

MTM76520

Silicon N-channel MOS FET

For DC-DC converter circuits

For switching circuits

■ Overview

MTM76520 is the dual N-channel MOS FET that is highly suitable for DC-DC converter and other switching circuits.

■ Features

- Dual N-channel MOS FET in one package
- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 80 m Ω (V_{GS} = 4.0 V)
- Low short-circuit input capacitance (Common source): C_{iss} = 280 pF
- Small size surface mounting package: WSMINI6-F1-B
- 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	2.0	A
Peak drain current *1	I_{DP}	12	A
Power dissipation	P_D	700 *2	mW
		150 *3	
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *1: $t = 10 \mu\text{s}$, Duty Cycle < 1%

*2: Glass epoxy board: 25.4 mm \times 25.4 mm \times 0.8 mm

Copper foil of the drain portion should have a area of 300 mm² or more

*3: Stand-alone (without the board)

■ Package

• Code

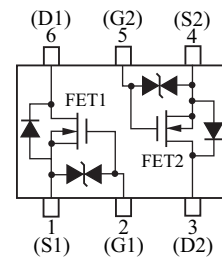
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• Pin Name

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

■ Marking Symbol: JA

■ Internal Connection

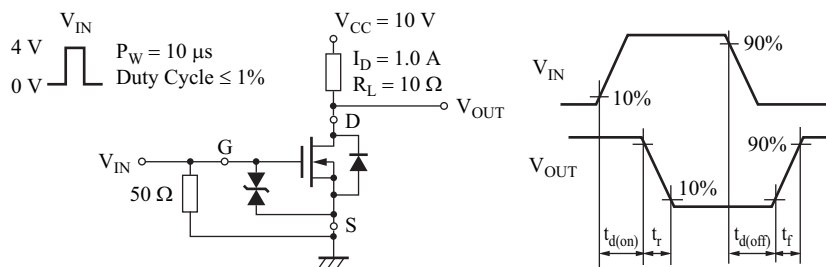


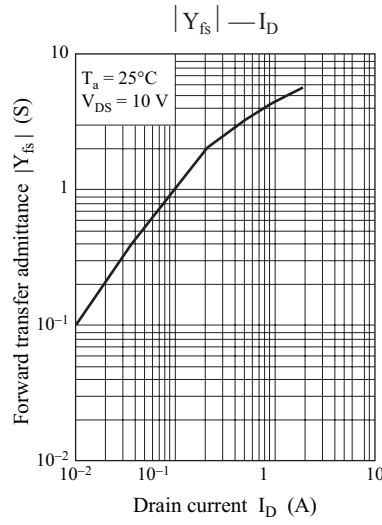
