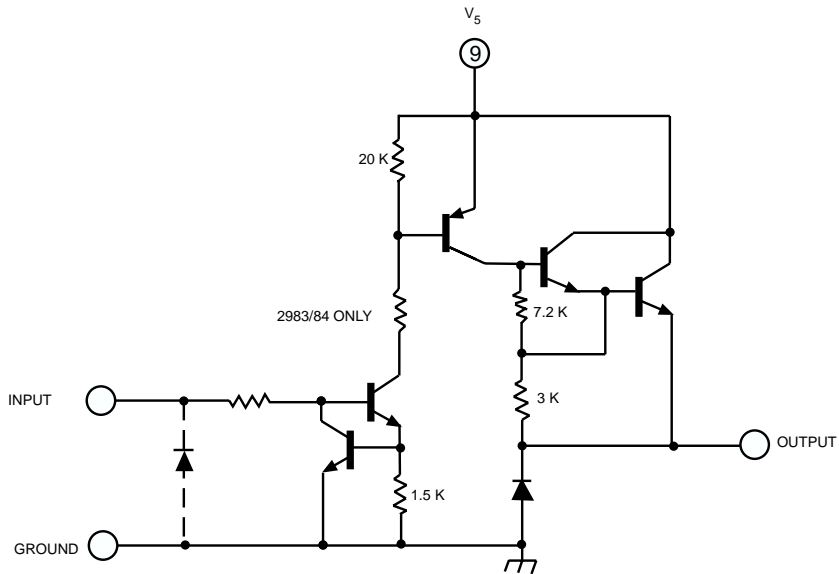




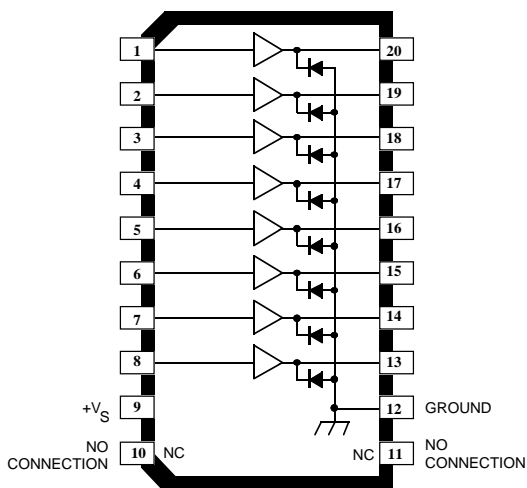
# 2981 THRU 2984 8-CHANNEL SOURCE DRIVERS

