

### General

The MIC2981/82 is an 8-channel, high-voltage, high-current source driver array ideal for switching high-power loads from logic-level TTL, CMOS, or PMOS control signals.

These drivers can manage multiple loads of up to 50V and 500mA, limited only by package power dissipation.

Micrel's MIC2981/82 features inputs compatible with 5V TTL and 5V to 15V CMOS or PMOS logic outputs. Micrel's dual-marked device replaces either UDN2981 or UDN2982 devices.

The MIC2981/82 is available in the 18-pin plastic DIP and 18-lead wide SOP package. Both devices operate in the industrial temperature range.

### Features

- Output voltage to 50V
- Output current to 500mA
- Transient-protected outputs
- Integral clamp diodes
- TTL, CMOS, or PMOS compatible inputs

### Applications

- Relay and solenoid switching
- Stepping motor
- LED and incandescent displays

### Ordering Information

Reference	Part Number Manufacturing*	PbFree	Temperature Range	Package
MIC2981BN**	MIC2981/82BN	MIC2981/82YN	-40°C to +85°C	18-pin DIP
MIC2982BN**	MIC2981/82BN	MIC2981/82YN	-40°C to +85°C	18-pin DIP
MIC2981BWM**	MIC2981/82BWM	MIC2981/82YWM	-40°C to +85°C	18-pin wide SOP
MIC2982BWM**	MIC2981/82BWM	MIC2981/82YWM	-40°C to +85°C	18-pin wide SOP

\* Order entry P/N.

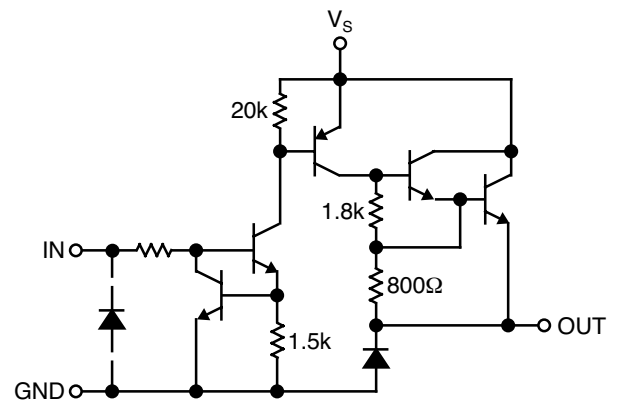
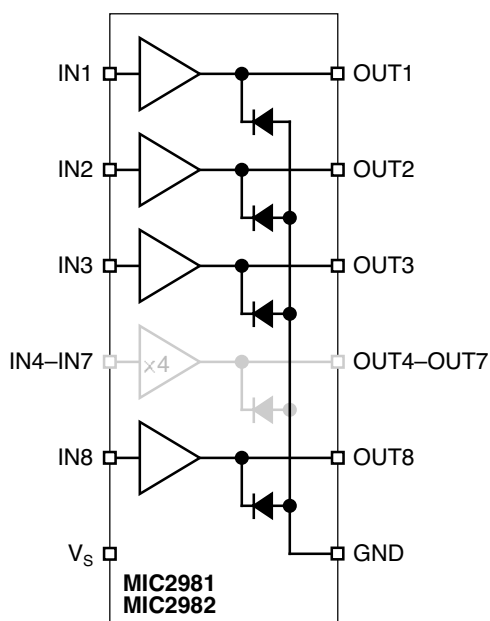
\*\*Orders for MIC2981BN or MIC2982BN will be filled with dual-marked MIC2981/82BN.

\*\*Orders for MIC2981YN or MIC2982YN will be filled with dual-marked MIC2981/82YN.

\*\*Orders for MIC2981BWM or MIC2982BWM will be filled with dual-marked MIC2981/82BWM.

