

# M81711FP

GENERAL PURPOSE DRIVER

## DESCRIPTION

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

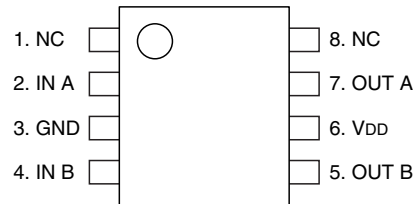
## FEATURES

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

## APPLICATIONS

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

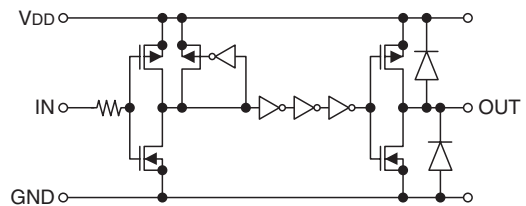
## PIN CONFIGURATION (TOP VIEW)



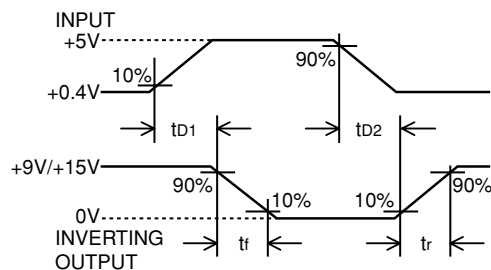
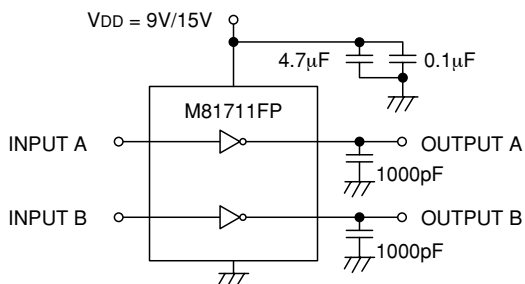
NC:NO CONNECTION

Outline:8P2S

## BLOCK DIAGRAM



## SWITCHING TIME EXAMINATION CIRCUIT DIAGRAM



※ INPUT  
RISE AND FALL  
TIMES = 5ns

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

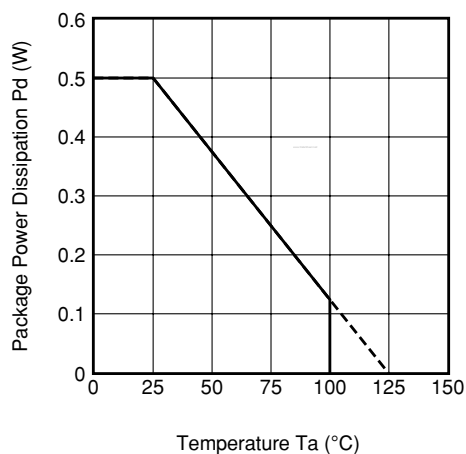
Symbol	Parameter	Test conditions	Ratings			Unit
			Min.	Typ.	Max.	
VDD	Supply Voltage	VDD Terminal	0	—	24	V
VIN	Logic Input Voltage	IN A/B Terminal	GND-0.3	—	VDD+0.3	V
Pd	Package Power Dissipation	VDD, OUT A/B Terminal	—	0.5	—	W
Tj	Junction Temperature		-40	—	125	°C
Tstg	Storage Temperature		-40	—	125	°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.	
tr	Turn-On Rise Time	$V_{DD} = 15V, CL = 1000pF$	—	35	70	ns
		$V_{DD} = 9V, CL = 1000pF$	—	40	80	ns
tf	Turn-Off Fall Time	$V_{DD} = 15V, CL = 1000pF$	—	25	50	ns
		$V_{DD} = 9V, CL = 1000pF$	—	30	60	ns
td1	Delay Time1	$V_{DD} = 15V, CL = 1000pF$	—	22	45	ns
		$V_{DD} = 9V, CL = 1000pF$	—	25	50	ns
td2	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 ;  $V_{DD} = 4.5V \sim 17V$ )**