## One of Eight Drivers

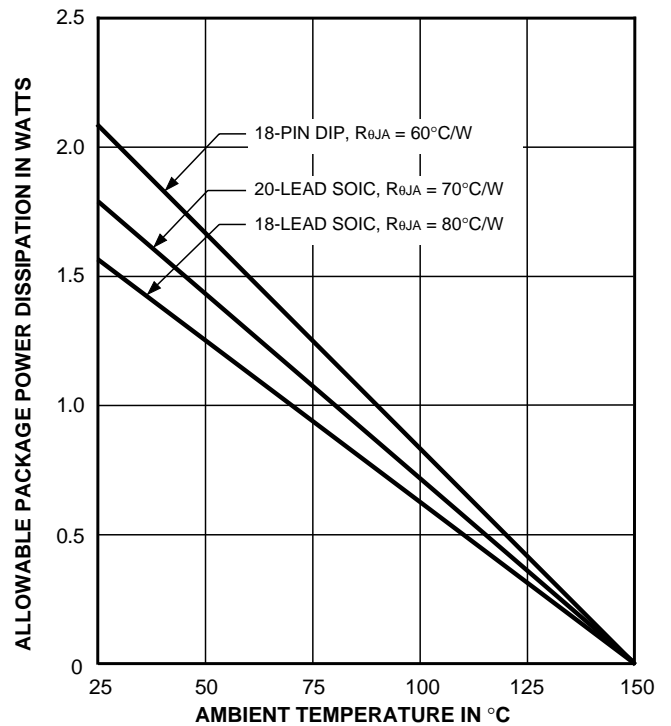


Dwg. No. A-10,242B

## A2982SLW and A2984SLW



Dwg. PP-064-2



Dwg. GP-022-4

## 2981 THRU 2984 8-CHANNEL SOURCE DRIVERS

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

Characteristic	Symbol	Applicable Devices	Test Conditions	Test Fig.	Limits			
					Min.	Typ.	Max.	Units
Output Leakage Current	$I_{CEX}$	2981/82†	$V_{IN} = 0.4\text{ V}^*$ , $V_S = 50\text{ V}$ , $T_A = +70^\circ\text{C}$	1	—	—	200	$\mu\text{A}$
		2983/84†	$V_{IN} = 0.4\text{ V}^*$ , $V_S = 80\text{ V}$ , $T_A = +70^\circ\text{C}$	1	—	—	200	$\mu\text{A}$
Output Sustaining Voltage	$V_{CE(SUS)}$	2981/82†	$I_{OUT} = -45\text{ mA}$	—	35	—	—	V
		2983/84†	$I_{OUT} = -70\text{ mA}$	—	45	—	—	V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	All	$V_{IN} = 2.4\text{ V}$ , $I_{OUT} = -100\text{ mA}$	2	—	1.6	1.8	V
			$V_{IN} = 2.4\text{ V}$ , $I_{OUT} = -225\text{ mA}$	2	—	1.7	1.9	V
			$V_{IN} = 2.4\text{ V}$ , $I_{OUT} = -350\text{ mA}$	2	—	1.8	2.0	V
Input Current	$I_{IN(ON)}$	2981/83A	$V_{IN} = 2.4\text{ V}$	3	—	140	200	$\mu\text{A}$
			$V_{IN} = 3.85\text{ V}$	3	—	310	450	$\mu\text{A}$
		2982/84†	$V_{IN} = 2.4\text{ V}$	3	—	140	200	$\mu\text{A}$
			$V_{IN} = 12\text{ V}$	3	—	1.25	1.93	mA
Output Source Current (Outputs Open)	$I_{OUT}$	2981/83A	$V_{IN} = 2.4\text{ V}$ , $V_{CE} = 2.0\text{ V}$	2	-350	—	—	mA
		2982/84†	$V_{IN} = 2.4\text{ V}$ , $V_{CE} = 2.0\text{ V}$	2	-350	—	—	mA
Supply Current Leakage Current	$I_S$	2981/82†	$V_{IN} = 2.4\text{ V}^*$ , $V_S = 50\text{ V}$	4	—	—	10	mA
		2983/84†	$V_{IN} = 2.4\text{ V}^*$ , $V_S = 80\text{ V}$	4	—	—	10	mA
Clamp Diode Forward Voltage	$I_R$	2981/82†	$V_R = 50\text{ V}$ , $V_{IN} = 0.4\text{ V}^*$	5	—	—	50	$\mu\text{A}$
		2983/84†	$V_R = 80\text{ V}$ , $V_{IN} = 0.4\text{ V}^*$	5	—	—	50	$\mu\text{A}$
Clamp Diode	$V_F$	All	$I_F = 350\text{ mA}$	6	—	1.5	2.0	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	2.0	$\mu\text{s}$
Turn-Off Delay	$t_{OFF}$	All	$0.5 E_{IN}$ to $0.5 E_{OUT}$ , $R_L = 100\Omega$ , $V_S = 35\text{ V}$ , See Note	—	—	5.0	10	$\mu\text{s}$

NOTES: Turn-off delay is influenced by load conditions. Systems applications well below the specified output loading may require timing considerations for some designs, i.e., multiplexed displays or when used in combination with sink drivers in a totem pole configuration.

Negative current is defined as coming out of (sourcing) the specified device terminal.

