



**MOTOROLA**

Product Preview

# 28-Channel Inkjet Driver

The MC34156 is a 28-Channel Decoder/Driver intended to be used in inkjet printer applications. By using sophisticated SMARTMOS™ technology, it has been possible to combine low power CMOS inputs and logic and high current, high voltage bipolar outputs capable of sustaining a maximum of 30 V.

A 4-to-14 line decoder determines the selected output driver (n) in each 14-driver bank. Two independent output enable inputs (active low) then provide the final decoding to activate 1- or 2-of-28 outputs (OUT<sub>AN</sub> and/or OUT<sub>BN</sub>). The ac electrical characteristics of the drivers are tightly controlled and thereby the energy of the device delivers to the inkjet print head. A Chip Enable function is provided to lock out the drivers during system power up. The 28 bipolar power outputs are open collector 30 V Darlington drivers capable of sinking 500 mA at ambient temperatures up to 70°C. All driver outputs are capable of withstanding a contact discharge of ±8.0 kV with the IC biased.

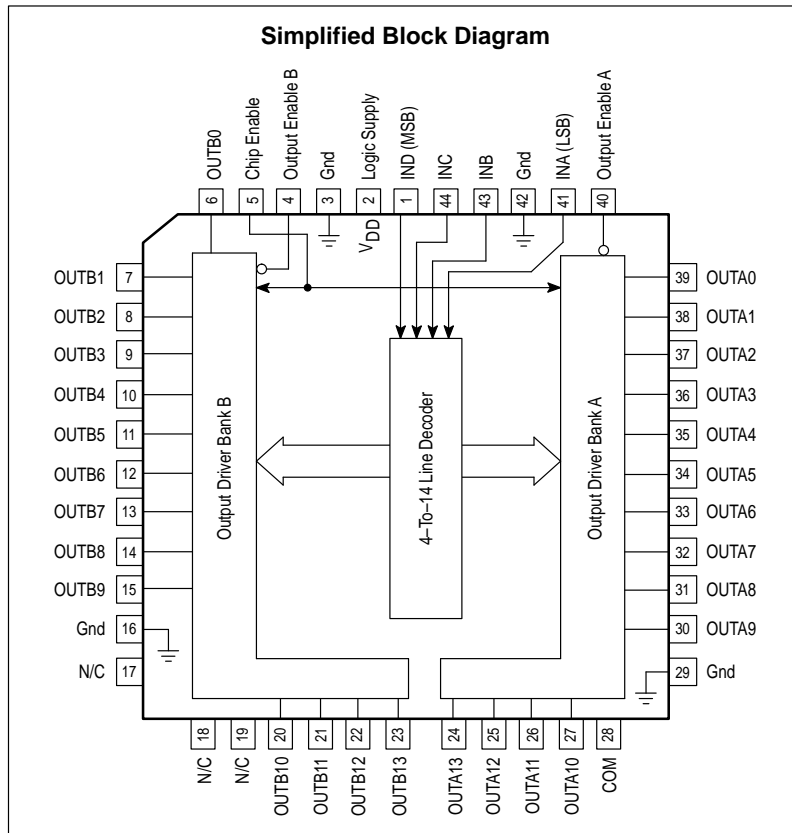
- ESD Output Protection with Clamping Diodes
- Addressable Data Entry
- Tightly Controlled AC and Electrical Characteristics for Inkjet Printers
- CMOS, TTL Compatible Inputs
- Low Power CMOS Logic

SMARTMOS is a trademark of Motorola, Inc.

## ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC34156FN	T <sub>A</sub> = 0° to +70°C	Plastic Package

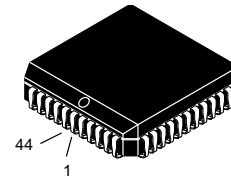
## Simplified Block Diagram



# MC34156

## 28-CHANNEL INKJET DRIVER (SMARTMOS™ Technology)

### SEMICONDUCTOR TECHNICAL DATA



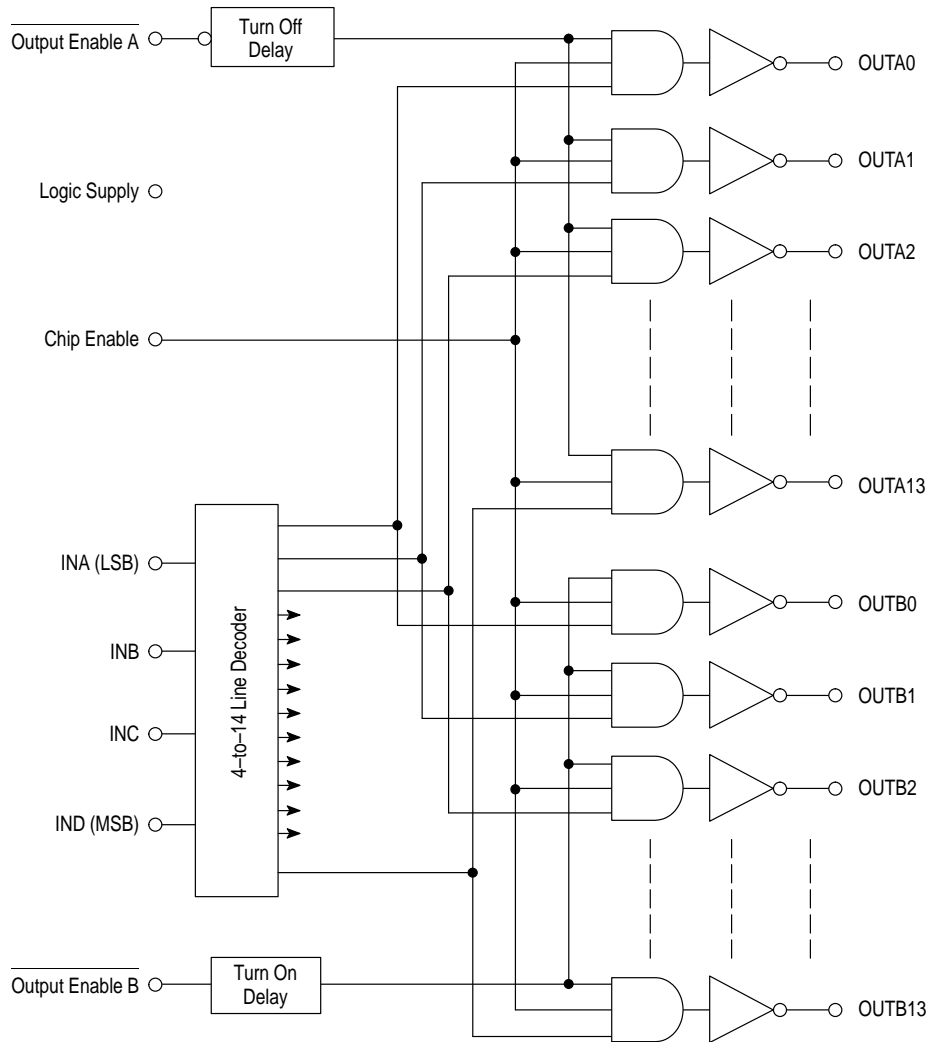
**FN SUFFIX**  
PLASTIC PACKAGE  
CASE 777

## PIN ASSIGNMENTS

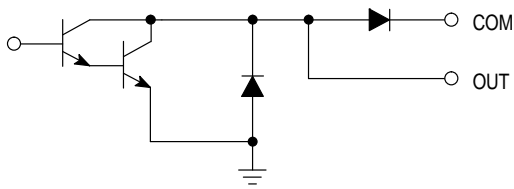
Pin No.	Pin Name	Pin Description
1	IND	4th Decoder Input
2	V <sub>DD</sub>	Power Supply
3	Gnd	Ground
4	ENB	Enable Pin for B Set Drivers
5	Chip Enable	Chip Enable
6	OUTB0	B Set 1st Driver
7	OUTB1	B Set 2nd Driver
8	OUTB2	B Set 3rd Driver
9	OUTB3	B Set 4th Driver
10	OUTB4	B Set 5th Driver
11	OUTB5	B Set 6th Driver
12	OUTB6	B Set 7th Driver
13	OUTB7	B Set 8th Driver
14	OUTB8	B Set 9th Driver
15	OUTB9	B Set 10th Driver
16	Gnd	Ground
17	N/C	Not Connected
18	N/C	Not Connected
19	N/C	Not Connected
20	OUTB10	B Set 11th Driver
21	OUTB11	B Set 12th Driver
22	OUTB12	B Set 13th Driver
23	OUTB13	B Set 14th Driver
24	OUTA13	A Set 14th Driver
25	OUTA12	A Set 13th Driver
26	OUTA11	A Set 12th Driver
27	OUTA10	A Set 11th Driver
28	COM	Common
29	Gnd	Ground
30	OUTA9	A Set 10th Driver
31	OUTA8	A Set 9th Driver
32	OUTA7	A Set 8th Driver
33	OUTA6	A Set 7th Driver
34	OUTA5	A Set 6th Driver
35	OUTA4	A Set 5th Driver
36	OUTA3	A Set 4th Driver
37	OUTA2	A Set 3rd Driver
38	OUTA1	A Set 2nd Driver
39	OUTA0	A Set 1st Driver
40	ENA	Enable Pin for A Set Drivers
41	INA	1st Decoder Input
42	Gnd	Ground
43	INB	2nd Decoder Input
44	INC	3rd Decoder Input

