



New Product Announcement

ULN2002/3/4AD

High Voltage, High Current Darlington Arrays

ULN2002A, ULN2003A and ULN2004A are high-voltage, high-current Darlington arrays each containing seven open-collector, common-emitter pairs. Each pair is rated at 500mA. Suppression diodes are included for inductive load driving, the inputs and outputs are pinned in opposition to simplify board layout.

Device options are designed to be compatible with common logic families:

ULN2002A (14-25V PMOS)
ULN2003A (5V TTL, CMOS)
ULN2004A (6-15V CMOS, PMOS)

These devices are capable of driving a wide range of loads including solenoids, relays, DC motors; LED display filament lamps, thermal print-heads and high power buffers.

ULN2002A, 2003A and 2004A are available in small-outline SO-16 and DIP-16 packages.



The Diodes' Advantage

▪ Industry Standard Part Number and Specification

Offers cost-effective alternatives with compatible performance to other manufacturers' ULN2002A/3A/4A series

▪ Wide Operating Temperature Range (-40°C to +105°C)

Compatibility to industrial system requirements

▪ High Output Current, 500mA

Allows direct drive to inductive loads to meet actual application requirement

▪ Industrial Standard Package Options and Pin Arrangement

Drop in replacement for alternative parts

Applications

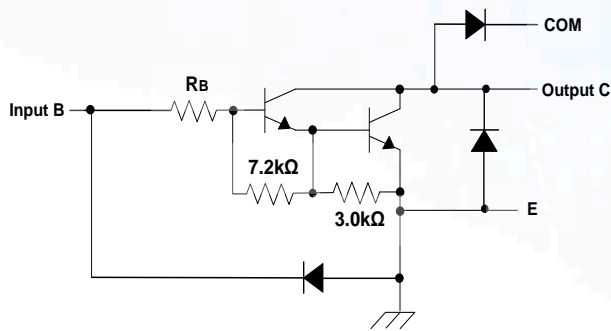
- Relay Drivers
- Stepping Motor Drivers
- Home Appliances
- Industrial Applications



New Product Announcement

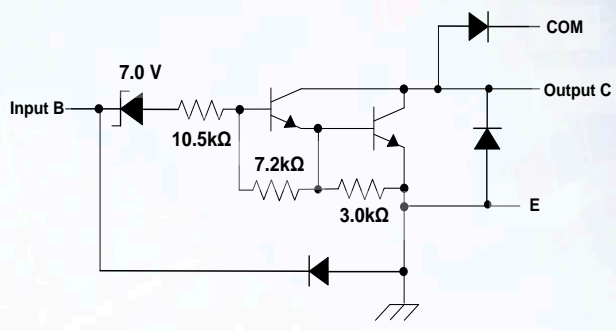
ULN2002/3/4AD

Functional Block Diagram



ULN2003A: $R_B = 2k7$
ULN2004A: $R_B = 10k5$

ULN2003A, ULN2004A



ULN2002A

Product Portfolio

Part	Number of Drivers	Input Compatibility	Input Voltage (Max)(V)	Collector to Emitter Voltage Rating(V)	Output Voltage (Max)(V)	Output Current (Max)(mA)	Delay Time (Typ)(ns)	Operating Temperature Range, Ta(°C)	Package Outline
ULN2003A	7	5V TTL, CMOS	30	50	50	500	250	-40~105	SO-16, DIP-16
ULN2002A	7	14~25V PMOS	30	50	50	500	250	-40~105	SO-16, DIP-16
ULN2004A	7	6~15V, CMOS, PMOS	30	50	50	500	250	-40~105	SO-16, DIP-16

Ordering Information

Part	Package Code	Packaging	13" Tape and Reel		*** Tube ***	
			Quantity	Part Number Suffix	Quantity	Part Number Suffix
ULN2003AS16-13	S16	SO-16	2,500/Tape & Reel	-13	N/A	N/A
ULN2002AS16-13	S16	SO-16	2,500/Tape & Reel	-13	N/A	N/A
ULN2004AS16-13	S16	SO-16	2,500/Tape & Reel	-13	N/A	N/A
ULN2003AD16-U	D16	DIP-16	NA	NA	25/Tube	-U
ULN2002AD16-U	D16	DIP-16	NA	NA	25/Tube	-U
ULN2004AD16-U	D16	DIP-16	NA	NA	25/Tube	-U