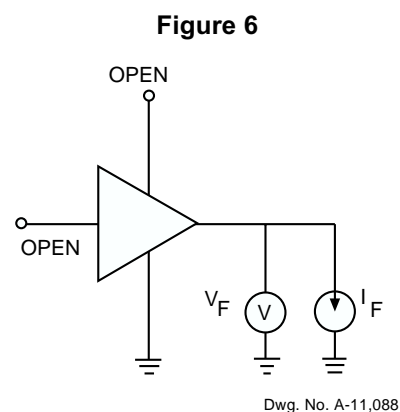
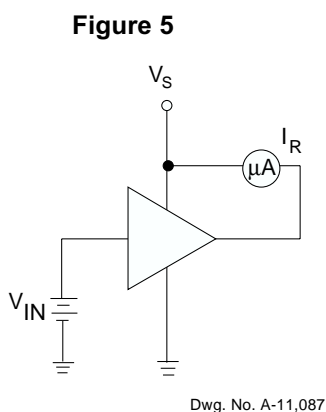
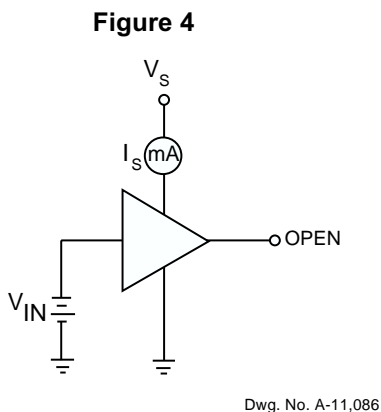
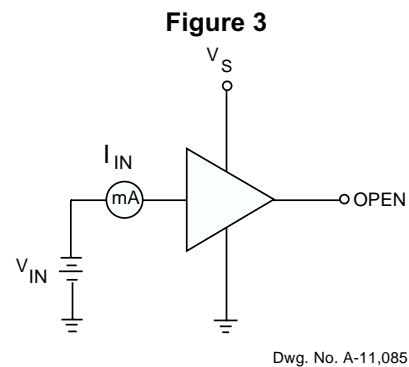
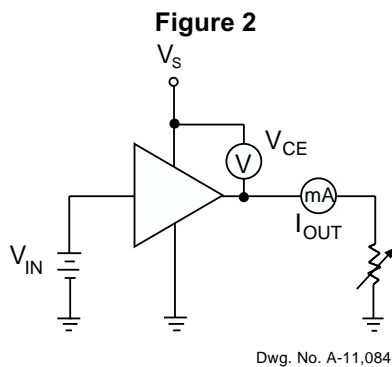
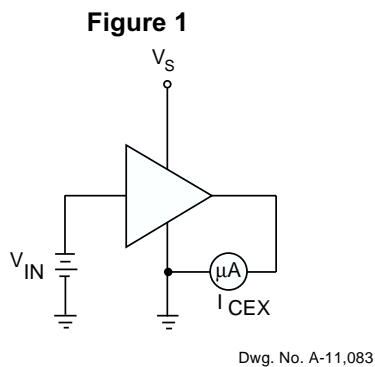
\* All inputs simultaneously.

† Complete part number includes a prefix (A or UDN) and a suffix (A or SLW) as follows:

UDN2981A,  
UDN2982A, UDN2982LW, or A2982SLW,  
UDN2983A,  
UDN2984A, UDN2984LW, or A2984SLW.

