

MTM68411

Silicon P-channel MOS FET

For load switch circuits

For switching circuits

Overview

MTM68411 is the low ON resistance dual P-channel MOS FET designed for load switch circuits.

Features

- Dual P-channel MOS FET in one package
- Low ON resistance: $R_{on} = 23 \text{ m}\Omega$ ($V_{GS} = -5.0 \text{ V}$)
- Small package and surface mounting type: WMini8-F1 (2.8 mm × 2.9 mm × 1.0 mm)
- Low drive voltage: 1.8 V drive

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	-12	V
Gate-source surrender voltage	V_{GSS}	± 8	V
Drain current	I_D	-4.8	A
Peak drain current	I_{DP}	-19	A
Power dissipation *	P_D	1.0	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *: In case of being attached to 300 mm² area or more of copper foil of a drain on a glass epoxy board (25.4 mm × 25.4 mm × 0.8 mm)

P_D absolute maximum rating without a heat sink: 400 mW

Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = -1 \text{ mA}, V_{GS} = 0$	-12			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = -10 \text{ V}, V_{GS} = 0$			-0.1	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 8 \text{ V}, V_{DS} = 0$			± 10	μA
Gate threshold voltage	V_{TH}	$I_D = -1.0 \text{ mA}, V_{DS} = -6.0 \text{ V}$	-0.30	-0.65	-1.00	V
Drain-source ON resistance 1	$R_{DS(on)1}$	$I_D = -1 \text{ A}, V_{GS} = -5.0 \text{ V}$		23	32	$\text{m}\Omega$
Drain-source ON resistance 2	$R_{DS(on)2}$	$I_D = -0.5 \text{ A}, V_{GS} = -2.5 \text{ V}$		27	40	$\text{m}\Omega$
Drain-source ON resistance 3	$R_{DS(on)3}$	$I_D = -0.2 \text{ A}, V_{GS} = -1.8 \text{ V}$		36	60	$\text{m}\Omega$
Forward transfer admittance	$ Y_{fs} $	$I_D = -1.0 \text{ A}, V_{DS} = -10 \text{ V}$	3.5			S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		1400		pF
Short-circuit output capacitance (Common source)	C_{oss}			135		pF
Reverse transfer capacitance (Common source)	C_{rss}			150		pF
Turn-on delay time *	$t_{d(on)}$	$V_{DD} = -6 \text{ V}, V_{GS} = 0 \text{ V to } -4 \text{ V}, I_D = -1 \text{ A}$		9		ns
Rise time *	t_r			11		ns
Turn-off delay time *	$t_{d(off)}$	$V_{DD} = -6 \text{ V}, V_{GS} = -4 \text{ V to } 0 \text{ V}, I_D = -1 \text{ A}$		270		ns
Fall time *	t_f			160		ns

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Test circuit

Package

Code

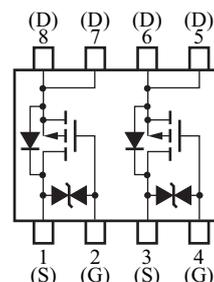
WMini8-F1

Pin Name

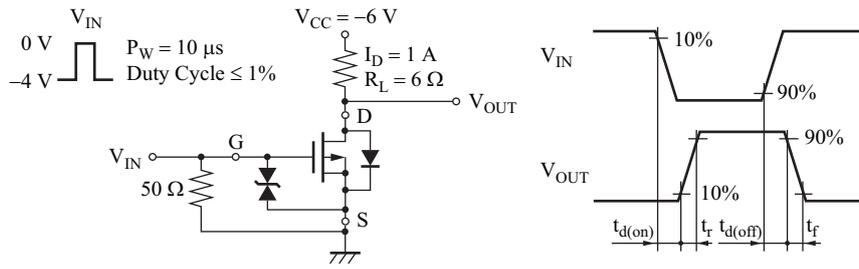
1: Source	5: Drain
2: Gate	6: Drain
3: Source	7: Drain
4: Gate	8: Drain

Marking Symbol: 1D

Internal Connection

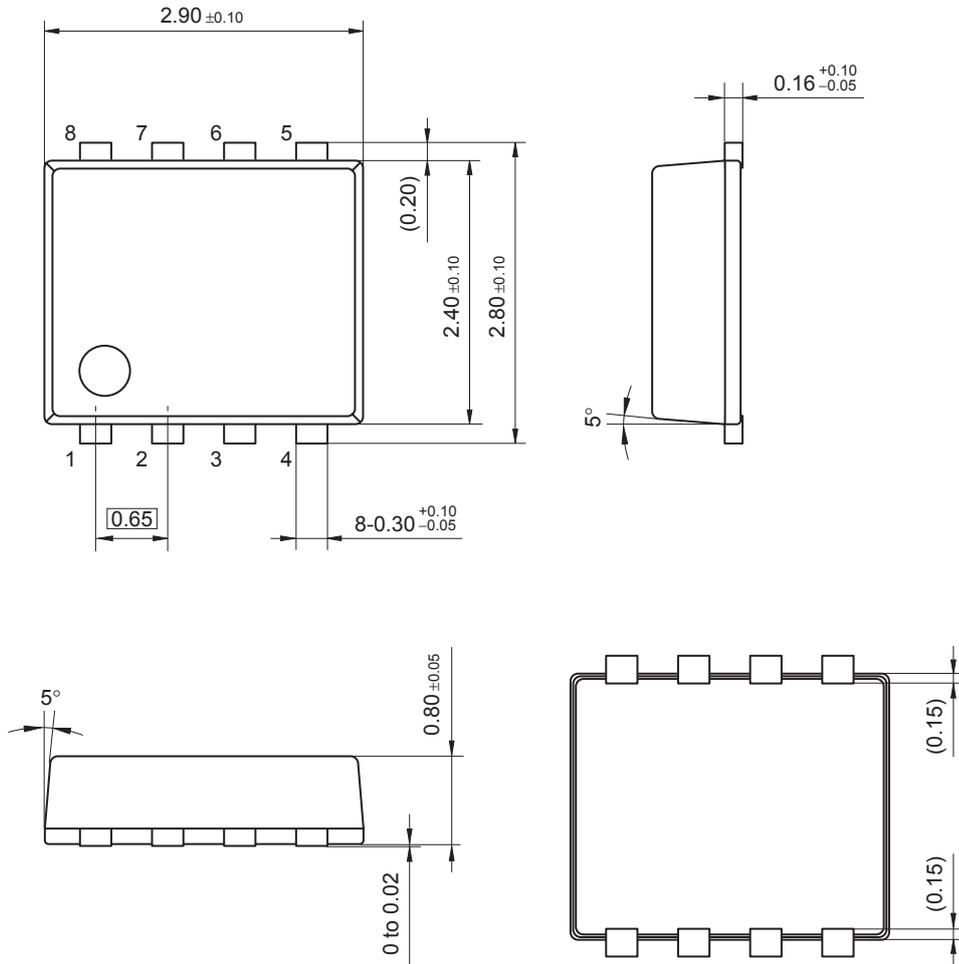


Test circuit



WMini8-F1

Unit: mm



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