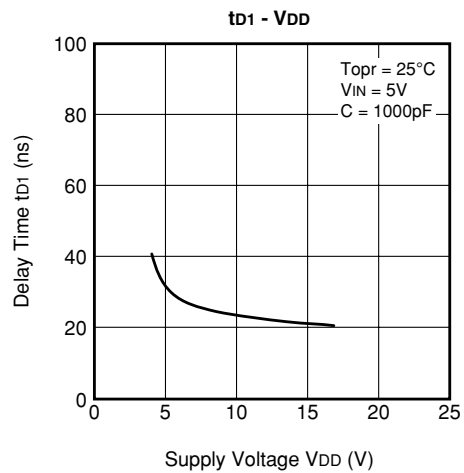
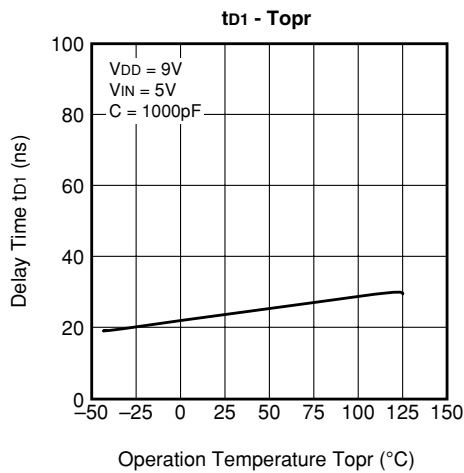
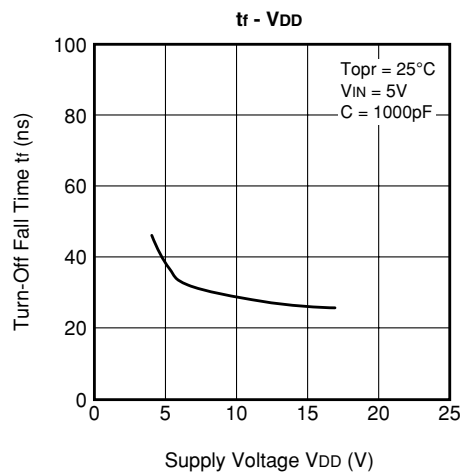
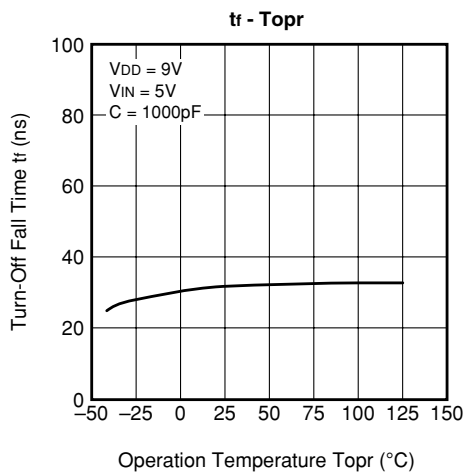
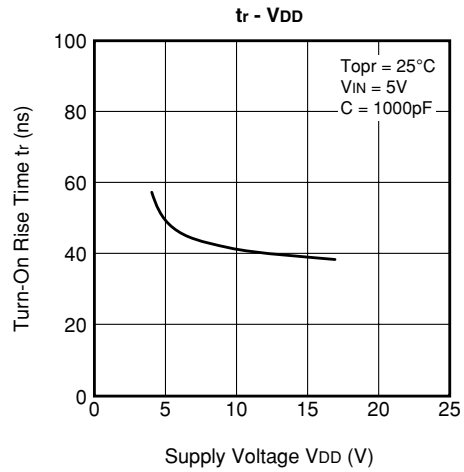
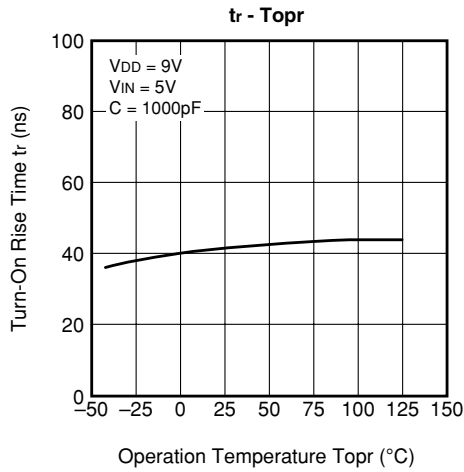
Symbol	Parameter	Test conditions	Limits			Unit	
			Min.	Typ.*	Max.		
VIH	High Level Input Threshold Voltage	$V_{DD} = 15V$	4.4	—	—	V	
		$V_{DD} = 9V$	2.8	—	—	V	
VIL	Low Level Input Threshold Voltage	$V_{DD} = 15V$	—	—	1.8	V	
		$V_{DD} = 9V$	—	—	1.0	V	
IIN	Input Bias Current	$V_{IN} = 0V$ or $V_{DD}$	-1	—	1	$\mu A$	
VOH	High Level Output Voltage	$I_O = 0A$	$V_{DD}-0.1$	—	—	V	
VOL	Low Level Output Voltage	$I_O = 0A$	—	—	0.1	V	
Issup	$V_{DD}$ Supply Current	$V_{DD} = 15V$	$V_{IN} = 5V$ (both inputs)	—	4.0	8.0	mA
			$V_{IN} = 0V$ (both inputs)	—	—	0.5	mA
		$V_{DD} = 9V$	$V_{IN} = 3V$ (both inputs)	—	1.0	4.5	mA
			$V_{IN} = 0V$ (both inputs)	—	—	0.2	mA
IOH	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	
IOL	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	
ROUT	Output On Resistance	$V_{DD} = 15V$	load = 10mA, $V_{OUT} = "H"$	—	7	12	$\Omega$
			load = 10mA, $V_{OUT} = "L"$	—	6	11	$\Omega$
		$V_{DD} = 9V$	load = 10mA, $V_{OUT} = "H"$	—	9	14	$\Omega$
			load = 10mA, $V_{OUT} = "L"$	—	7	12	$\Omega$