**2981 THRU 2984**  
**8-CHANNEL**  
**SOURCE DRIVERS**

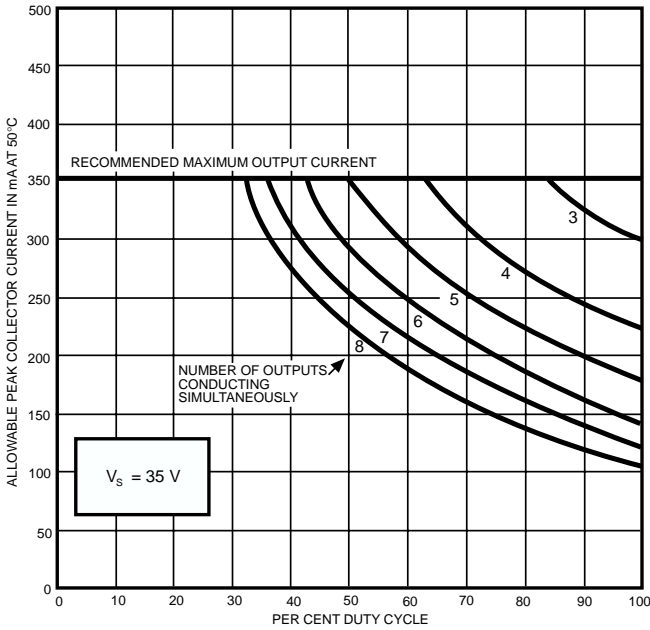
**TEST FIGURES**



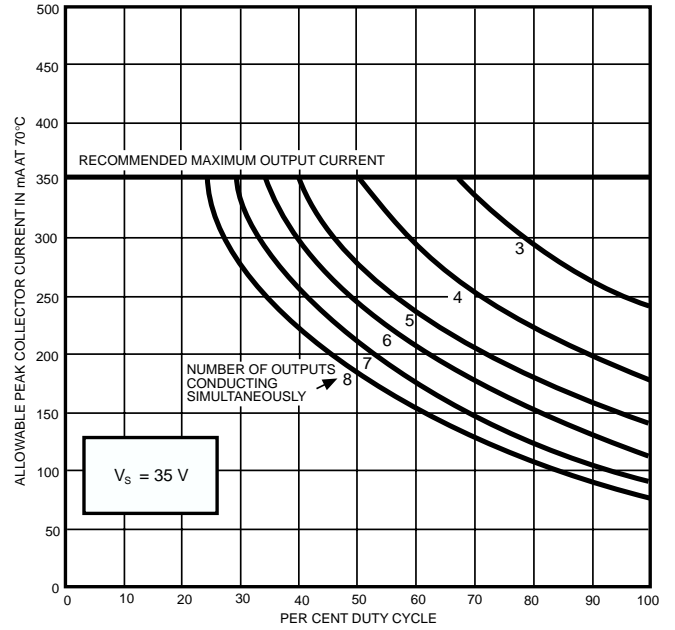
# 2981 THRU 2984 8-CHANNEL SOURCE DRIVERS

