

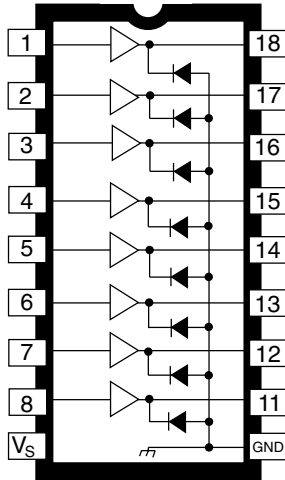
## 8-CHANNEL SOURCE DRIVER

Recommended for applications requiring separate logic and load grounds, load supply voltages to 30 V, and load currents to 250 mA, the UDN2985A source driver is used as an interface between standard low-power digital logic and LEDs, relays, and solenoids. The outputs feature saturated transistors for low collector-emitter saturation voltages.

The UDN2985A driver is for use with 5 V logic systems: TTL, Schottky TTL, DTL, and CMOS. This device has a minimum output breakdown rating of 30 V with a minimum output sustaining voltage of 15 V. The output is switched on by an active-high input level.

Under normal operating conditions, this device 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. It incorporates input current-limiting resistors and output transient-suppression diodes.

The UDN2985A source driver is supplied in an 18-pin dual in-line package. All inputs are on one side of the package, output pins on the other, to simplify printed wiring board layout.



Dwg. No. A-10,243

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

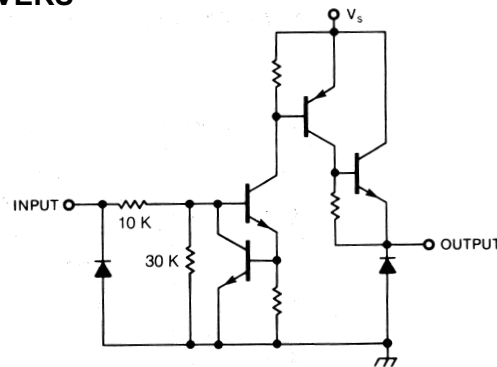
Driver Supply Voltage, $V_S$ .....	30 V
Continuous Output Current, $I_{OUT}$ .....	-250 mA
Input Voltage, $V_{IN}$ .....	20 V
Package Power Dissipation, $P_D$ .....	2.2 W*
Operating Temperature Range, $T_A$ .....	$-20^\circ\text{C}$ to $+85^\circ\text{C}$
Storage Temperature Range, $T_S$ .....	$-55^\circ\text{C}$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

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

### FEATURES

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

### PARTIAL SCHEMATIC DIAGRAM 1 of 8 DRIVERS



Dwg. No. DS-1013

Always order by complete part number: **UDN2985A**.

