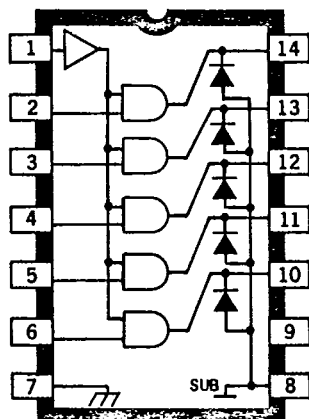


2957

T-S2-17

HIGH-VOLTAGE, HIGH-CURRENT SOURCE DRIVER



Dwg. No. A-10,229A

ABSOLUTE MAXIMUM RATINGS at + 25°C Free-Air Temperature (Reference Pin 7)

Output Voltage, V_{OUT}	-80 V
Input Voltage, V_{IN}	+10 V
Output Current, I_{OUT}	-500 mA
Power Dissipation,	
P_D (any one driver)	1.0 W
(total package)	2.0 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 16.67 mW/°C above 25°C

Comprised of five common-collector NPN Darlington output stages, associated common-base PNP input stages, and a common ENABLE stage, the UDN2957A high-voltage, high-current source driver is used to switch the ground end of loads that are directly connected to a negative supply. Typical loads include telephone relays, PIN diodes, and LEDs.

This device will sustain output OFF voltages of -80 V and will source currents to -500 mA per driver. Under normal operating conditions, it will sustain load currents of -200 mA on each of the five drivers simultaneously at ambient temperatures up to +70°C.

The UDN2957A driver has appropriate input-current limiting resistors for operation from TTL, Schottky TTL, DTL, and 5 V CMOS. The input and ENABLE levels must both be biased towards the positive supply to activate the output load.

Integral transient-suppression diodes allow this device to be used with inductive loads without adding discrete diodes. In order to maintain isolation between drivers, the substrate should be connected to the most negative supply.

Input connections are on one side of the dual in-line package, output connections on the other side to simplify printed wiring board layout.

The UDN2957A high-voltage, high-current driver is supplied in a 14-lead dual in-line package conforming to JEDEC outline TO-116 (MO-001AA).

FEATURES

- 500 mA Output Source Current
- 50 V Output Sustaining Voltage
- Output Transient Protection
- TTL, DTL, 5 V CMOS Input

Always order by complete part number: **UDN2957A**.

