

2585

Data Sheet
29316E

8-CHANNEL SOURCE DRIVER

This versatile integrated circuit will work with many combinations of logic- and load-voltage levels, meeting interface requirements beyond the capabilities of standard logic buffers. The UDN2585A and A2585SLW source drivers can drive incandescent, LED, or vacuum fluorescent displays. Internal transient-suppression diodes permit the drivers to be used with inductive loads such as relays, solenoids, dc and stepping motors, and magnetic print hammers.

The UDN2585A and A2585SLW are drivers designed for applications requiring low output saturation voltages. Typical loads are low-voltage LEDs and incandescent displays. The eight non-Darlington, 25 V outputs will simultaneously sustain continuous load currents of -120 mA at ambient temperatures to +70°C.

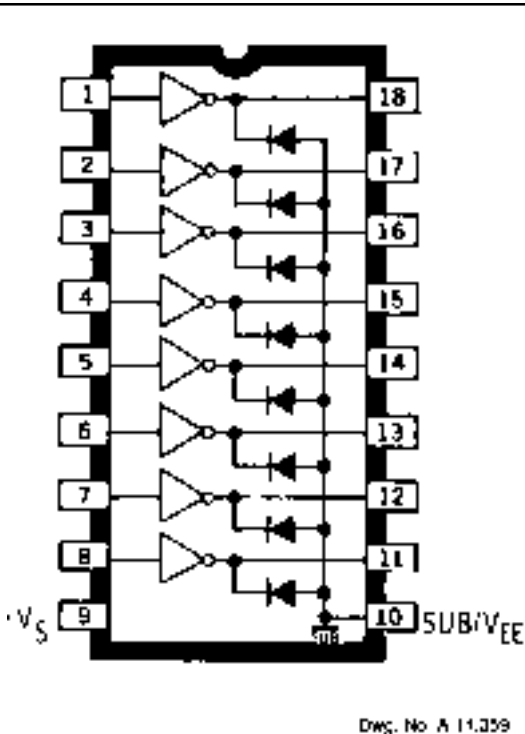
These drivers are packaged in plastic DIPs (suffix A) or surface-mountable wide-body SOICs (suffix LW), and are rated for operation over the temperature range of -20°C to +85°C.

FEATURES

- TTL, CMOS, PMOS, NMOS Compatible
- High Output-Current Rating
- Internal Transient Suppression
- Efficient Input/Output Structure
- Through-Hole and Surface-Mount Packages

ABSOLUTE MAXIMUM RATINGS at 25°C Free-Air Temperature

Output Voltage, V_{CE}	25 V
Supply Voltage, V_S (ref. sub.)	25 V
Input Voltage, V_{IN} (ref. V_S)	-20 V
Total Output Current, ($I_C + I_S$)	-250 mA
Substrate Current I_{SUB}	2.0 A
Package Power Dissipation, P_D (single output)	1.0 W
(total package)	See Graph
Operating Temperature Range, T_A	-20°C to +85°C
Storage Temperature Range, T_S	-55°C to +150°C



Always order by complete part number, e.g., **UDN2585A**.

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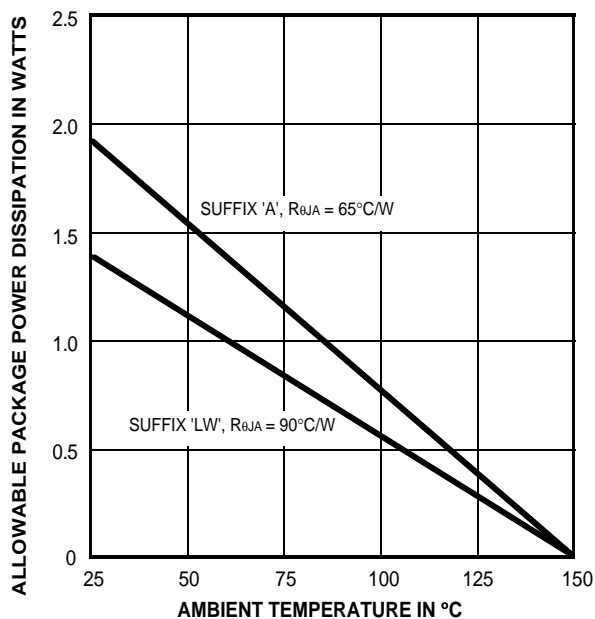
SOURCE DRIVER

For simplification, these devices are characterized on the following pages with specific voltages for inputs, logic supply (V_S), load supply (V_{EE}), and collector supply (V_{CC}). The more common application of the UDN2585A and A2585SLW are with positive-referenced logic supplies. In application, the devices are capable of operation over a wide range of logic and supply voltage levels:

