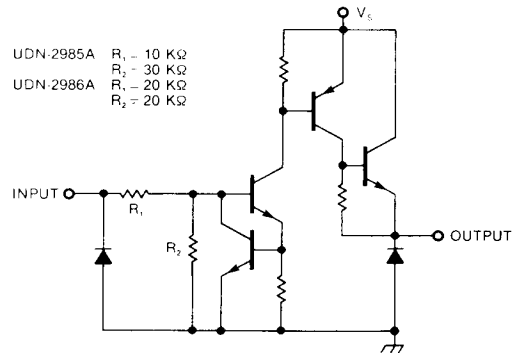
Driver Supply Voltage, V_S	30 V
Continuous Output Current, I_{OUT}	—250 mA
Input Voltage, V_{IN}	20 V
Package Power Dissipation, P_D	2.2 W*
Operating Temperature Range, T_A	—20°C to +85°C
Storage Temperature Range, T_S	—55°C to +150°C

*Derate at the rate of 18 mW/°C above $T_A = 25^\circ\text{C}$



Dwg. No. A-10, 243

PARTIAL SCHEMATIC DIAGRAM 1 of 8 Drivers



Dwg. No. DS-1013

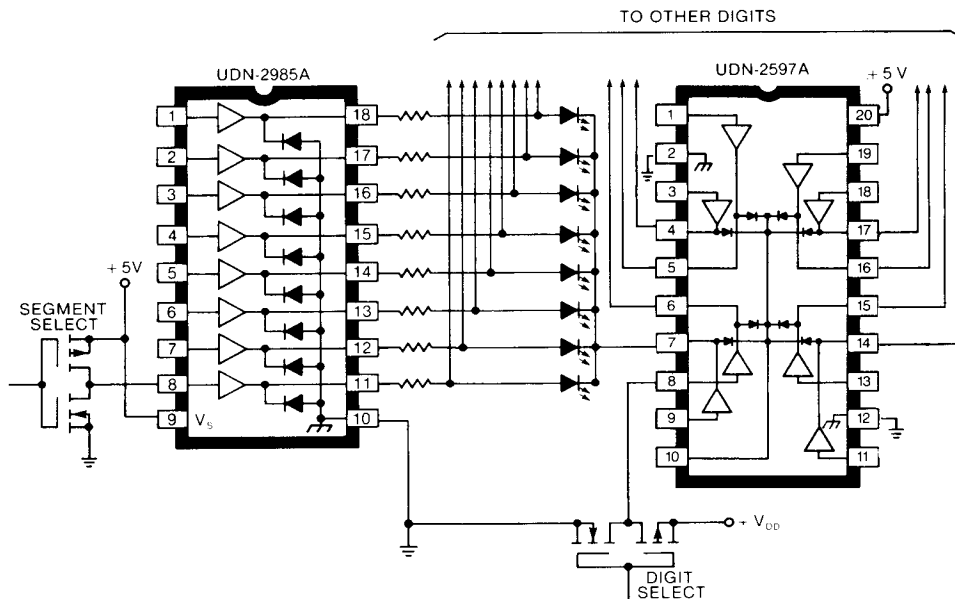
**UDN-2985A AND UDN-2986A
8-CHANNEL SOURCE DRIVERS**

ELECTRICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$, $V_S = 30\text{V}$ (unless otherwise noted)

Characteristic	Symbol	Applicable Devices	Test Conditions	Limits			
				Min.	Typ.	Max.	Units
Output Leakage Current	I_{CEX}	Both	$V_{IN} = 0.4\text{V}$, $V_{OUT} = 0\text{V}$	—	< -1.0	-100	μA
Output Sustaining Voltage	$V_{CE(SUS)}$	Both	$I_{OUT} = -120\text{mA}$, $L = 3\text{mH}$	15	—	—	V
Output Saturation Voltage	$V_{CE(SAT)}$	UDN-2985A	$V_{IN} = 2.4\text{V}$, $I_{OUT} = -60\text{mA}$	—	0.8	1.1	V
			$V_{IN} = 2.4\text{V}$, $I_{OUT} = -120\text{mA}$	—	0.9	1.2	V
		UDN-2986A	$V_{IN} = 4.0\text{V}$, $I_{OUT} = -60\text{mA}$	—	0.8	1.1	V
			$V_{IN} = 4.0\text{V}$, $I_{OUT} = -120\text{mA}$	—	0.9	1.2	V
Input Current	$I_{IN(ON)}$	UDN-2985A	$V_{IN} = 2.4\text{V}$	—	90	225	μA
			$V_{IN} = 5.0\text{V}$	—	280	650	μA
		UDN-2986A	$V_{IN} = 4.0\text{V}$	—	90	250	μA
			$V_{IN} = 15\text{V}$	—	450	1150	μA
	$I_{IN(OFF)}$	Both	$V_{IN} = 0.4\text{V}$	—	10	15	μA
Supply Current (outputs open)	I_S	Both	$V_S = 30\text{V}$, $V_{IN} = 2.4\text{V}$	—	10	15	mA
Clamp Diode Leakage Current	I_R	Both	$V_R = 30\text{V}$, $T_A = 70^\circ\text{C}$	—	< 1.0	50	μA
Clamp Diode Forward Voltage	V_F	Both	$I_F = 120\text{mA}$	—	1.1	2.0	V
Turn-On Delay	t_{ON}	Both		—	0.5	1.0	μs
Turn-Off Delay	t_{OFF}	Both		—	5.0	10	μs

NOTE: Negative current is defined as coming out of (sourcing) the specified device pin.

COMMON-CATHODE LED DRIVER



Dwg. No. DS-1014A