## Allowable peak collector current as a function of duty cycle

### Series UDN2980A

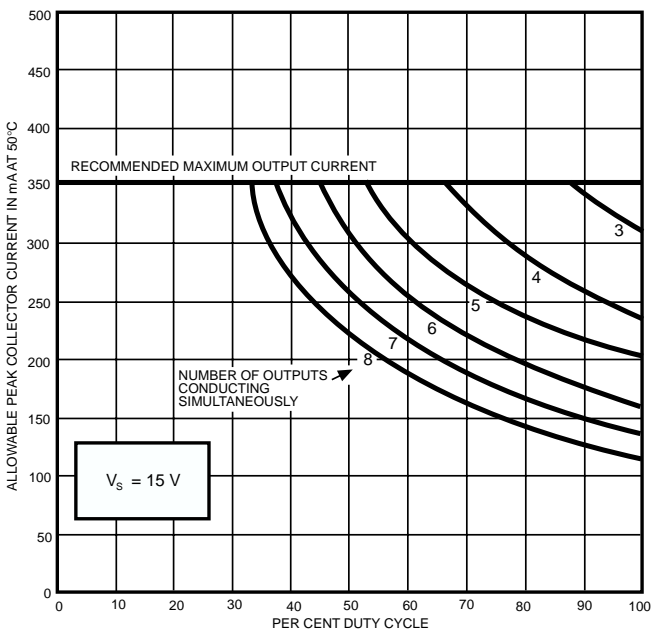


Dwg. No. A-11,106B

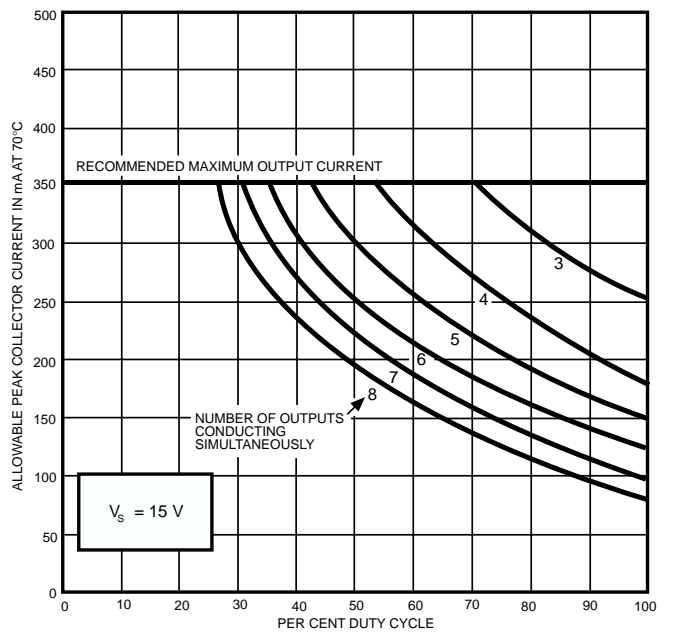


Dwg. No. A-11,111B

### UDN2981A and UDN2982A



Dwg. No. A-11,107B

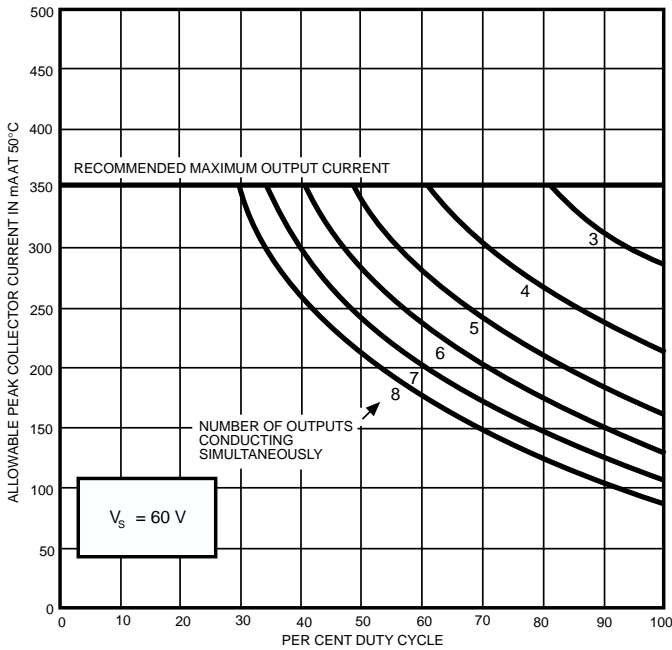


Dwg. No. A-11,108B

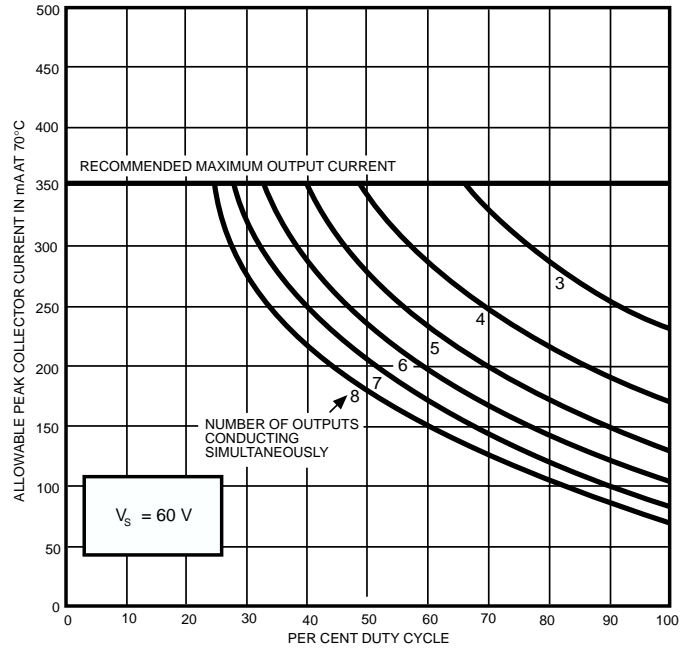
# 2981 THRU 2984 8-CHANNEL SOURCE DRIVERS

