

M81711FP

GENERAL PURPOSE DRIVER

DESCRIPTION

M81711FP is a dual inverter type general purpose driver by 24V rating voltage.

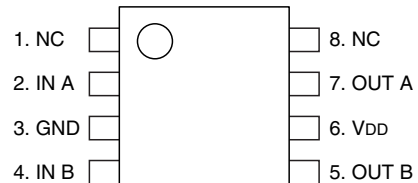
FEATURES

- RATING VOLTAGE 24V
- OUTPUT CURRENT +0.8A, -0.6A
- POWER-SUPPLY RANGE OF OPERATION ... 4.5V ~ 24V
(RECOMMENDATION POWER SUPPLY RANGE : 4.5V ~ 17V)
- HIGH-SPEED SWITCHING TIME
(22ns typ, CL = 1000pF)
- DUAL INVERTER
- TTL/CMOS Combatibl
(V_{IH} = 2.8V or more, at V_{DD} = 4.5V ~ 9V)
(V_{IH} = 4.4V or more, at V_{DD} = 4.5V ~ 15V)
- SOP-8 PACKAGE

APPLICATIONS

PDP electrical discharge maintenance drive, motor drive, switching power supply, DC/DC converter and general purpose driver.

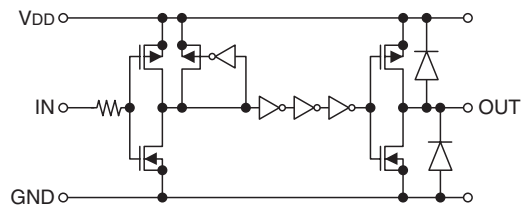
PIN CONFIGURATION (TOP VIEW)



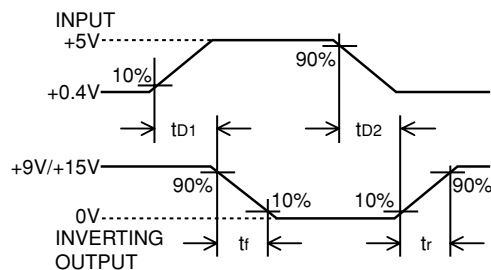
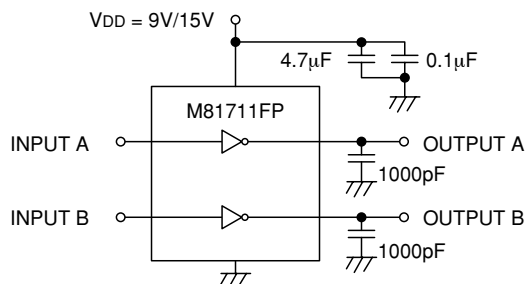
NC:NO CONNECTION

Outline:8P2S

BLOCK DIAGRAM



SWITCHING TIME EXAMINATION CIRCUIT DIAGRAM



※ INPUT
RISE AND FALL
TIMES = 5ns

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C unless otherwise specified)

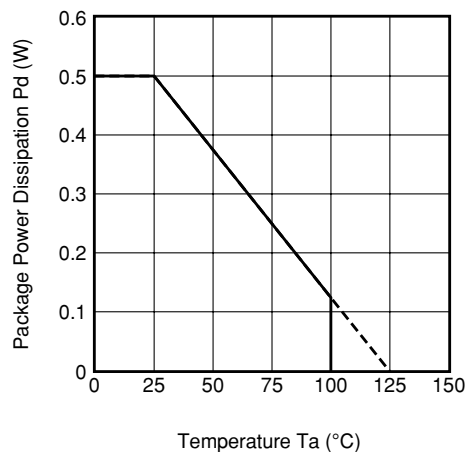
Symbol	Parameter	Test conditions	Ratings			Unit
			Min.	Typ.	Max.	
VDD	Supply Voltage	VDD Terminal	0	—	24	V
VIN	Logic Input Voltage	IN A/B Terminal	GND-0.3	—	VDD+0.3	V
Pd	Package Power Dissipation	VDD, OUT A/B Terminal	—	0.5	—	W
Tj	Junction Temperature		-40	—	125	°C
Tstg	Storage Temperature		-40	—	125	°C

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VDD	Supply Voltage	VDD Terminal	4.5	—	17	V
VIN	Logic Input Voltage	IN A/B Terminal	GND	—	VDD	V
Topr	Operation Temperature		-40	—	100	°C

* For proper operation, the device should be used within the recommended conditions.

