

## SERIES UDN-2980A HIGH-VOLTAGE, HIGH-CURRENT SOURCE DRIVERS

### FEATURES

- TTL, DTL, PMOS, or CMOS Compatible Inputs
- 500 mA Output Source Current Capability
- Transient-Protected Outputs
- Output Breakdown Voltage to 80 V

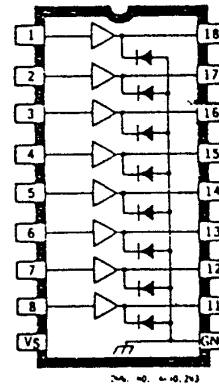
**R**ECOMMENDED for applications requiring separate logic and load grounds, load supply voltage to +80 V, and load currents to 500 mA, Series UDN-2980A source drivers are used as interfaces between standard low-power digital logic and relays, solenoids, stepping motors, and LEDs.

Under normal operating conditions, these devices will sustain 120 mA continuously for each of the eight outputs at an ambient temperature of +50°C and a supply of +15 V. All devices in this series incorporate input current limiting resistors and output transient suppression diodes.

Type UDN-2981A and UDN-2983A drivers are for use with +5 V logic systems — TTL, Schottky TTL, DTL, and 5 V CMOS. Type UDN-2982A and UDN-2984A drivers are intended for MOS interface (PMOS and CMOS) operating from supply voltages

of 6 to 16 V. Types UDN-2981A and UDN-2982A will sustain a maximum output OFF voltage of +50 V, while Types UDN-2983A and UDN-2984A will sustain an output voltage of +80 V. In all cases, the output is switched ON by an active high input level.

Series UDN-2980A high-voltage, high-current source drivers are supplied in 18-lead dual in-line packages. On special order, hermetically-sealed versions of these devices (with reduced package power dissipation capability) can also be furnished.



### ABSOLUTE MAXIMUM RATINGS at 25°C Free-Air Temperature

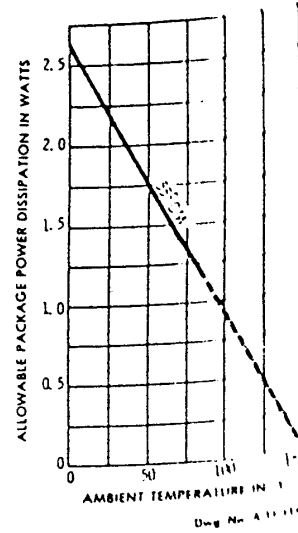
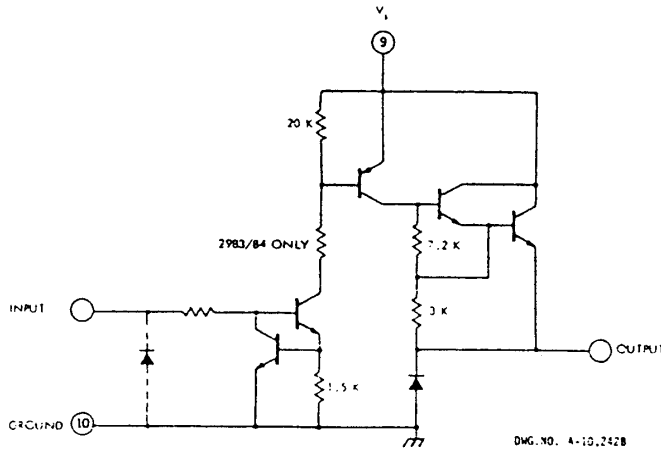
Output Voltage Range, $V_{ce}$ (UDN-2981A & UDN-2982A)	+ 5 V to + 50 V
(UDN-2983A & UDN-2984A)	+ 35 V to + 80 V
Input Voltage, $V_{in}$ (UDN-2981A & UDN-2983A)	+ 15 V
(UDN-2982A & UDN-2984A)	+ 30 V
Output Current, $I_{out}$	— 500 mA
Power Dissipation, $P_D$ (any one driver)	1.1 W
(total package)	2.2 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 + 25°C.

SERIES UDN-2980A  
HIGH-VOLTAGE, HIGH-CURRENT SOURCE DRIVERS

ONE OF EIGHT DRIVERS

POWER DISSIPATION  
AS A FUNCTION OF AMBIENT TEMPERATURE



ELECTRICAL CHARACTERISTICS at  $T_A = +25^\circ\text{C}$  (unless otherwise specified)

Characteristic	Symbol	Applicable Devices	Test Conditions	Test Fig.	Limit		Units
					Min.	Typ.	
Output Leakage Current	$I_{CEX}$	UDN-2981:82A	$V_{IN} = 0.4 \text{ V}^*$ , $V_S = 50 \text{ V}$ , $T_A = +70^\circ\text{C}$	1	—	—	$\mu\text{A}$
		UDN-2983:84A	$V_{IN} = 0.4 \text{ V}^*$ , $V_S = 80 \text{ V}$ , $T_A = +70^\circ\text{C}$	1	—	—	$\mu\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	All	$V_{IN} = 2.4 \text{ V}$ , $I_{OUT} = -100 \text{ mA}$	2	—	1.6	V
			$V_{IN} = 2.4 \text{ V}$ , $I_{OUT} = -225 \text{ mA}$	2	—	1.7	V
			$V_{IN} = 2.4 \text{ V}$ , $I_{OUT} = -350 \text{ mA}$	2	—	1.8	V
Input Current	$I_{IN(OH)}$	UDN-2981:83A	$V_{IN} = 2.4 \text{ V}$	3	—	140	$\mu\text{A}$
			$V_{IN} = 3.85 \text{ V}$	3	—	110	$\mu\text{A}$
		UDN-2982:84A	$V_{IN} = 2.4 \text{ V}$	3	—	140	$\mu\text{A}$
			$V_{IN} = 12 \text{ V}$	3	—	1.75	mA
Output Source Current	$I_{OUT}$	UDN-2981:83A	$V_{IN} = 2.4 \text{ V}$ , $V_{CE} = 2.0 \text{ V}$	2	-350	—	mA
		UDN-2982:84A	$V_{IN} = 2.4 \text{ V}$ , $V_{CE} = 2.0 \text{ V}$	2	-350	—	mA
Supply Current (Outputs Open)	$I_S$	UDN-2981:82A	$V_{IN} = 2.4 \text{ V}^*$ , $V_S = 50 \text{ V}$	4	—	—	mA
		UDN-2983:84A	$V_{IN} = 2.4 \text{ V}^*$ , $V_S = 80 \text{ V}$	4	—	—	mA
Clamp Diode Leakage Current	$I_R$	UDN-2981:82A	$V_R = 50 \text{ V}$ , $V_{IN} = 0.4 \text{ V}^*$	5	—	—	$\mu\text{A}$
		UDN-2983:84A	$V_R = 80 \text{ V}$ , $V_{IN} = 0.4 \text{ V}^*$	5	—	—	$\mu\text{A}$
Clamp Diode Forward Voltage	$V_F$	All	$I_F = 350 \text{ mA}$	6	—	1.5	V
Turn-On Delay	$t_{ON}$	All	$0.5 E_{IN}$ to $0.5 E_{OUT}$ , $R_L = 100\Omega$ , $V_S = 35 \text{ V}$	—	—	1.0	$\mu\text{s}$
Turn-Off Delay	$t_{OFF}$	All	$0.5 E_{IN}$ to $0.5 E_{OUT}$ , $R_L = 100\Omega$ , $V_C = 35 \text{ V}$	—	—	5.0	$\mu\text{s}$

\*All inputs Simultaneously