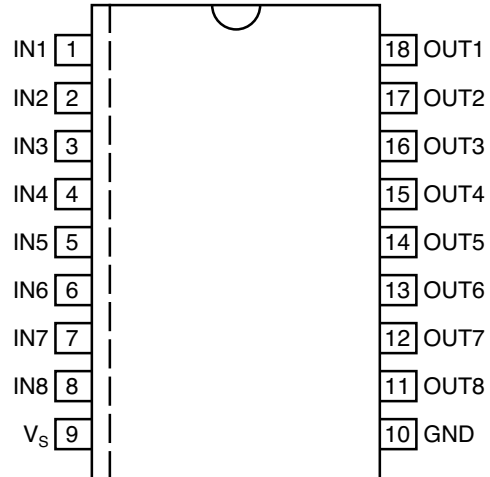
\*\*Orders for MIC2981YWM or MIC2982YWM will be filled with dual-marked MIC2981/82YWM.

### Functional Diagrams



Typical MIC2981/2982 Source Driver

## Pin Configuration



**18-Pin DIP (N)**  
**18-Pin Wide SOP (WM)**

## Pin Description

Pin No.	Pin No.	Pin Name	Pin Function
1–8	IN1–IN8	Input 1 through Input 8:	Base drive to driver input transistor.
9	V <sub>S</sub>	Supply Input	
10	GND	Ground	
11–18	OUT8–OUT1	Output 8 through Output 1:	Emitter of Darlington driver output.

**Absolute Maximum Ratings**

Supply Voltage ( $V_S$ )	50V
Output Voltage ( $V_{CE}$ )	50V
Continuous Output Current ( $I_C$ )	500mA
Input Voltage ( $V_{IN}$ )	
MIC2981/82	30V
Ground Current ( $I_{GND}$ )	3A
Junction Temperature ( $T_J$ )	+150°C
Storage Temperature ( $T_S$ )	-65°C to +150°C

**Operating Ratings**

Supply Voltage ( $V_S$ )	5V to 50V
Ambient Temperature ( $T_A$ )	-40°C to +85°C
Package Thermal Resistance	
PDIP $\theta_{JA}$	56°C/W
SOP $\theta_{JA}$	84°C/W

**Electrical Characteristics**(Note 3)

$V_S = 50V$ ,  $T_A = +25^\circ C$ , unless noted.

Symbol	Parameter	Condition	Min	Typ	Max	Units
$I_{CEX}$	Output Leakage Current	$V_{IN} = 0.4V$ , $T_A = +70^\circ C$ , <b>Note 1</b>			200	$\mu A$
$V_{CE(sus)}$	Output Sustaining Voltage	$I_{OUT} = 45mA$	35			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$V_{IN} = 2.4V$ , $I_{OUT} = 100mA$ $V_{IN} = 2.4V$ , $I_{OUT} = 225mA$ $V_{IN} = 2.4V$ , $I_{OUT} = 350mA$		1.7 1.8 1.9	2.0 2.1 2.2	V V V
$I_{IN(on)}$	Input Current	MIC2981 $V_{IN} = 2.4V$ $V_{IN} = 3.85$ MIC2982 $V_{IN} = 2.4V$ $V_{IN} = 12V$		140 310 140 1.25	200 450 200 1.93	$\mu A$ $\mu A$ $\mu A$ mA
$I_{OUT}$	Output Source Current	$V_{IN} = 2.4V$ , $V_{CE} = 2.2V$	350			mA
$I_S$	Supply Current	$V_{IN} = 2.4$ , OUT1-8 = open, <b>Note 1</b>			10	mA
$t_{ON}$	Turn-On Delay	$0.5E_{IN}$ to $0.5E_{OUT}$ , $R_L = 100\Omega$ , $V_S = 35V$ ,		1.0	2.0	$\mu s$
$t_{OFF}$	Turn-Off Delay	$0.5E_{IN}$ to $0.5E_{OUT}$ , $R_L = 100\Omega$ , $V_S = 35V$ , <b>Note 2</b>		5.0	10	$\mu s$
$I_R$	Clamp Diode Leakage Current	$V_R = 50V$ , $V_{IN} = 0.4V$ , <b>Note 1</b>			50	$\mu A$
$V_F$	Clamp Diode Forward Voltage	$I_F = 350mA$		1.5	2.0	V