THERMAL DERATING FACTOR CHARACTERISTIC (MAXIMUM RATING)



ELECTRICAL CHARACTERISTICS (AC characteristic ; $V_{IN} = 0V, 5V$)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.*	Max.	
t_r	Turn-On Rise Time	$V_{DD} = 15V, CL = 1000pF$	—	35	70	ns
		$V_{DD} = 9V, CL = 1000pF$	—	40	80	ns
t_f	Turn-Off Fall Time	$V_{DD} = 15V, CL = 1000pF$	—	25	50	ns
		$V_{DD} = 9V, CL = 1000pF$	—	30	60	ns
t_{D1}	Delay Time1	$V_{DD} = 15V, CL = 1000pF$	—	22	45	ns
		$V_{DD} = 9V, CL = 1000pF$	—	25	50	ns
t_{D2}	Delay Time2	$V_{DD} = 15V, CL = 1000pF$	—	22	45	ns
		$V_{DD} = 9V, CL = 1000pF$	—	25	50	ns

* Typ. is not specified.

ELECTRICAL CHARACTERISTICS (DC characteristic ; $V_{DD} = 4.5V \sim 17V$)

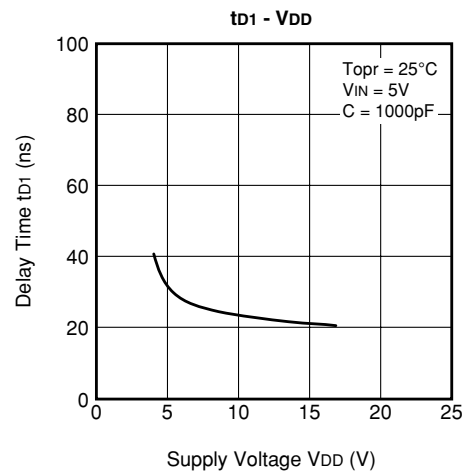
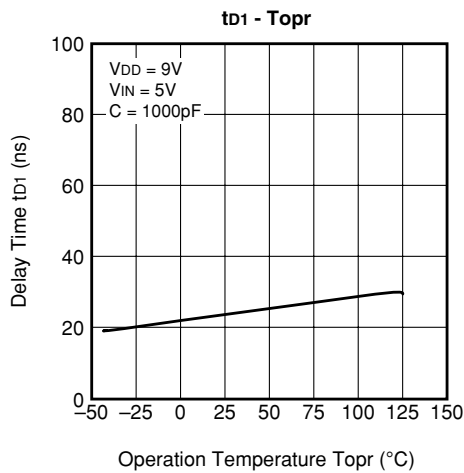
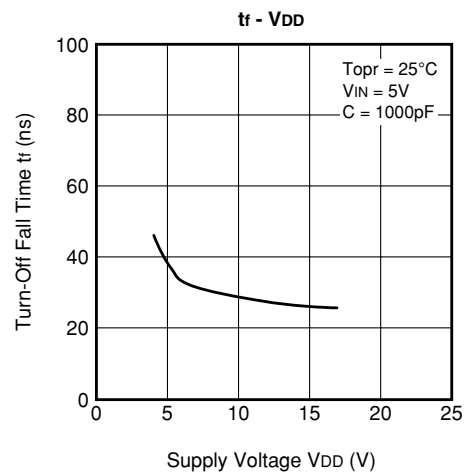
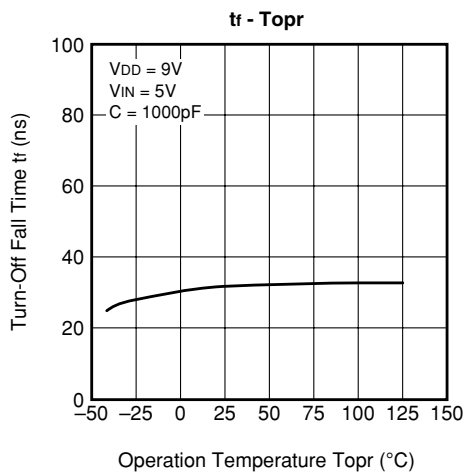
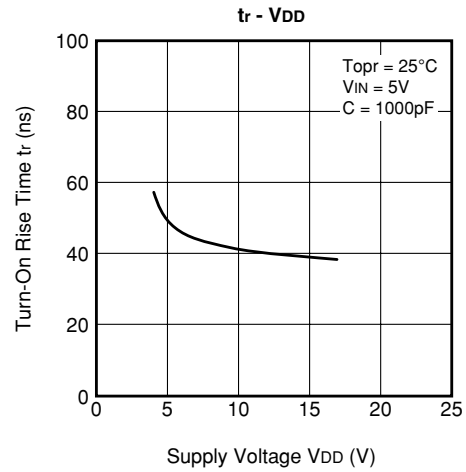
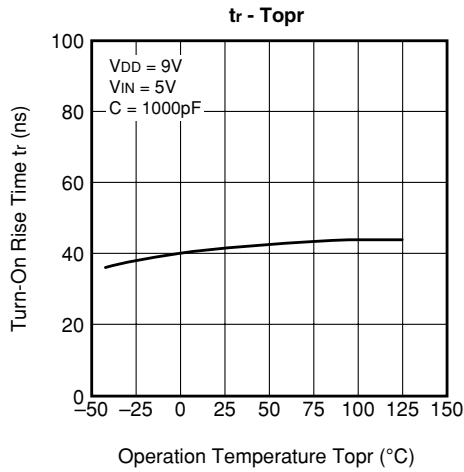
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.*	Max.	
V_{IH}	High Level Input Threshold Voltage	$V_{DD} = 15V$	4.4	—	—	V
		$V_{DD} = 9V$	2.8	—	—	V
