

EXPANDABLE DUAL 4-INPUT
POWER GATE

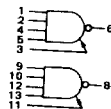
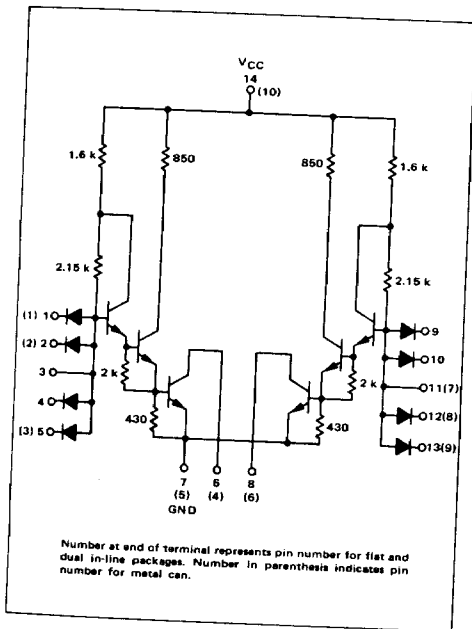
MC944F • MC844F, P

EXPANDABLE DUAL 3-2 INPUT
POWER GATE

MC944G • MC844G

MDTL MC930/830 series

The MC944/MC844 is a dual NAND power gate with an output transistor capable of sinking more current than standard gate elements. It is useful as a high fan-out gate (with an external pull-up resistor), and as a line, relay, or lamp driver. Each output of the MC944/MC844 is capable of sinking up to 100 mA individually (90 mA if both outputs are conducting simultaneously) provided that temperature extremes are limited to 0°C to +100°C for MC944, and +15°C to +55°C for MC844. The typical breakdown voltage of the output transistor is greater than 12 V.



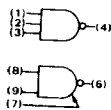
MC944F/MC844F, P

Positive Logic:

$$6 = \overline{1 \cdot 2 \cdot 4 \cdot 5} \cdot [3]$$

Negative Logic:

$$6 = \overline{1 \cdot 2 \cdot 4 + 5} \cdot [3]$$



MC944G/MC844G

Positive Logic: $4 = \overline{1 \cdot 2 \cdot 3}$

Negative Logic: $4 = \overline{1 \cdot 2 + 3}$

Input Loading Factor = 1
Output Loading Factor = 27

Total Power

Dissipation:

	MC944
	MC844
Inputs Low	12 mW
Inputs High	64 mW
50% Duty Cycle	38 mW

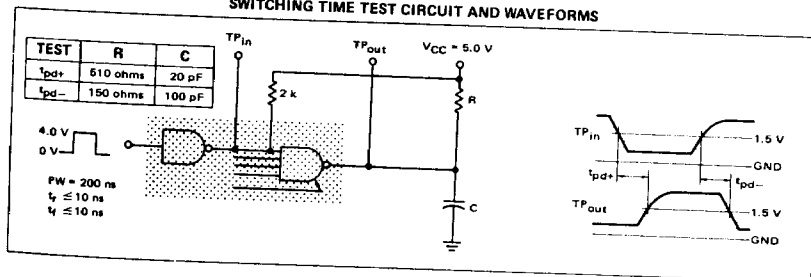
Propagation Delay Time = 30 ns typ

OPERATING RULES

- The outputs of the Dual Power Gate may be tied together to perform the wired-collector OR function.
- An external load resistor should be utilized with the Dual Power Gate. At $V_{CC} = 5.0 \pm 0.5$ V, subtract the following output loads:

R	
2 kΩ	- 2 loads
1 kΩ	- 4 loads
510 Ω	- 8 loads
- For increased current capability, the inputs and outputs of ½MC944 and ½MC932 can be paralleled (up to and including 4 common outputs). The combined output will equal 100 loads while each combined input will equal 4 loads.

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



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PRODUCT DOCUMENTATION

The three documents listed in the following table are required for a complete description of the DSP56301 and are necessary to design properly with the part. Documentation is available from one of the following locations (see back cover for detailed information):

- A local Motorola distributor
- A Motorola semiconductor sales office
- A Motorola Literature Distribution Center
- The World Wide Web (WWW)

See the **Additional Support** section of the *DSP56300 Family Manual* for detailed information on the multiple support options available to you.

Table 1 DSP56301 Documentation

Name	Description	Order Number
DSP56300 Family Manual	Detailed description of the DSP56300 family processor core and instruction set	DSP56300FM/AD
DSP56301 User's Manual	Detailed functional description of the DSP56301 memory configuration, operation, and register programming	DSP56301UM/AD
DSP56301 Technical Data	DSP56301 features list and physical, electrical, timing, and package specifications	DSP56301/D