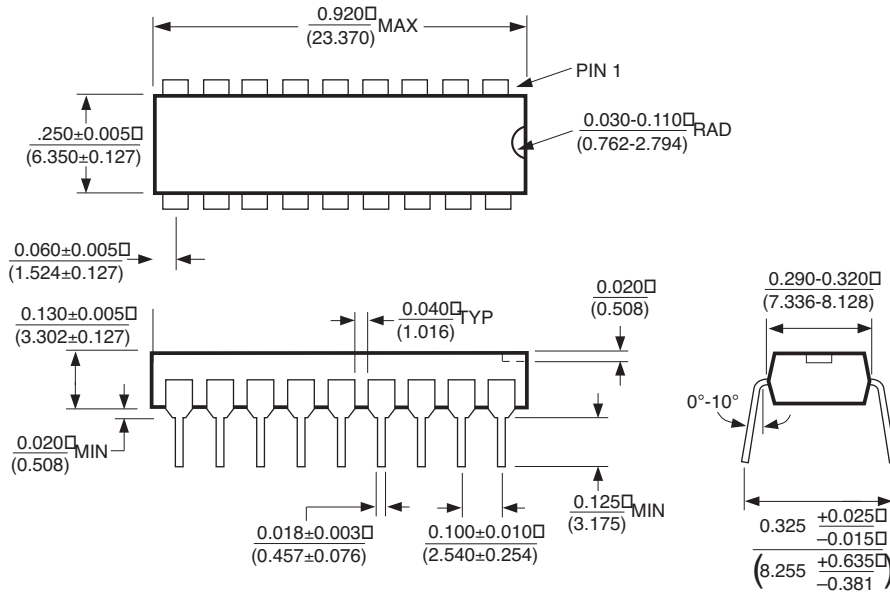
**General Note:** Devices are ESD protected; however, handling precautions are recommended.

**Note 1:** Applied to all 8 inputs simultaneously.

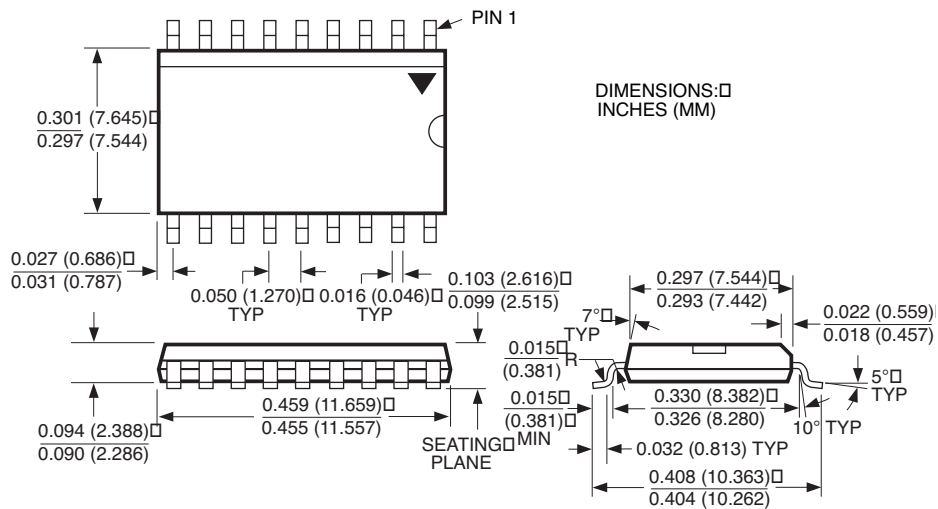
**Note 2:** Load conditions affect turnoff delay.

**Note 3:** Specification for packaged product only.

Package Information



18-Pin Plastic DIP (N)



18-Pin Wide SOP (WM)

MICREL INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

This information furnished by Micrel in this data sheet is believed to be accurate and reliable. However no responsibility is assumed by Micrel for its use. Micrel reserves the right to change circuitry and specifications at any time without notification to the customer.

Micrel Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of Micrel Products for use in life support appliances, devices or systems is a Purchaser's own risk and Purchaser agrees to fully indemnify Micrel for any damages resulting from such use or sale.

© 1999 Micrel Incorporated

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9