## Allowable peak collector current as a function of duty cycle

### UDN2983A and UDN2984A

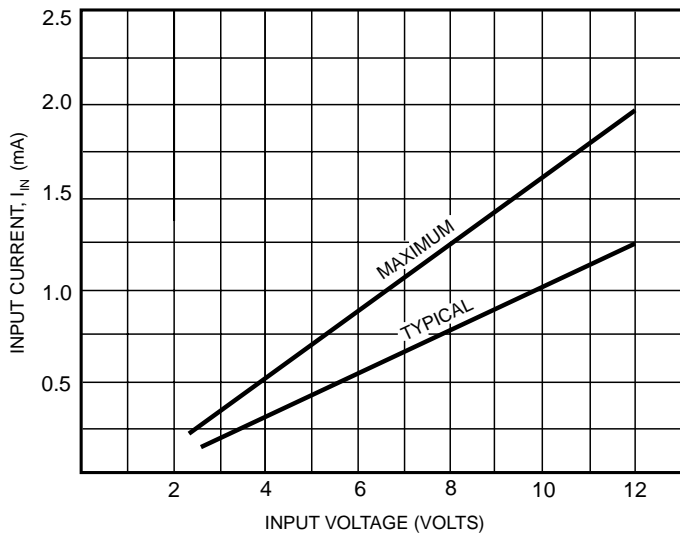


Dwg. No. A-11,109B



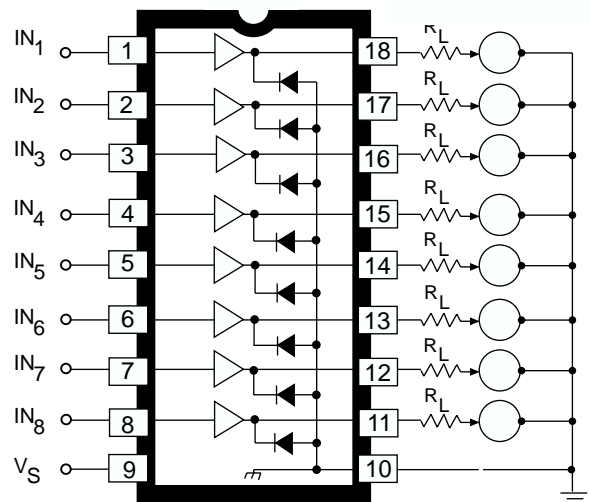
Dwg. No. A-11,110B

## Input current as a function of input voltage



Dwg. No. A-11,115B

## Typical electroensitive printer application

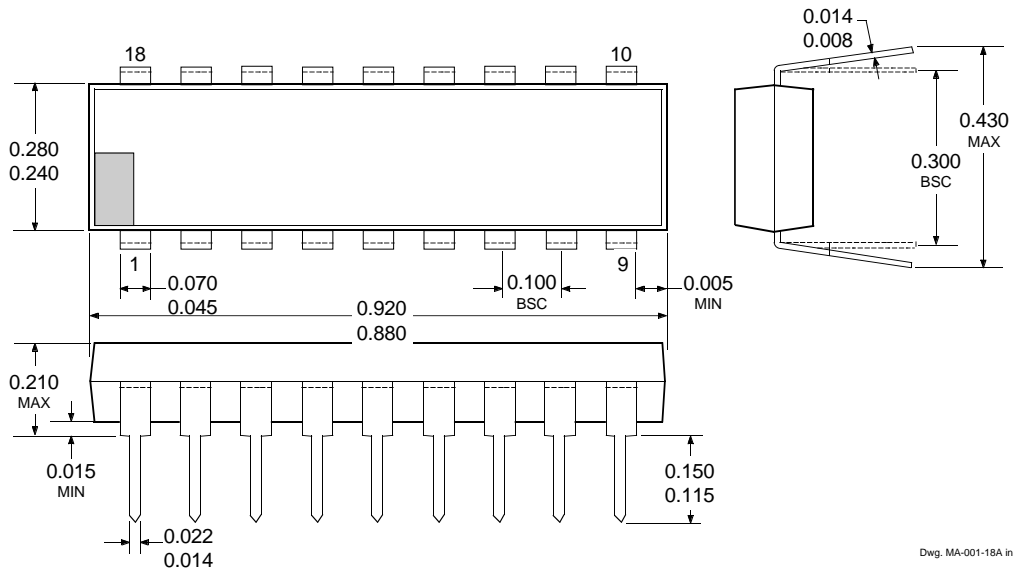


Dwg. No. A-11,113A

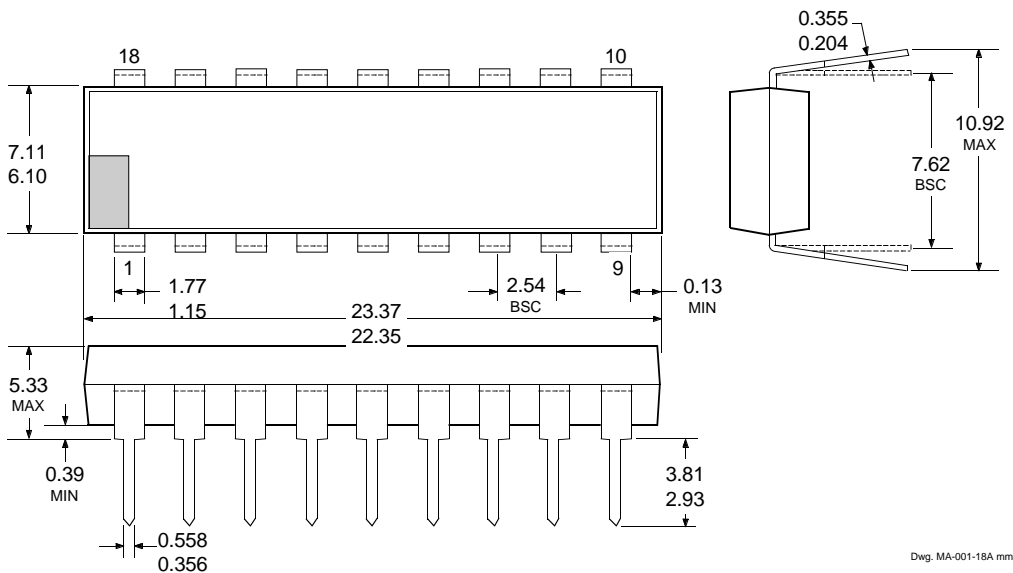