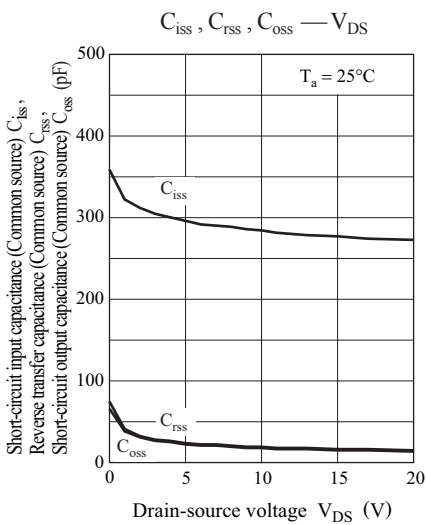
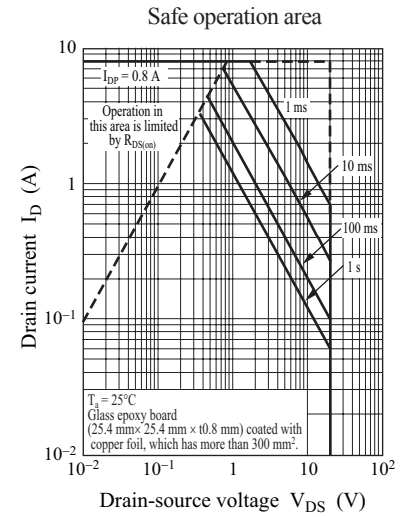
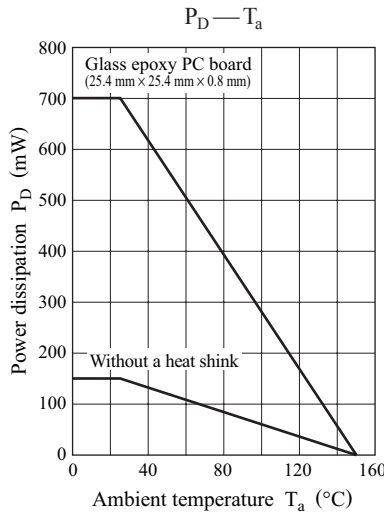
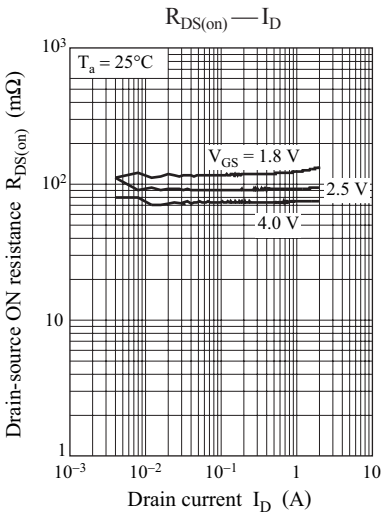
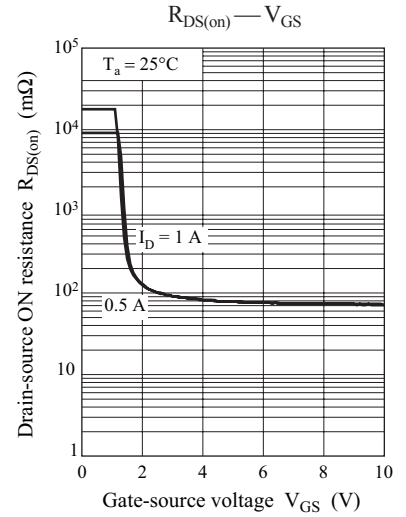
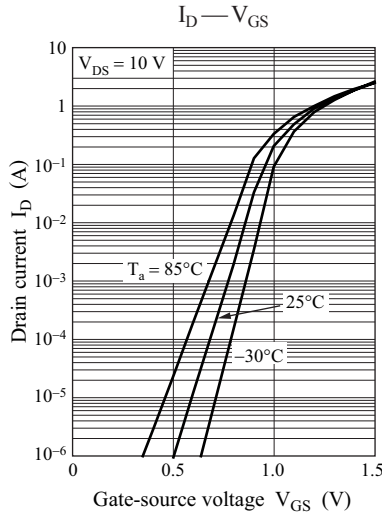
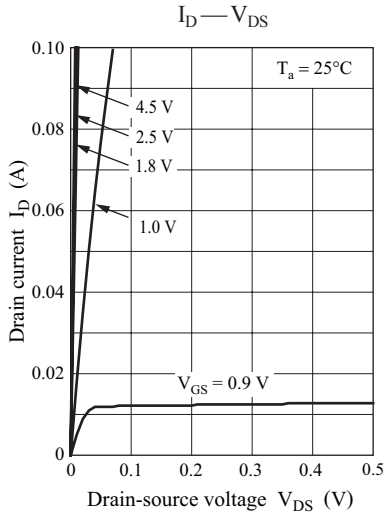
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = 1.0 \text{ mA}, V_{GS} = 0$	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}	$V_{GS} = \pm 8.0 \text{ V}, V_{DS} = 0$			± 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	$R_{DS(on)1}$	$I_D = 1.0 \text{ A}, V_{GS} = 4.0 \text{ V}$		80	105	m Ω
	$R_{DS(on)2}$	$I_D = 0.5 \text{ A}, V_{GS} = 2.5 \text{ V}$		100	150	
	$R_{DS(on)3}$	$I_D = 0.5 \text{ A}, V_{GS} = 1.8 \text{ V}$		170	300	
Forward transfer admittance	$ Y_{fs} $	$I_D = 1.0 \text{ A}, V_{DS} = 10 \text{ V}$	2.4	4.0		S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		280		pF
Short-circuit output capacitance (Common source)	C_{oss}			18		pF
Reverse transfer capacitance (Common source)	C_{rss}			17		pF
Turn-on delay time *	$t_{d(on)}$		$V_{DD} = 10 \text{ V}, V_{GS} = 4.0 \text{ V}, I_D = 1.0 \text{ A}$		5	
Rise time *	t_r			8		ns
Turn-off delay time *	$t_{d(off)}$			20		ns
Fall time *	t_f			18		ns

