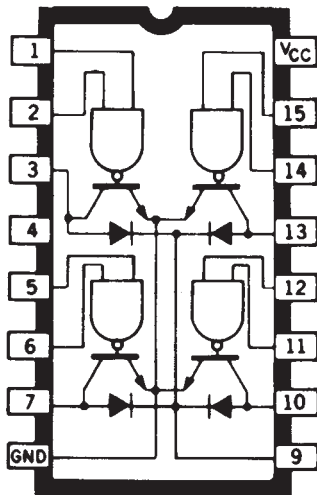


# 5706

## QUAD 2-INPUT PERIPHERAL/POWER DRIVER —TRANSIENT-PROTECTED OUTPUTS



Dwg. No. A-9866

### ABSOLUTE MAXIMUM RATINGS at $T_A = +25^\circ\text{C}$

Supply Voltage, $V_{CC}$ .....	7.0 V
Input Voltage, $V_{IN}$ .....	30 V
Output Off-State Voltage, $V_{OFF}$ .....	80 V
Output On-State Sink Current, $I_{ON}$ .....	600 mA
Suppression Diode Off-State Voltage, $V_{OFF}$ .....	80 V
Suppression Diode On-State Current, $I_{ON}$ .....	600 mA
Power Dissipation, $P_D$ .....	2.0 W*
Each Driver .....	0.8 W
Operating Free-Air Temperature Range, $T_A$ .....	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Storage Temperature Range, $T_S$ .....	$-55^\circ\text{C}$ to $+150^\circ\text{C}$

\*Derate at the rate of 16.7 mW/ $^\circ\text{C}$  above  
 $T_A = +25^\circ\text{C}$

This 16-lead quad 2-input peripheral/power driver is a bipolar monolithic integrated circuit containing logic gates, high-current switching transistors, and transient-suppression diodes on the same chip. The four output transistors are capable of simultaneously sinking 300 mA continuously at ambient temperatures of up to  $+70^\circ\text{C}$ . In the OFF state, this driver will withstand at least 80 V.

The UDQ5706A quad driver is ideally suited for interface between low-level or high-level logic and high-current/high-voltage loads. Typical applications include driving peripheral loads such as incandescent lamps, light-emitting diodes, memories, and heaters.

The integral transient-suppression diodes allow its use with inductive loads such as relays, solenoids, or stepping motors without the need of discrete diodes.

This device is furnished in a 16-pin DIP package with a copper leadframe for improved thermal characteristics.

### FEATURES

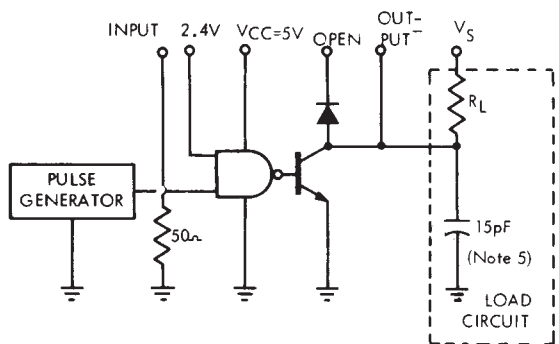
- DTL/TTL/PMOS/CMOS Compatible Inputs
- Low Input Current
- 300 mA Continuous Output Current
- Standoff Voltage of 80 V

Always order by complete part number, e.g., **UDQ5706A**.

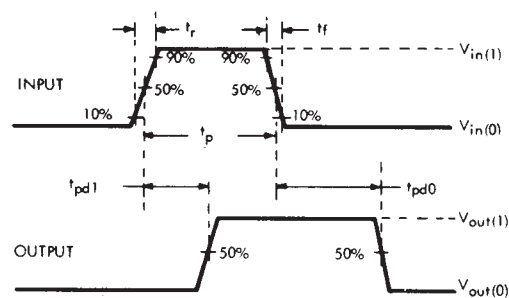
# 5706 QUAD PERIPHERAL/POWER DRIVER

## RECOMMENDED OPERATING CONDITIONS

	Min.	Nom.	Max.	Units
Supply Voltage ( $V_{CC}$ )	4.75	5.0	5.25	V
Operating Temperature Range	-40	+25	+85	°C
Current into any output (ON state)	—	—	300	mA