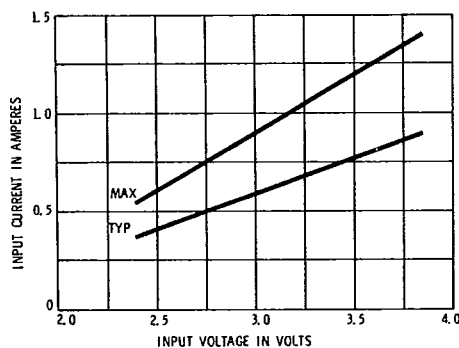
2957

NEGATIVE SUPPLY, 5-CHANNEL SOURCE DRIVER

T-52-17

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

Characteristic	Symbol	Test Conditions	Limit
Output Leakage Current	I_{CEX}	$V_{\text{IN}} = V_{\text{ENABLE}} = 0.4\text{ V}$, $V_{\text{OUT}} = -80\text{ V}$, $T_A = +70^\circ\text{C}$	-200 μA Max.
		$V_{\text{IN}} = 0.4\text{ V}$, $V_{\text{ENABLE}} = 3.85\text{ V}$, $V_{\text{OUT}} = -80\text{ V}$, $T_A = +70^\circ\text{C}$	-200 μA Max.
		$V_{\text{IN}} = 3.85\text{ V}$, $V_{\text{ENABLE}} = 0.4\text{ V}$, $V_{\text{OUT}} = -80\text{ V}$, $T_A = +70^\circ\text{C}$	-200 μA Max.
Collector-Emitter Saturation Voltage	$V_{\text{CE(SAT)}}$	$V_{\text{IN}} = 2.4\text{ V}$, $I_{\text{OUT}} = -100\text{ mA}$	-1.20 V Max.
		$V_{\text{IN}} = 2.7\text{ V}$, $I_{\text{OUT}} = -175\text{ mA}$	-1.35 V Max.
		$V_{\text{IN}} = 3.9\text{ V}$, $I_{\text{OUT}} = -350\text{ mA}$	-1.70 V Max.
Output Sustaining Voltage	$V_{\text{CE(SUS)}}$	$V_{\text{IN}} = 0.4\text{ V}$, $I_{\text{OUT}} = -25\text{ mA}$	50 V Min.
Input Current	$I_{\text{IN(ON)}}$	$V_{\text{IN}} = 2.4\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	675 μA Max.
		$V_{\text{IN}} = 3.85\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	1.40 mA Max.
	$I_{\text{IN(OFF)}}$	$I_{\text{OUT}} = -500\text{ }\mu\text{A}$, $T_A = +70^\circ\text{C}$	50 μA Min.
Output Source Current	I_{OUT}	$V_{\text{IN}} = 2.4\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	-125 mA Min.
		$V_{\text{IN}} = 2.7\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	-200 mA Min.
		$V_{\text{IN}} = 3.0\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	-250 mA Min.
		$V_{\text{IN}} = 3.3\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	-300 mA Min.
		$V_{\text{IN}} = 3.6\text{ V}$, $V_{\text{OUT}} = -2.0\text{ V}$	-350 mA Min.
Clamp Diode Leakage Current	I_{R}	$V_{\text{R}} = 80\text{ V}$	50 μA Max.
Clamp Diode Forward Voltage	V_{F}	$I_{\text{F}} = 350\text{ mA}$	2.0 V Max.
Turn-On Delay	t_{ON}	$0.5 E_{\text{IN}}$ to $0.5 E_{\text{OUT}}$, $R_{\text{L}} = 400\text{ }\Omega$, $C_{\text{T}} = 25\text{ pF}$	4.0 μs Max.
Turn-Off Delay	t_{OFF}	$0.5 E_{\text{IN}}$ to $0.5 E_{\text{OUT}}$, $R_{\text{L}} = 400\text{ }\Omega$, $C_{\text{T}} = 25\text{ pF}$	10 μs Max.

**INPUT CURRENT
AS A FUNCTION OF VOLTAGE**

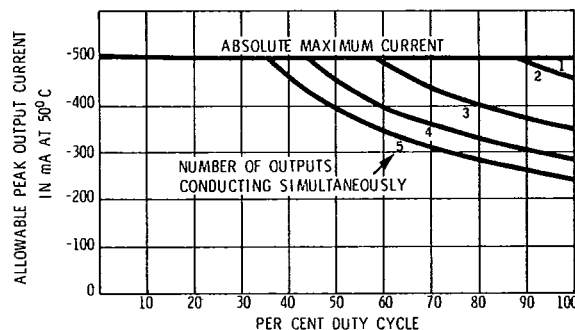
Dwg. No. A-11.061

2957

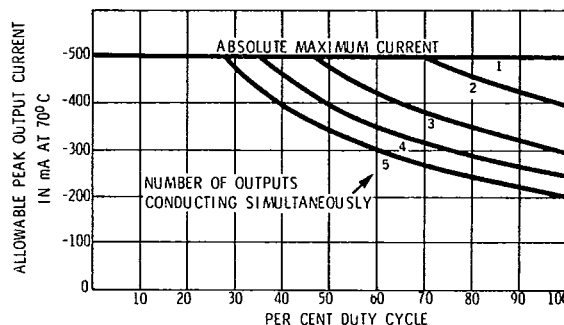
NEGATIVE SUPPLY 5 CHANNEL SOURCE DRIVER

T-52-17

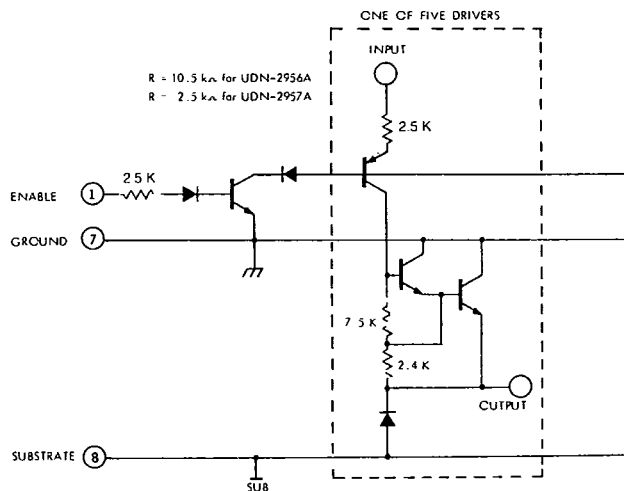
INPUT CURRENT AS A FUNCTION OF VOLTAGE



Dwg. No. A-11,062



Dwg. No. A-11,063



Dwg. No. A-10,241D