TYPICAL OPERATING VOLTAGES

V_S	$V_{IN(ON)}$	$V_{IN(OFF)}$	V_{CC}	$V_{EE(MAX)}$	Device Types
0 V	-15 V to -3.6 V	-0.5 V to 0 V	NA	-25 V	UDN2585A & A2585SLW
+5 V	0 V to +1.4 V	+4.5 V to +5 V	NA	-20 V	UDN2585A & A2585SLW
+12 V	0 V to +8.4 V	+11.5 V to +12 V	NA	-13 V	UDN2585A & A2585SLW
+15 V	0 V to +11.4 V	+14.5 V to +15 V	NA	-10V	UDN2585A & A2585SLW

NOTE: The substrate must be tied to the most negative point in the external circuit to maintain isolation between drivers and to provide for normal circuit operation.



Dwg. GS-009-1B

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SOURCE DRIVER

UDN2585A and A2585SLW

ELECTRICAL CHARACTERISTICS at $T_A = +25^\circ\text{C}$, $V_S = 0\text{ V}$, $V_{EE} = -20\text{ V}$ (unless otherwise noted).

Characteristic	Symbol	Test Conditions	Limits		
			Min.	Max.	Units
Output Leakage Current	I_{CEX}	$V_{IN} = -0.5\text{ V}$, $V_{OUT} = V_{EE} = -25\text{ V}$	—	50	μA
		$V_{IN} = -0.4\text{ V}$, $V_{OUT} = V_{EE} = -25\text{ V}$, $T_A = 70^\circ\text{C}$	—	100	μA
Output Sustaining Voltage	$V_{CE(SUS)}$	$V_{IN} = -0.4\text{ V}$, $I_{OUT} = -25\text{ mA}$, Note 1	15	—	V
Output Saturation Voltage	$V_{CE(SAT)}$	$V_{IN} = -4.6\text{ V}$, $I_{OUT} = -60\text{ mA}$	—	1.1	V
		$V_{IN} = -4.6\text{ V}$, $I_{OUT} = -120\text{ mA}$	—	1.2	V
Input Current	$I_{IN(ON)}$	$V_{IN} = -4.6\text{ V}$, $I_{OUT} = -120\text{ mA}$	—	-1.6	mA
		$V_{IN} = -14.6\text{ V}$, $I_{OUT} = -120\text{ mA}$	—	-5.0	mA
Input Voltage	$V_{IN(ON)}$	$I_{OUT} = -120\text{ mA}$, $V_{CE} \leq 1.2\text{ V}$, Note 3	—	-4.6	V
	$V_{IN(OFF)}$	$I_{OUT} = -100\text{ }\mu\text{A}$, $T_A = 70^\circ\text{C}$	-0.4	—	V
Clamp Diode Leakage Current	I_R	$V_R = 25\text{ V}$, $T_A = 70^\circ\text{C}$	—	50	μA
Clamp Diode Forward Voltage	V_F	$I_F = 120\text{ mA}$	—	2.0	V
Input Capacitance	C_{IN}		—	25	pF
Turn-On Delay	t_{PHL}	$0.5\text{ }E_{IN}$ to $0.5\text{ }E_{OUT}$	—	5.0	μs
Turn-Off Delay	t_{PLH}	$0.5\text{ }E_{IN}$ to $0.5\text{ }E_{OUT}$	—	5.0	μs

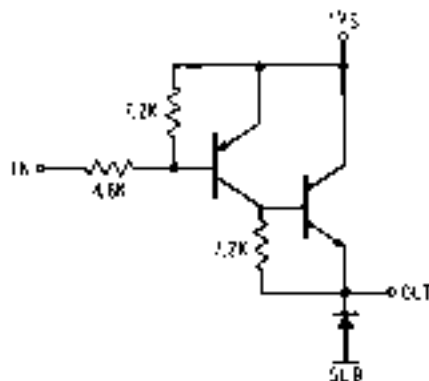
NOTES: 1. Pulsed test, $t_p \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

2. Negative current is defined as coming out of the specified device pin.

3. The $V_{IN(ON)}$ voltage limit guarantees a minimum output source current per the specified conditions.

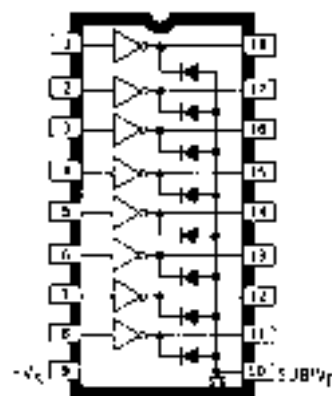
4. The substrate must always be tied to the most negative point and must be at least 4.0 V below V_S .