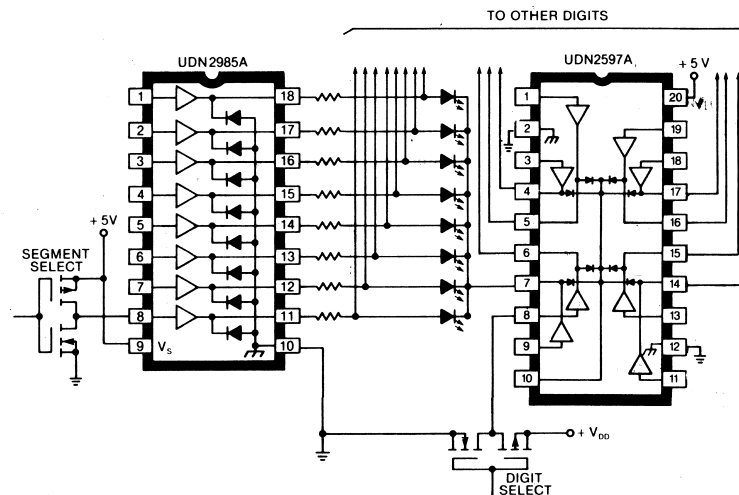
# 2985 8-CHANNEL SOURCE DRIVER

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

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

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

## COMMON-CATHODE LED DRIVER



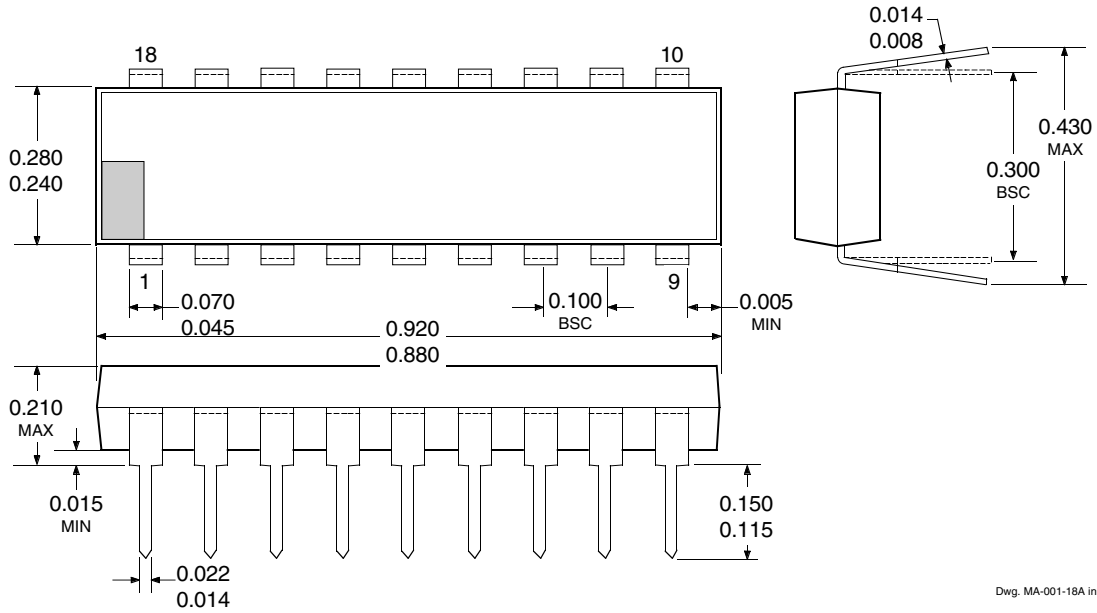
Dwg. No. DS-1014



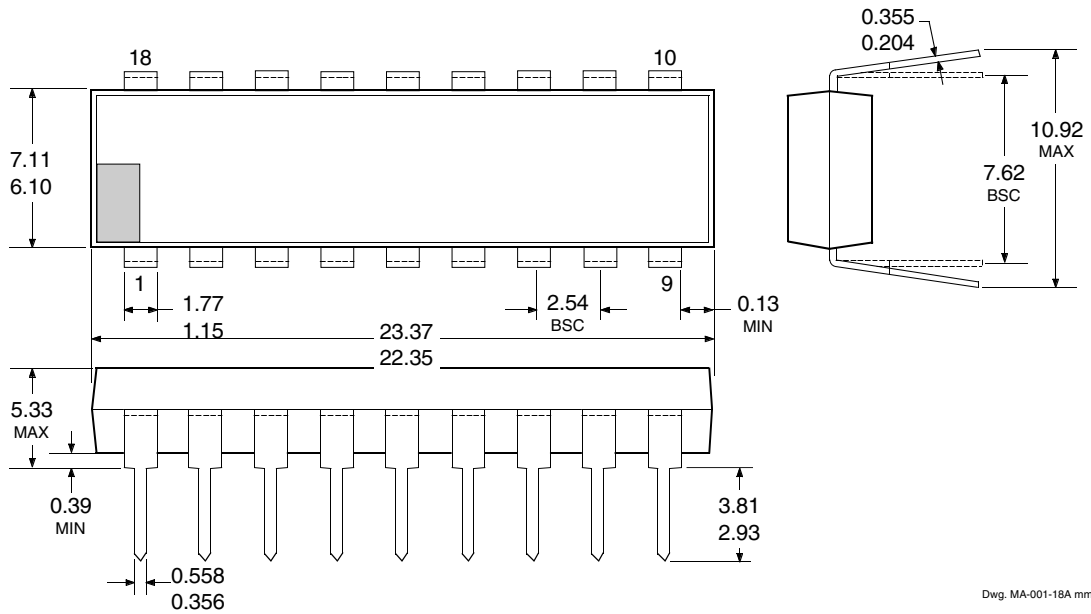
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Worcester, Massachusetts 01615-0036 (508) 853-5000  
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# 2985 8-CHANNEL SOURCE DRIVER

## Dimensions in Inches (controlling dimensions)



## Dimensions in Millimeters (for reference only)



- NOTES: 1. Exact body and lead configuration at vendor's option within limits shown.  
 2. Lead spacing tolerance is non-cumulative.  
 3. Lead thickness is measured at seating plane or below.  
 4. Supplied in standard sticks/tubes of 21 devices.

**2985**  
**8-CHANNEL**  
**SOURCE DRIVER**

**POWER SOURCE DRIVERS**

IN ORDER OF 1) OUTPUT CURRENT, 2) OUTPUT VOLTAGE, 3) NUMBER OF DRIVERS

Output Ratings *			Features					Part Number †
mA	V	#	Serial Input	Latched Drivers	Diode Clamp	Saturated Outputs	Internal Protection	
-25	60	8	–	X	–	–	–	5815
	60	10	X	X	active pull-down	–	–	5810-F and 6809/10
	60	12	X	X	active pull-down	–	–	5811 and 6811
	60	20	X	X	active pull-down	–	–	5812-F and 6812
	60	32	X	X	active pull-down	–	–	5818-F and 6818
	85	8	–	–	–	–	–	6118
-120	-25	8	–	–	X	X	–	2585
	30	8	–	–	X	X	–	2985
	50	8	X	X	X	X	–	5895
-350	35	8	–	–	X	–	X	2987
	50	8	–	–	X	–	–	2981 and 2982
	50	8	X	X	X	–	–	5891
	-50	8	–	–	X	–	–	2580
	80	8	–	–	X	–	–	2983 and 2984
	80	8	X	X	X	–	–	5890
	-80	8	–	–	X	–	–	2588
-500	6	1	–	–	–	MOSFET	X	2525 and 2535
	6	2	–	–	–	MOSFET	X	2526 and 2536
-4000	60	4	–	–	X	–	–	2944

\* Current is maximum specified test condition, voltage is maximum rating. See specification for sustaining voltage limits or over-current protection voltage limits.

† Complete part number includes additional characters to indicate operating temperature range and package style.

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