Dwg. No. A-7878A



Dwg. No. A-7628C

## INPUT TEST PULSE CHARACTERISTICS

$$V_{IN(0)} = 0 \text{ V}$$

$$t_f = 7 \text{ ns}$$

$$t_p = 1 \mu\text{s}$$

$$V_{IN(1)} = 3.5 \text{ V}$$

$$t_r = 14 \text{ ns}$$

$$\text{PRR} = 500 \text{ kHz}$$

# 5706

## QUAD PERIPHERAL/POWER DRIVER

### ELECTRICAL CHARACTERISTICS over operating temperature range (unless otherwise noted).

Characteristic	Symbol	Test Conditions					Limits				Notes
		Temp.	V <sub>CC</sub>	Driven Input	Other Input	Output	Min.	Typ.	Max.	Units	
"1" Output Reverse Current	I <sub>OFF</sub>	—	MIN	2.0 V	2.0 V	80 V	—	—	100	μA	—
		—	OPEN	2.0 V	2.0 V	80 V	—	—	100	μA	—
"0" Output Voltage	V <sub>ON</sub>	—	MIN	0.8 V	V <sub>CC</sub>	150 mA	—	0.35	0.5	V	—
		—	MIN	0.8 V	V <sub>CC</sub>	300 mA	—	0.5	0.7	V	—
"1" Input Voltage	V <sub>IN(1)</sub>	—	MIN	—	—	—	2.0	—	—	V	—
"0" Input Voltage	V <sub>IN(0)</sub>	—	MIN	—	—	—	—	—	0.8	V	—
"0" Input Current	I <sub>IN(0)</sub>	—	MAX	0.4 V	30 V	—	—	-50	-100	μA	2
"1" Input Current	I <sub>IN(1)</sub>	—	MAX	30 V	0 V	—	—	—	10	μA	2
Input Clamp Voltage	V <sub>LK</sub>	—	MIN	-12 mA	—	—	—	—	-1.5	V	—
Diode Leakage Current	I <sub>R</sub>	NOM	NOM	0 V	0 V	OPEN	—	—	200	μA	3
Diode Forward Voltage Drop	V <sub>F</sub>	NOM	NOM	V <sub>CC</sub>	V <sub>CC</sub>	—	—	1.5	1.75	V	4
"1" Level Supply Current	I <sub>CC(1)</sub>	NOM	MAX	5.0 V	5.0 V	—	—	16	24	mA	5
"0" Level Supply Current	I <sub>CC(0)</sub>	NOM	MAX	0 V	0 V	—	—	70	98	mA	5

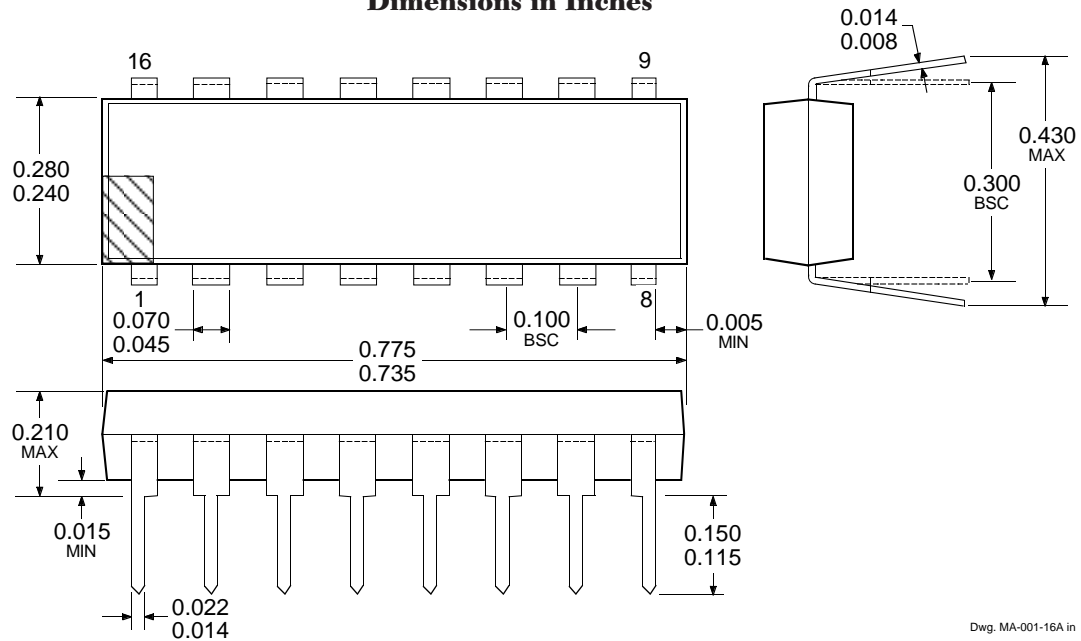
### SWITCHING CHARACTERISTICS at V<sub>CC</sub> = 5.0 V, T<sub>A</sub> = 25°C

