MTM76110

Silicon P-channel MOS FET

For load switch circuits
For switching circuits

■ Overview

MTM76110 is the low on resistance P-channel MOS FET designed for load switch circuits.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ = 30 mΩ (V_{GS} = –4.0 V)
- Small size package: WSMini6-F1-B
- Low drive voltage: 1.8 V drive
- Eco-friendly Halogen-free package

■ Packaging

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

■ Absolute Maximum Ratings T_a = 25°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	–4.0	A
Peak drain current *1	I_{DP}	–16	A
Power dissipation *2	P_D	700	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

Note) ∗1: Measuring on ceramic substrate at 40 mm × 38 mm × 0.1 mm
Absolute maximum rating without heat sink for P_D is 150 mA
∗2: Pulse width ≤ 10 μs, Duty Cycle ≤ 1%

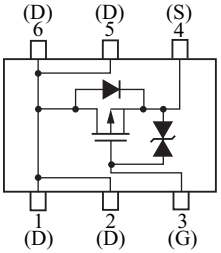
■ Package

- Code
  WSMini6-F1-B
- Pin Name

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

■ Marking Symbol: 9D

■ Internal Connection



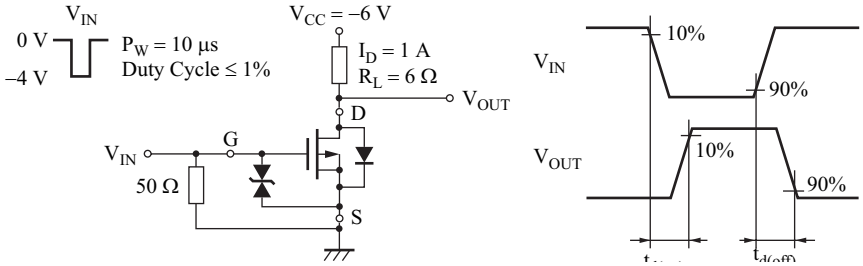
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = -1$ mA, $V_{GS} = 0$	–12			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = -12$ V, $V_{GS} = 0$			–1.0	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 6.4$ V, $V_{DS} = 0$			±10	μA
Gate threshold voltage	V_{TH}	$I_D = -1.0$ mA, $V_{DS} = -6.0$ V	– 0.3	– 0.65	–1.0	V
Drain-source ON resistance *1	$R_{DS(on)}$	$I_D = -1$ A, $V_{GS} = -4.0$ V		30	42	mΩ
		$I_D = -0.5$ A, $V_{GS} = -2.5$ V		35	55	
		$I_D = -0.2$ A, $V_{GS} = -1.8$ V		45	75	
Forward transfer admittance *1	$\lvert Y_{fs} \rvert$	$I_D = -1.0$ A, $V_{DS} = -10$ V, f = 1 kHz	3.5			S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = -10$ V, $V_{GS} = 0$, f = 1 MHz		1 200		pF
Short-circuit output capacitance (Common source)	C_{oss}			110		pF
Reverse transfer capacitance (Common source)	C_{rss}			110		pF
Turn-on time *2	t_{on}	$V_{DD} = -6$ V, $V_{GS} = 0$ V to –4 V, $I_D = -1$ A		30		ns
Turn-off time *2	t_{off}	$V_{DD} = -6$ V, $V_{GS} = -4$ V to 0 V, $I_D = -1$ A		300		ns

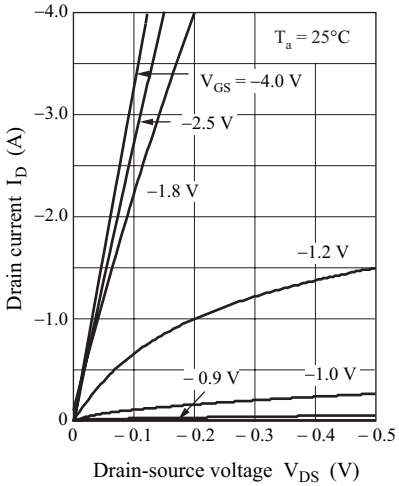
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse measurement: Pulse width < 300 μs, Duty Cycle < 2.0%