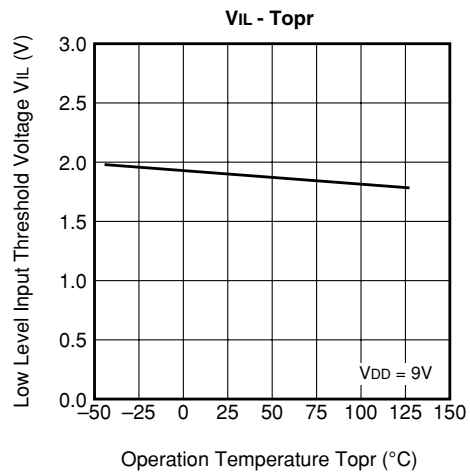
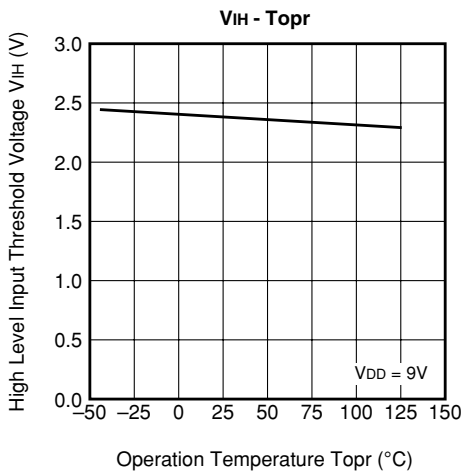
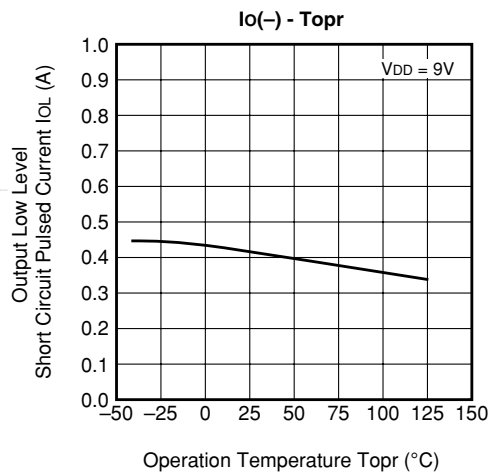
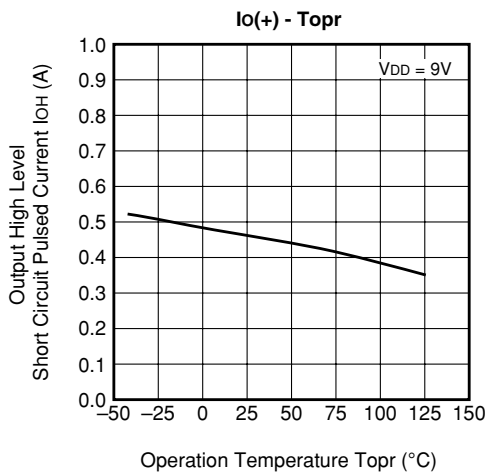
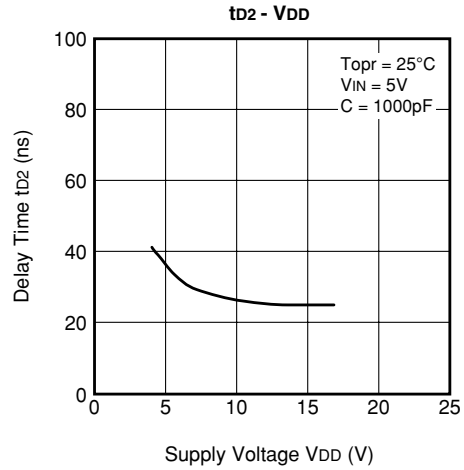
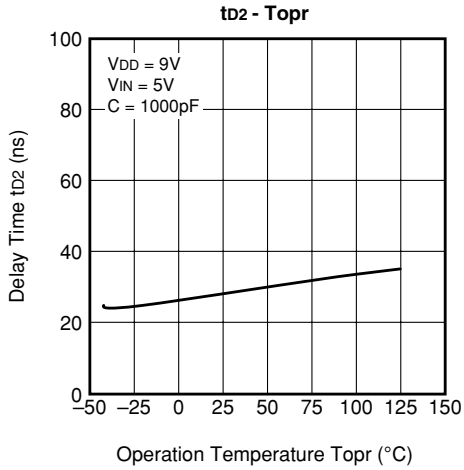
\* Typ. is not specified.

