F-P ELECTRONICS

FP2800A Decoder Driver

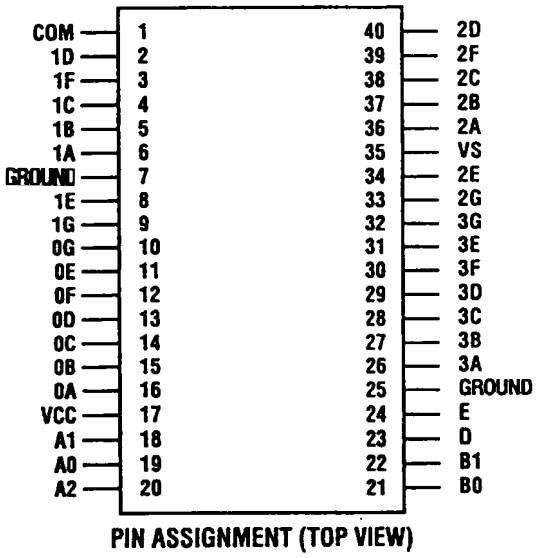
The **FP2800A Decoder Driver** is a 40 pin integrated circuit which provides the decoding to select one of 28 high current driver outputs for sinking and sourcing current. A complementary driver is available for bridge output applications. The CMOS compatible data inputs are grouped to allow one of four 7-segment displays to be addressed. A DATA pin sets the output to source or sink mode and the output is activated for the duration of an ENABLE signal.

FEATURES:

- Operates up to 27.3 volts D.C.
- Source and sink up to 370 mA
- Low saturation devices
- Internal clamping diodes for inductive loads
- Microprocessor compatible inputs

APPLICATIONS:

- Driving 1" (25mm) 7 segment modules for gas pump readouts
- Driving 1" (25mm) 7 segment modules and 35 disk matrix XY5 series modules in panel configurations
- Driving 1" (25mm) 7 segment modules for parking meter readouts
- Driving 1" (25mm) 7 segment modules. 35 disk matrix XY5, and 35 disk matrix XY7 series modules for general pricing and general message applications



PIN ASSIGNMENT (TOP VIEW)

RECOMMENDED OPERATING CONDITIONS				
	MIN	NORMAL	MAX	UNITS
Logic supply voltage, V_{cc}	4.5	5	5.5	V
Power supply voltage, V_s		26	27.5	V
Power supply current, I_s		350	370	mA
Operating temperature range	-40		80	°C
Duty cycle of the circuit, at 80°C , at 25°C			25 50	% %
Operating Frequency	5			Hz

ABSOLUTE MAXIMUM RATINGS		
Logic supply voltage	V_{cc}	7V
Input voltage	VIN	6V
Power supply voltage	V_s	30V
Power supply current	I_s	500mA
Operating temperature	TA	-40°C to 80°C

ELECTRICAL CHARACTERISTICS OVER RECOMMENDED OPERATING TEMPERATURE RANGE

	TEST CONDITION	MIN	TYP.	MAX	UNITS
V_{ih} High Level Input Voltage	V_{cc} = 5V	2			V
V_{il} Low Level Input Voltage	V_{cc} = 5V			0.8	V
I_{ih} High Level Input Current	V_{cc} = 5V V_{ih} = 5V			1	uA
I_{il} Low Level Input Enable (E) Input Other Inputs	V_{cc} = 5V V_{il} = 0V		1 46	-10 -60	uA uA
I_{cc} Logic Current	V_{cc} = 5V	2.0	6.6	10	mA
I_{ss} Off State Driver Power Supply Current	V_s = 26V E = 0V			1	mA
I_{os} Output Leakage	V_s = 27.5V, E = 0V All output shorted to V_s = 26			1.0	mA
VSAT Output Saturation Voltage	I_s = 350mA Source Trans. Sink Trans.			3.0 2.0	V

SWITCHING CHARACTERISTICS	MAX.	UNITS
t ON Turn On Time for any Output See Fig 3	50	USEC
t OFF Turn Off Time for any Output See Fig 3	150	USEC
t SE Output Select Time See Fig 2	50	USEC

ENABLE E	INPUTS					COM. OCOM	OUTPUTS																													
	DIGIT		SEGMENT				DIGIT 0							DIGIT 1							DIGIT 2							DIGIT 3								
	B_1	B_0	A_2	A_1	A_0		Q_{0A}	Q_{0B}	Q_{0C}	Q_{0D}	Q_{0E}	Q_{0F}	Q_{0G}	Q_{1A}	Q_{1B}	Q_{1C}	Q_{1D}	Q_{1E}	Q_{1F}	Q_{1G}	Q_{2A}	Q_{2B}	Q_{2C}	Q_{2D}	Q_{2E}	Q_{2F}	Q_{2G}	Q_{3A}	Q_{3B}	Q_{3C}	Q_{3D}	Q_{3E}	Q_{3F}	Q_{3G}		
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FP2800A TRUTH TABLE

SYSTEM TIMING

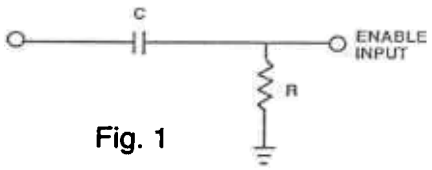

Fig. 1

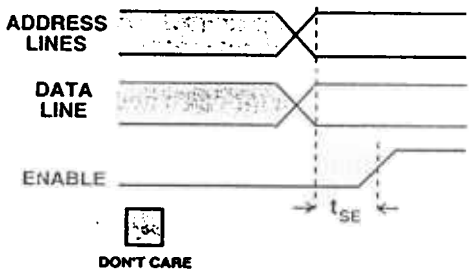

Fig. 2 Output Select Time

For protection of the display if the microprocessor should fail, it is possible to AC couple the enable input. For a 2 to 24 MS (max) ON time: R= 22 kΩ
C= 0.22 uf

The RC network should only be used as a safeguard against failure of the microprocessor. Under normal operating conditions the Enable pulse length should be determined by the microprocessor.

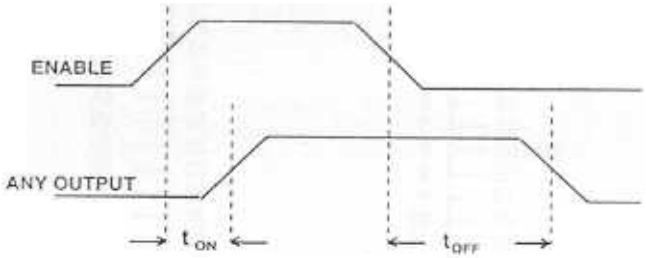

Fig. 3 Timing Waveforms

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