V_{IL}	Low Level Input Threshold Voltage	$V_{DD} = 15V$	—	—	1.8	V
		$V_{DD} = 9V$	—	—	1.0	V
I_{IN}	Input Bias Current	$V_{IN} = 0V$ or V_{DD}	-1	—	1	μA
V_{OH}	High Level Output Voltage	$I_O = 0A$	$V_{DD}-0.1$	—	—	V
V_{OL}	Low Level Output Voltage	$I_O = 0A$	—	—	0.1	V
I_{supp}	V_{DD} Supply Current	$V_{DD} = 15V$ $V_{IN} = 5V$ (both inputs)	—	4.0	8.0	mA
		$V_{DD} = 15V$ $V_{IN} = 0V$ (both inputs)	—	—	0.5	mA
		$V_{DD} = 9V$ $V_{IN} = 3V$ (both inputs)	—	1.0	4.5	mA
		$V_{DD} = 9V$ $V_{IN} = 0V$ (both inputs)	—	—	0.2	mA
I_{OH}	Output High Level Short Circuit Pulsed Current	$V_{DD} = 15V, PW \leq 10\mu s, V_{OUT} = 0V$	0.80	1.00	—	A
		$V_{DD} = 9V, PW \leq 10\mu s, V_{OUT} = 0V$	0.38	0.45	—	A
I_{OL}	Output Low Level Short Circuit Pulsed Current	$V_{DD} = 15V, PW \leq 10\mu s, V_{OUT} = 15V$	0.60	0.80	—	A
		$V_{DD} = 9V, PW \leq 10\mu s, V_{OUT} = 9V$	0.34	0.40	—	A
R_{OUT}	Output On Resistance	$V_{DD} = 15V$ $I_{load} = 10mA, V_{OUT} = "H"$	—	7	12	Ω
		$V_{DD} = 15V$ $I_{load} = 10mA, V_{OUT} = "L"$	—	6	11	Ω
		$V_{DD} = 9V$ $I_{load} = 10mA, V_{OUT} = "H"$	—	9	14	Ω
		$V_{DD} = 9V$ $I_{load} = 10mA, V_{OUT} = "L"$	—	7	12	Ω