# MC34156

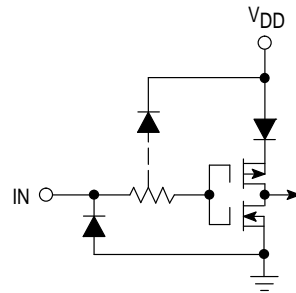
**Figure 1. Functional Block Diagram**



**Figure 2. Output Driver Configuration**

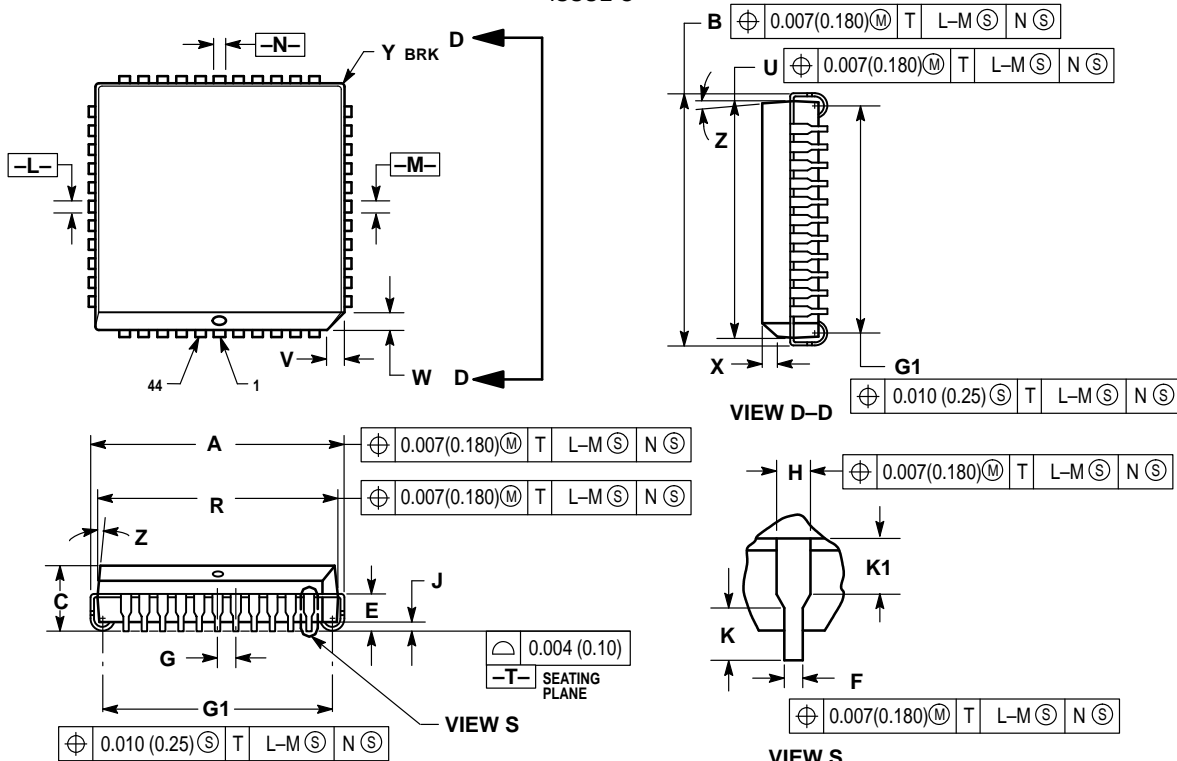


**Figure 3. Typical Input Circuit**



OUTLINE DIMENSIONS

FN SUFFIX  
PLASTIC PACKAGE  
CASE 777-02  
ISSUE C



NOTES:

1. DATUMS -L-, -M-, AND -N- ARE DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
2. DIMENSION G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
3. DIMENSIONS R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.25) PER SIDE.
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
5. CONTROLLING DIMENSION: INCH.
6. THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
7. DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.685	0.695	17.40	17.65
B	0.685	0.695	17.40	17.65
C	0.165	0.180	4.20	4.57
E	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050 BSC		1.27 BSC	
H	0.026	0.032	0.66	0.81
J	0.020	—	0.51	—
K	0.025	—	0.64	—
R	0.650	0.656	16.51	16.66
U	0.650	0.656	16.51	16.66
V	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
X	0.042	0.056	1.07	1.42
Y	—	0.020	—	0.50
Z	2°	10°	2°	10°
G1	0.610	0.630	15.50	16.00
K1	0.040	—	1.02	—

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447 or 602-303-5454

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-81-3521-8315

MFAX: RMFAX0@email.sps.mot.com - TOUCHTONE 602-244-6609  
INTERNET: http://Design-NET.com

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