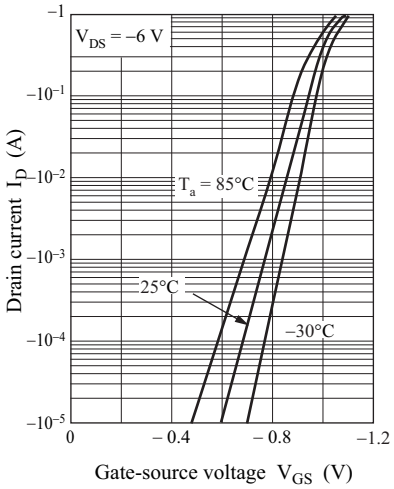
*2: t_{on} , t_{off} measurement circuit



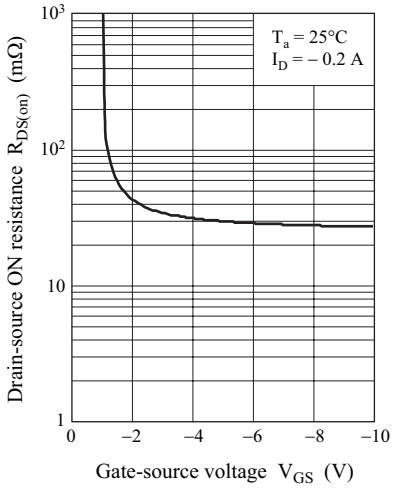
I_D — V_{DS}



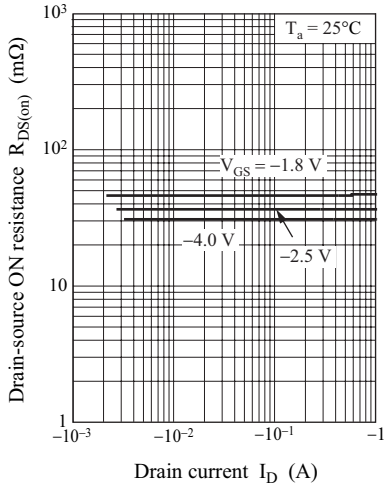
I_D — V_{GS}



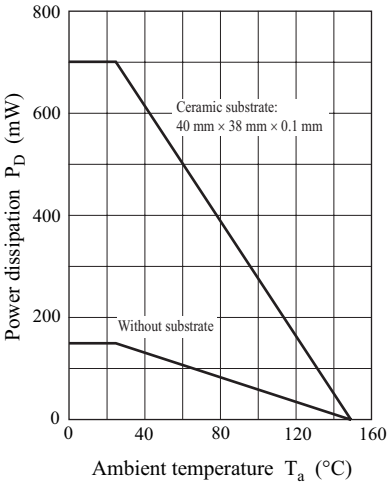
$R_{DS(on)}$ — V_{GS}



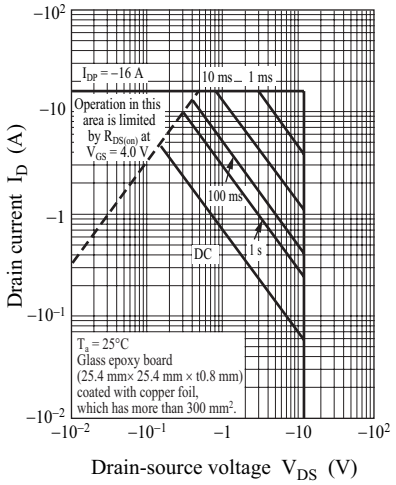