PARTIAL SCHEMATIC



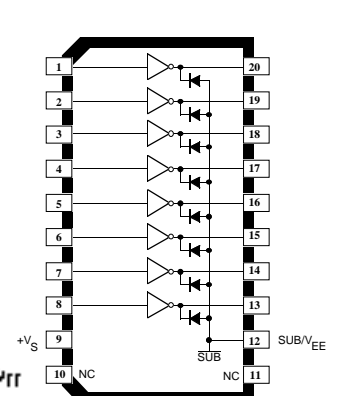
Dwg. No. A-11,360

UDN2585A



Dwg. No. A-11,359

A2585SLW

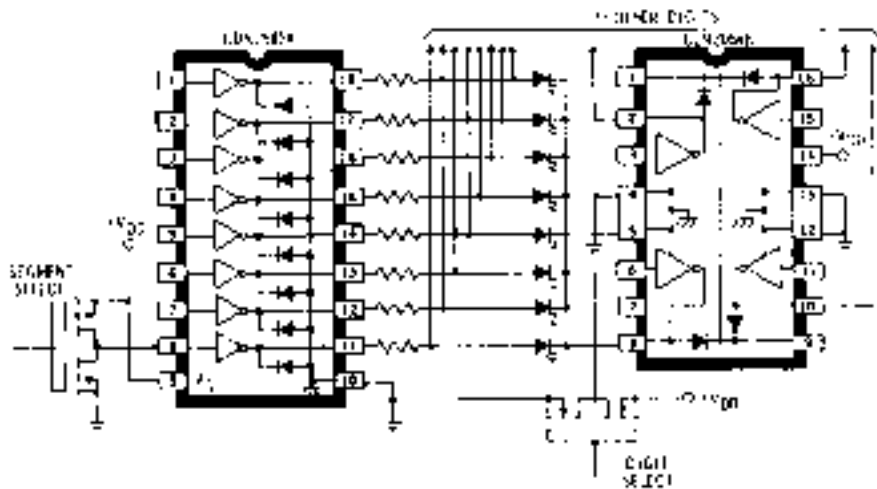


Dwg. PP-064

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8-CHANNEL SOURCE DRIVER

TYPICAL APPLICATION



Dwg. No. B-1458A

COMMON-CATHODE LED DRIVER

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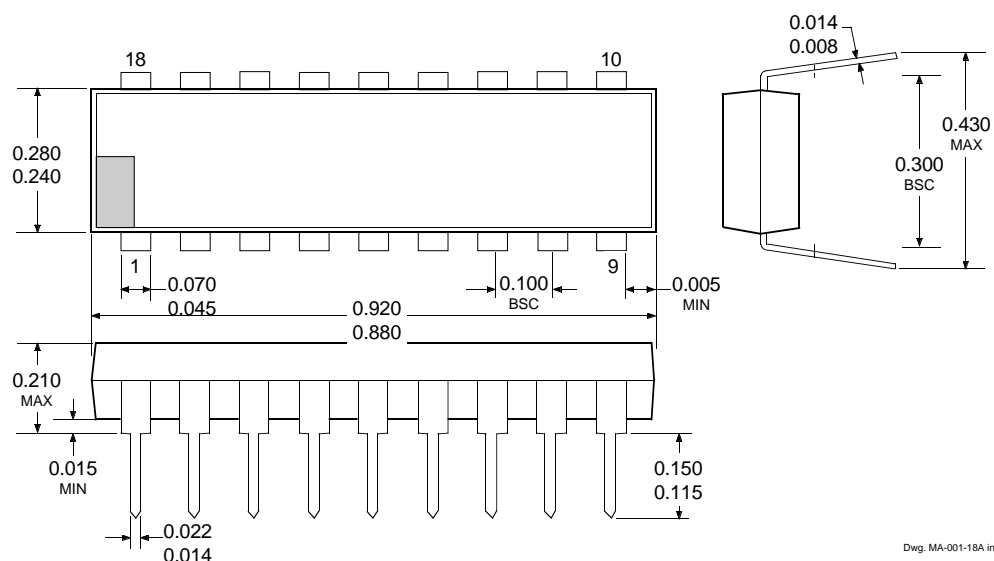
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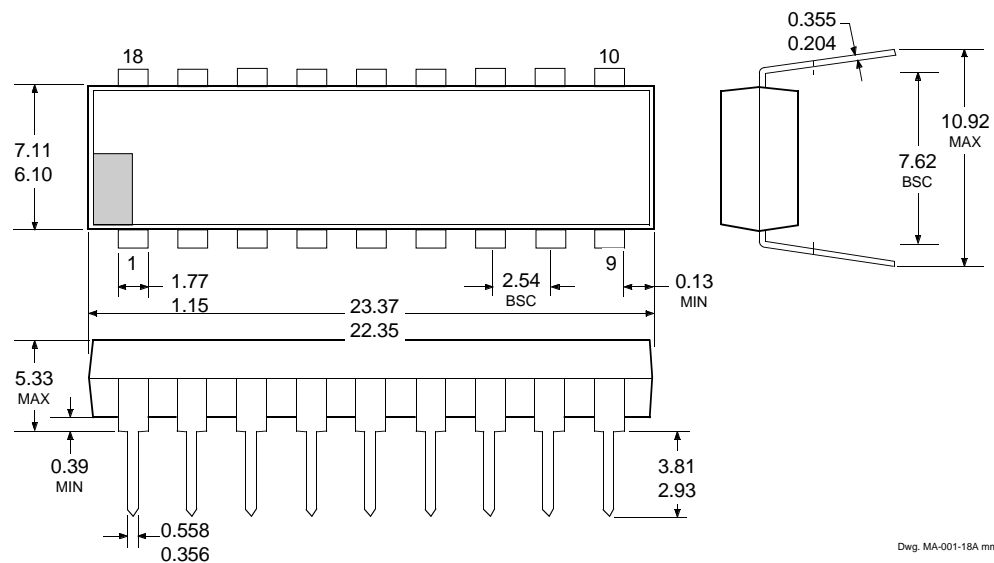
2585 8-CHANNEL SOURCE DRIVER