# 2981 THRU 2984 8-CHANNEL SOURCE DRIVERS

## UDN2981A, UDN2982A, UDN2983A, and UDN2984A

### Dimensions in Inches (controlling dimensions)



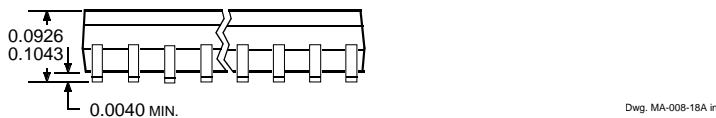
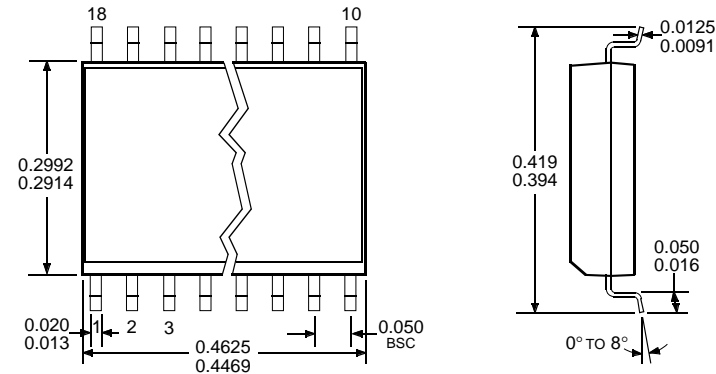
### Dimensions in Millimeters (for reference only)



- 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.

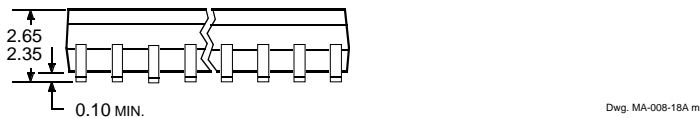
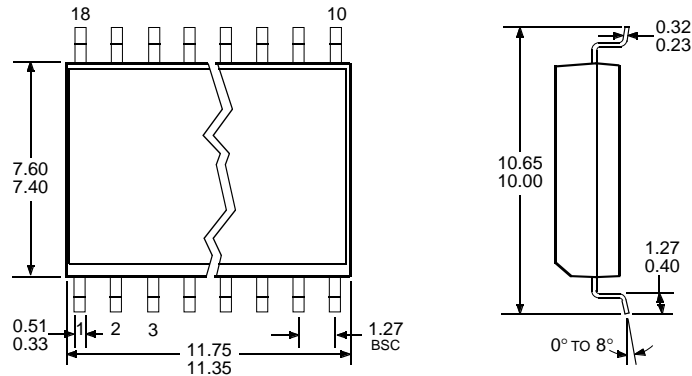
**2981 THRU 2984**  
**8-CHANNEL**  
**SOURCE DRIVERS**