Characteristic	Symbol	Test Conditions	Limits			Notes
			Min.	Typ.	Max.	
Turn-on Delay Time	t <sub>pd0</sub>	V <sub>S</sub> = 70 V, R <sub>L</sub> = 465 Ω (10 Watts), C <sub>L</sub> = 15 pF (including probe and test fixture)	—	200	—	ns
Turn-off Delay Time	t <sub>pd1</sub>	V <sub>S</sub> = 70 V, R <sub>L</sub> = 465 Ω (10 Watts), C <sub>L</sub> = 15 pF (including probe and test fixture)	—	300	—	ns

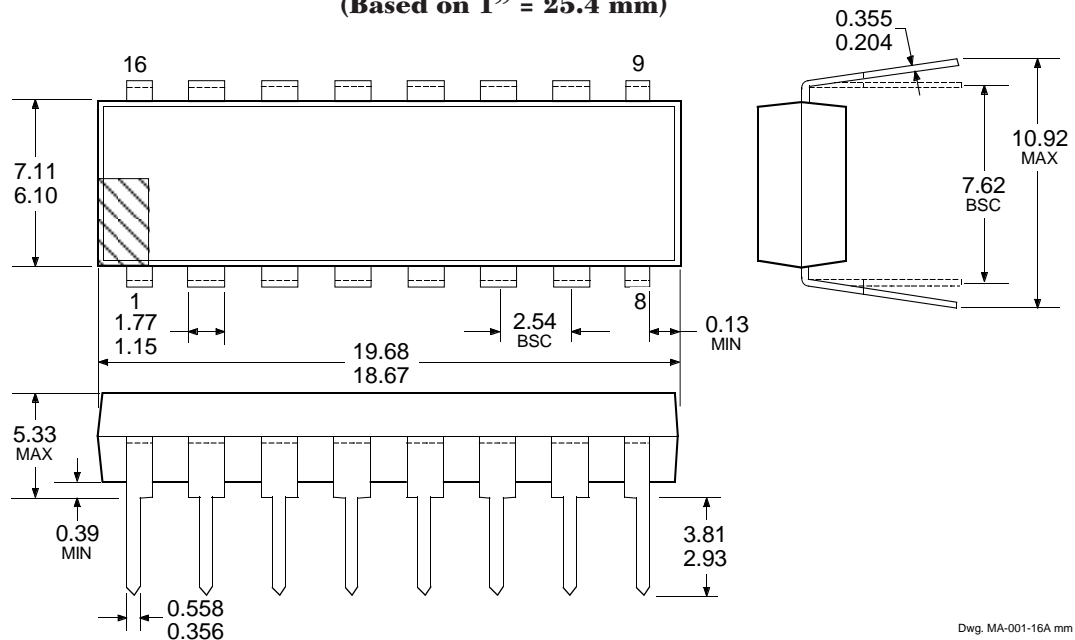
- NOTES: 1. Typical values are at V<sub>CC</sub> = 5.0 V, T<sub>A</sub> = 25°C.  
 2. Each input tested separately.  
 3. Diode leakage current measured at V<sub>R</sub> = V<sub>off (min)</sub>.  
 4. Diode forward voltage drop measured at I<sub>F</sub> = 300 mA.  
 5. Per package.

# 5706 QUAD PERIPHERAL/POWER DRIVER

## Dimensions in Inches



## Dimensions in Millimeters (Based on 1" = 25.4 mm)



- NOTES:
1. Lead thickness is measured at seating plane or below.
  2. Lead spacing tolerance is non-cumulative.
  3. Exact body and lead configuration at vendor's option within limits shown.

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