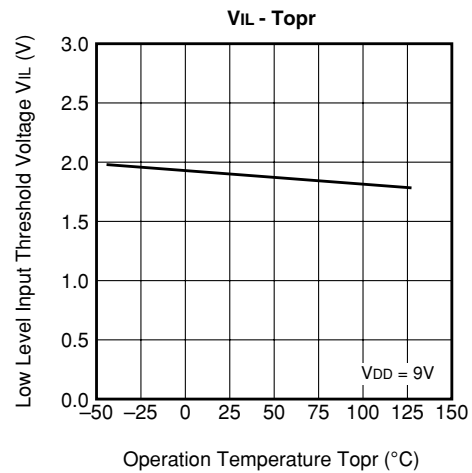
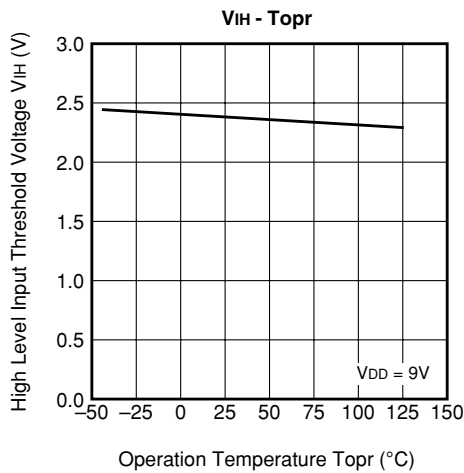
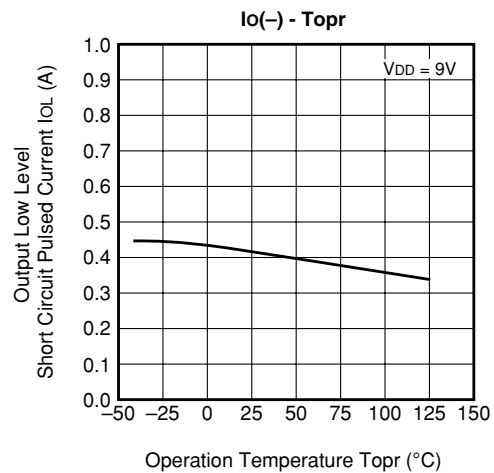
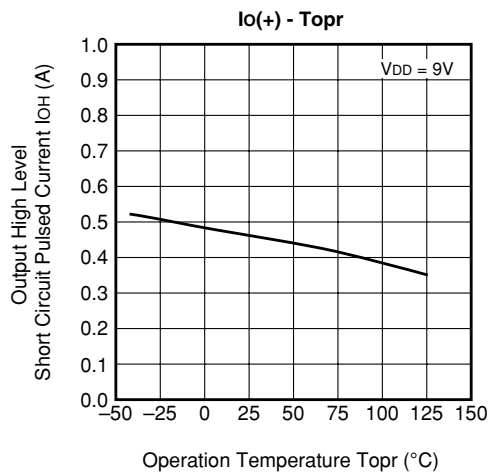
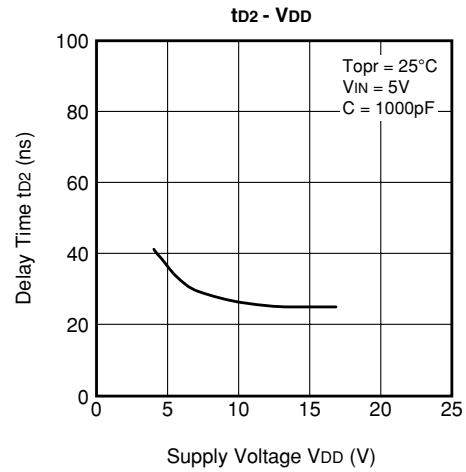
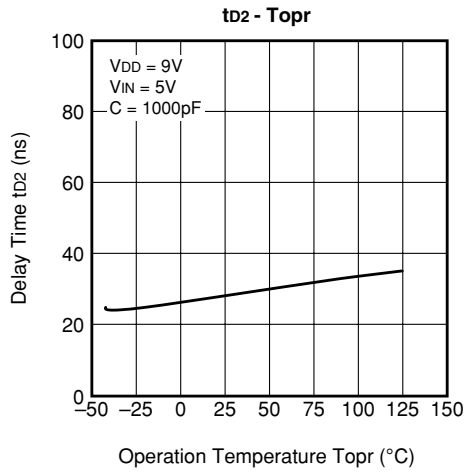
* Typ. is not specified.