**UDN2982LW and UDN2984LW**  
 (add "TR" to part number for tape and reel)  
**Dimensions in Inches**  
 (for reference only)



Dwg. MA-008-18A in

**Dimensions in Millimeters**  
 (controlling dimensions)



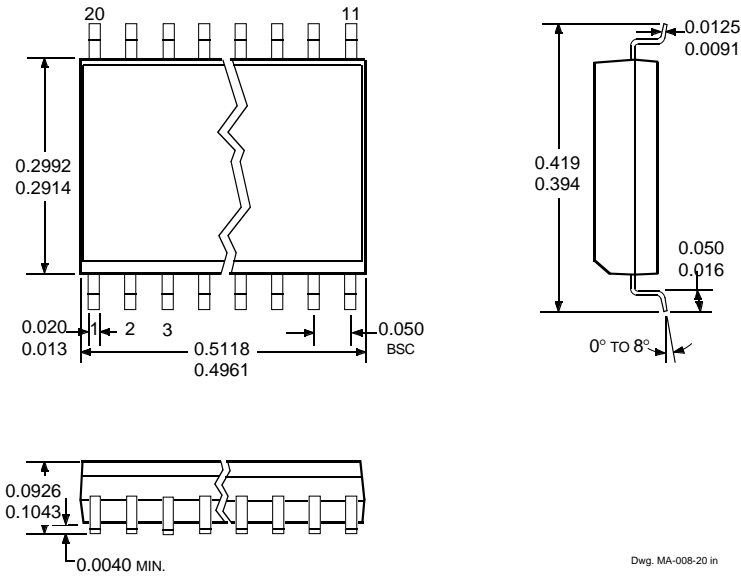
Dwg. MA-008-18A mm

- 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 41 devices or add "TR" to part number for tape and reel.

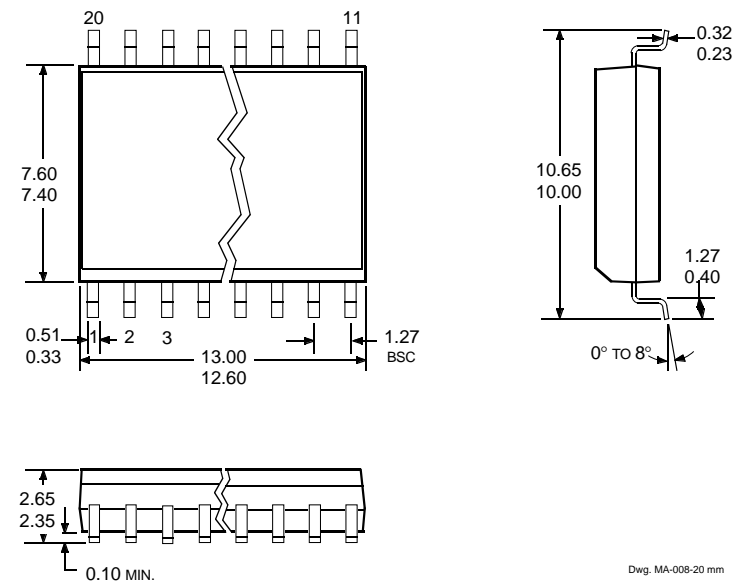


**2981 THRU 2984**  
**8-CHANNEL**  
**SOURCE DRIVERS**

**A2982SLW and A2984SLW**  
 (add "TR" to part number for tape and reel)  
**Dimensions in Inches**  
 (for reference only)



**Dimensions in Millimeters**  
 (controlling dimensions)



- 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.

**2981 THRU 2984**  
**8-CHANNEL**  
**SOURCE DRIVERS**

**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.

*The products described here are manufactured under one or more U.S. patents or U.S. patents pending.*

*Allegro MicroSystems, Inc. reserves the right to make, from time to time, such departures from the detail specifications as may be required to permit improvements in the performance, reliability, or manufacturability of its products. Before placing an order, the user is cautioned to verify that the information being relied upon is current.*

*Allegro products are not authorized for use as critical components in life-support devices or systems without express written approval.*

*The information included herein is believed to be accurate and reliable. However, Allegro MicroSystems, Inc. assumes no responsibility for its use; nor for any infringement of patents or other rights of third parties which may result from its use.*