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

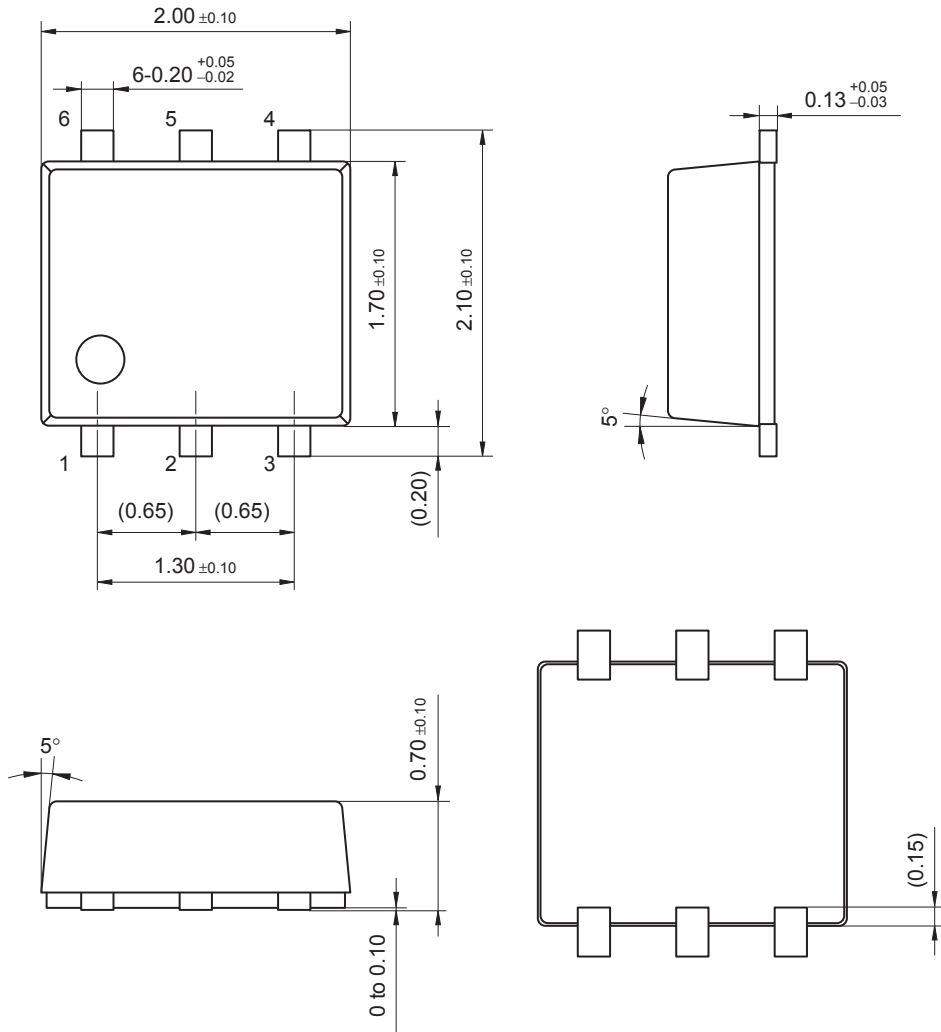
2. *: Measurement circuit





WSMini6-F1-B

Unit: mm



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