UDN2585A

Dimensions in Inches
(controlling dimensions)



Dimensions in Millimeters
(for reference only)

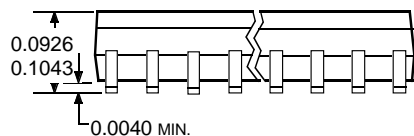
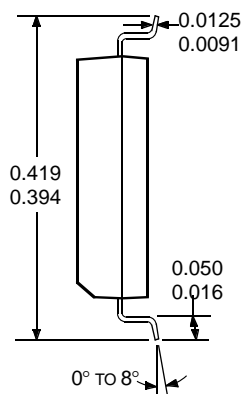
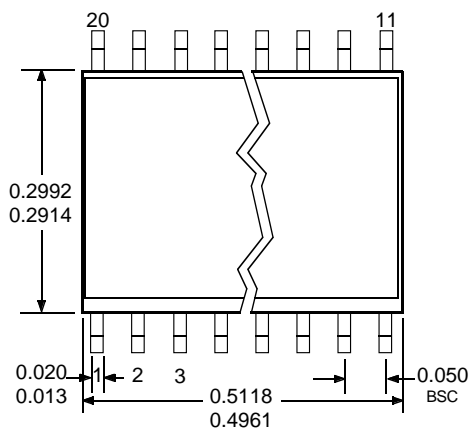


- NOTES: 1. Exact body and lead configuration at vendor's option within limits shown.
2. Lead spacing tolerance is non-cumulative.
3. Lead thickness is measured at seating plane or below.
4. Supplied in standard sticks/tubes of 21 devices.

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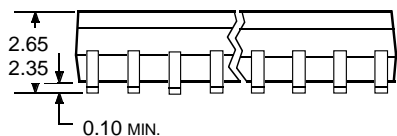
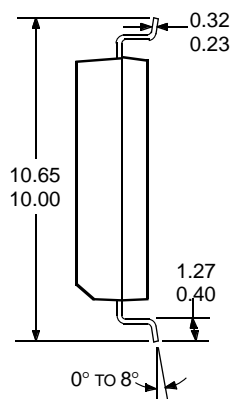
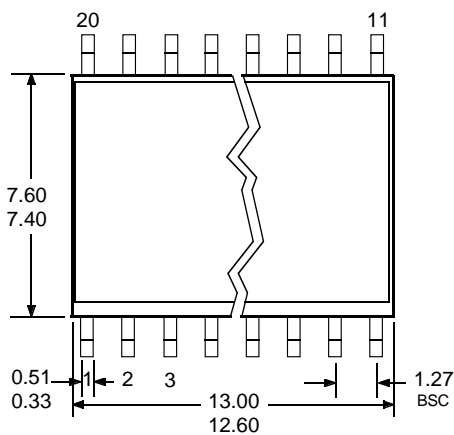
A2585SLW

Dimensions in Inches
(for reference only)



Dwg. MA-008-20 in

Dimensions in Millimeters
(controlling dimensions)



Dwg. MA-008-20 mm

- NOTES: 1. Exact body and lead configuration at vendor's option within limits shown.
2. Lead spacing tolerance is non-cumulative.
3. Supplied in standard sticks/tubes of 37 devices or add "TR" to part number for tape and reel.