PW : Input Pulse Wide

 I_{load} : Supply input-and-output current to the OUT A/B terminal

PERFORMANCE CURVES



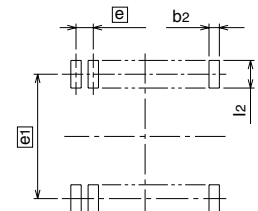
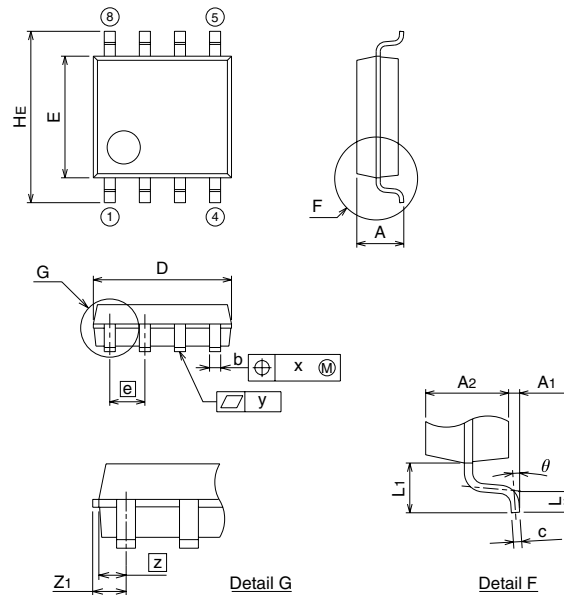


PACKAGE OUTLINE**8P2S-A**

(MMP)

Plastic 8pin 225mil SOP

EIAJ Package Code	JEDEC Code	Weight(g)	Lead Material
SOP8-P-225-1.27	—	0.07	Cu Alloy



Recommended Mount Pad

Symbol	Dimension in Millimeters		
	Min	Nom	Max
A	—	—	1.9
A1	0.05	—	—
A2	—	1.5	—
b	0.35	0.4	0.5
c	0.13	0.15	0.2
D	4.8	5.0	5.2
E	4.2	4.4	4.6
[e]	—	1.27	—
HE	5.9	6.2	6.5
L	0.2	0.4	0.6
L1	—	0.9	—
[Z]	—	0.595	—
Z1	—	—	0.745
x	—	—	0.25
y	—	—	0.1
θ	0°	—	10°
b2	—	0.76	—
[e1]	—	5.72	—
l2	1.27	—	—