PW : Input Pulse Wide

Iload : Supply input-and-output current to the OUT A/B terminal

PERFORMANCE CURVES





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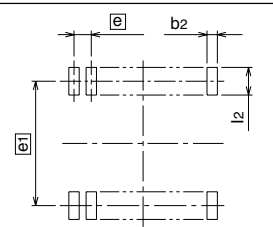
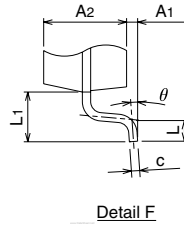
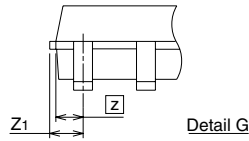
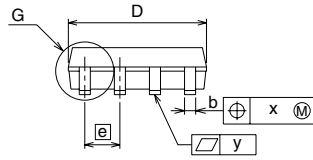
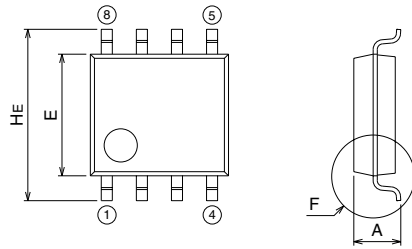
### PACKAGE OUTLINE

#### 8P2S-A

(MMP)

Plastic 8pin 225mil SOP

EIAJ Package Code SOP8-P-225-1.27	JEDEC Code -	Weight(g) 0.07	Lead Material Cu Alloy
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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
e1	-	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
theta	0°	-	10°
b2	-	0.76	-
e1	-	5.72	-
l2	1.27	-	-