

MTM76420

Silicon P-channel MOS FET

For DC-DC converter circuits

For switching circuits

■ Overview

MTM76420 is the dual P-channel MOS FET that is highly suitable for DC-DC converter and other switching circuits.

■ Features

- Dual P-channel MOS FET in one package
- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 100 m Ω ($V_{GS} = 4.0$ V)
- Low short-circuit input capacitance (common source): $C_{iss} = 440$ pF
- Small size surface mounting package: WSMini6-F1-B (2.1 mm \times 2.0 mm \times 0.7 mm)
- Low drive voltage: 1.8 V drive
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

■ Packaging

Embossed type (Thermo-compression sealing): 3000 pcs / reel (standard)

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

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	-20	V
Gate-source surrender voltage	V_{GSS}	± 10	V
Drain current	I_D	-1.2	A
Peak drain current	I_{DP}	-7	A
Power dissipation *	P_D	700	mW
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *: Measuring on ceramic substrate at 40 mm \times 38 mm \times 0.2 mm

P_D absolute maximum rating without a heat sink: 150 mW

■ Package

• Code

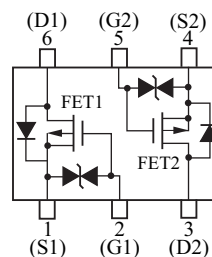
WSMini6-F1-B

• Pin Name

- | | |
|-----------|-----------|
| 1: Source | 4: Source |
| 2: Gate | 5: Gate |
| 3: Drain | 6: Drain |

■ Marking Symbol: JC

■ Internal Connection



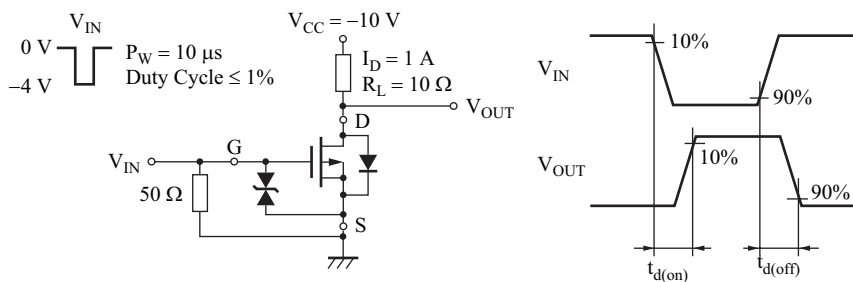
■ Electrical Characteristics $T_a = 25^{\circ}\text{C} \pm 3^{\circ}\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = -1 \text{ mA}, V_{GS} = 0$	-20			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = -20 \text{ V}, V_{GS} = 0$			-1.0	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 8 \text{ V}, V_{DS} = 0$			± 10	μA
Gate threshold voltage	V_{TH}	$I_D = -1.0 \text{ mA}, V_{DS} = -10 \text{ V}$	-0.40	-0.85	-1.30	V
Drain-source ON resistance 1 *1	$R_{DS(on)1}$	$I_D = -1 \text{ A}, V_{GS} = -4.0 \text{ V}$		100	130	$\text{m}\Omega$
Drain-source ON resistance 2 *1	$R_{DS(on)2}$	$I_D = -0.6 \text{ A}, V_{GS} = -2.5 \text{ V}$		130	200	$\text{m}\Omega$
Drain-source ON resistance 3 *1	$R_{DS(on)3}$	$I_D = -0.2 \text{ A}, V_{GS} = -1.8 \text{ V}$		150	280	$\text{m}\Omega$
Forward transfer admittance *1	$ Y_{fs} $	$I_D = -1.0 \text{ A}, V_{DS} = -10 \text{ V}, f = 1 \text{ MHz}$	3.0			S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		440		pF
Short-circuit output capacitance (Common source)	C_{oss}			40		pF
Reverse transfer capacitance (Common source)	C_{rss}			38		pF
Turn-on time *2	t_{on}	$V_{DD} = -10 \text{ V}, V_{GS} = 0 \text{ V to } -4 \text{ V}, I_D = -1 \text{ A}$		35		ns
Turn-off time *2	t_{off}	$V_{DD} = -10 \text{ V}, V_{GS} = -4 \text{ V to } 0 \text{ V}, I_D = -1 \text{ A}$		100		ns

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

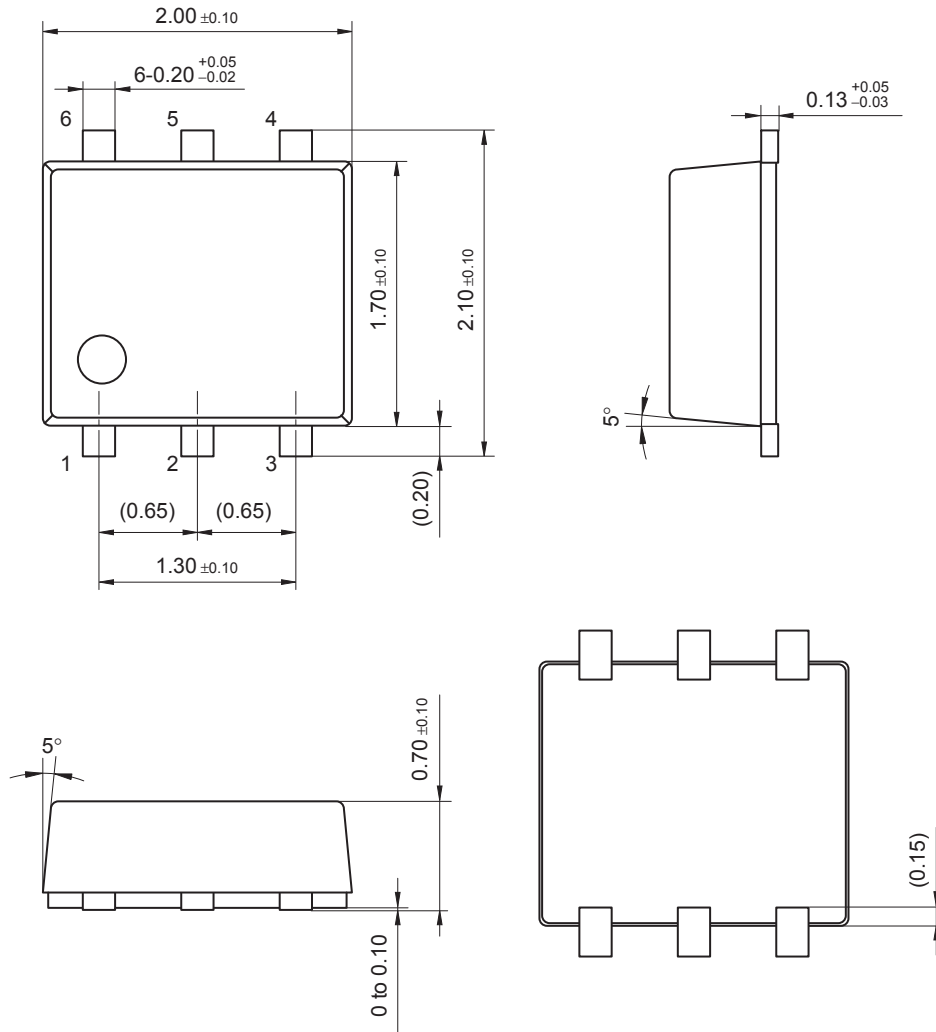
2. *1: Pulse measurement

*2: Test circuit



WSMini6-F1-B

Unit: mm



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