$R_{DS(on)}$ — I_D



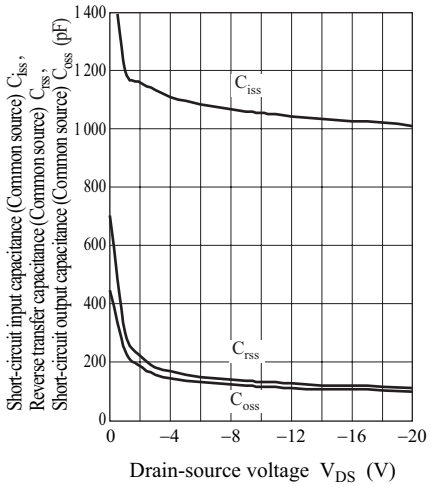
P_D — T_a



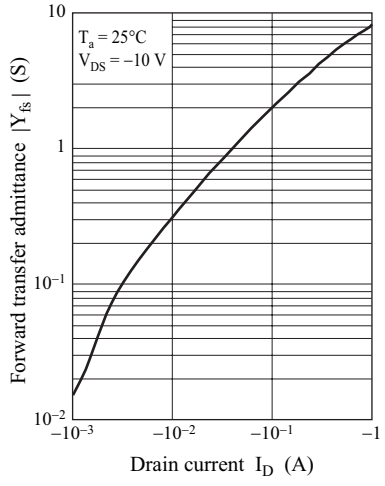
Safe operation area



C_{iss} , C_{rss} , C_{oss} — V_{DS}

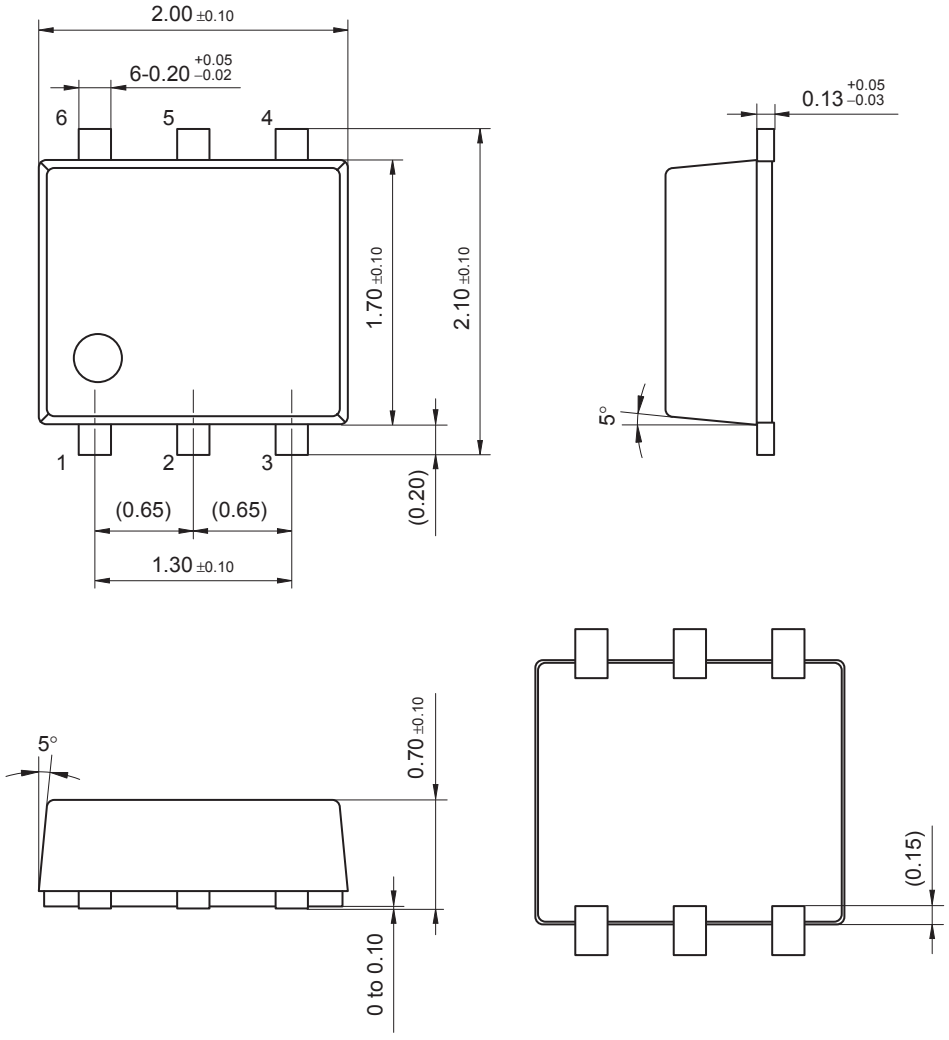


$|Y_{fs}|$ — I_D



WSMini6-F1-B

Unit: mm



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