MTM76111

Silicon P-channel MOS FET

For load switch circuits

■ Overview

MTM76111 is the low on-resistance P-channel MOS FET designed for load switch circuits.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 26 mΩ (V_{GS} = –4.5 V)
- Low drive voltage: 1.8 V drive
- Small size package: WSMini6-F1-B
- 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°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	I_{DP}	–20	A
Power dissipation *	P_D	700	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

Note) *: Measuring on ceramic substrate at 40 mm × 38 mm × 0.2 mm
Absolute maximum rating without heat sink for P_D is 150 mW

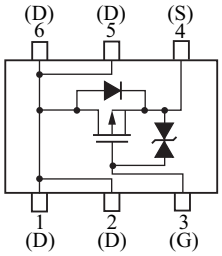
■ Package

- Code
  WSMini6-F1-B
- Pin Name

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

■ Marking Symbol: GS

■ Internal Connection

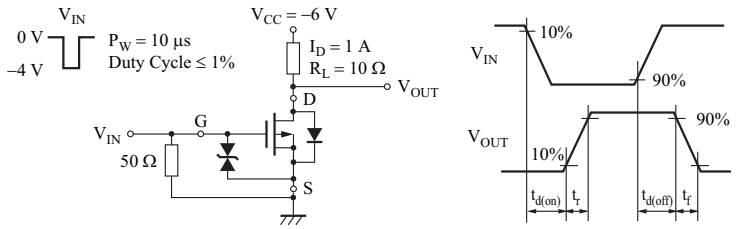


■ Electrical Characteristics T_a = 25°C±3°C

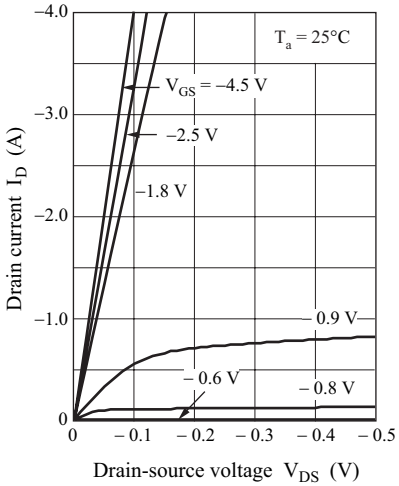
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = –1.0 mA, V_{GS} = 0	–12			V
Drain-source cutoff current	I_{DSS}	V_{DS} = –10 V, V_{GS} = 0			– 0.1	μA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±8 V, V_{DS} = 0			±10	μA
Gate threshold voltage	V_{TH}	I_D = –1.0 mA, V_{DS} = –6.0 V	– 0.3	– 0.65	–1.0	V
Drain-source ON resistance	$R_{DS(on)}$	I_D = –1.0 A, V_{GS} = –4.5 V		26	34	mΩ
		I_D = – 0.5 A, V_{GS} = –2.5 V		30	41	
		I_D = – 0.5 A, V_{GS} = –1.8 V		36	54	
Forward transfer admittance	$\|Y_{fs}\|$	I_D = –1.0 A, V_{DS} = –10 V	4.0			S
Short-circuit input capacitance (Common source)	C_{iss}	V_{DS} = –10 V, V_{GS} = 0, f = 1 MHz		1 400		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 V, V_{GS} = 0 V to –4 V, I_D = –1.0 A		9		ns
Rise time	t_r			11		ns
Turn-off delay time *	$t_{d(off)}$	V_{DD} = –6V, V_{GS} = –4 V to 0 V, I_D = –1.0 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.

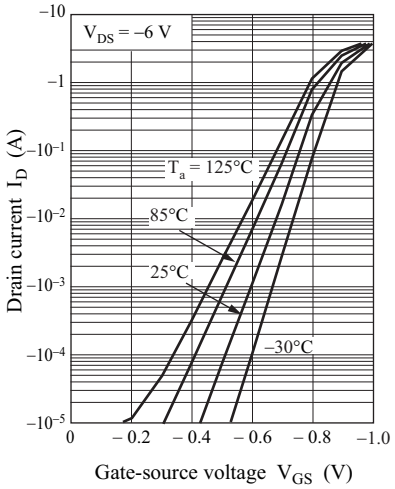
2. ∗: Measurement circuit



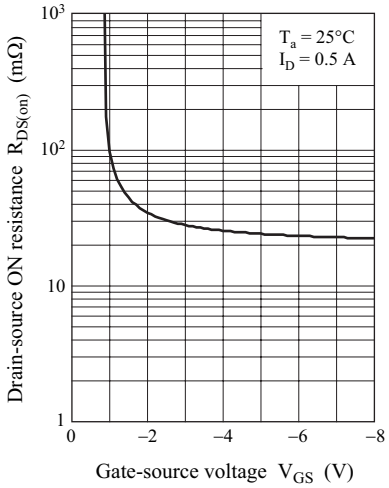
I_D — V_{DS}



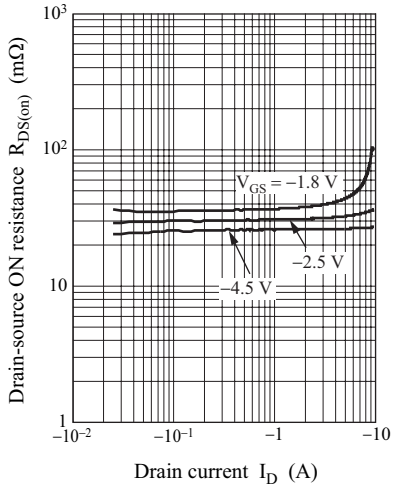
I_D — V_{GS}



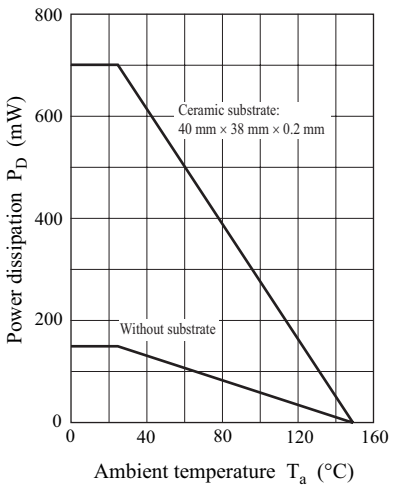
$R_{DS(on)}$ — V_{GS}



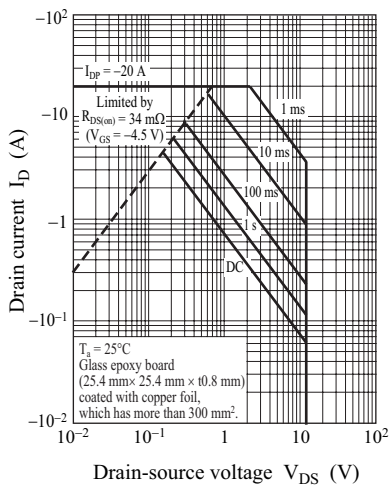
$R_{DS(on)}$ — I_D



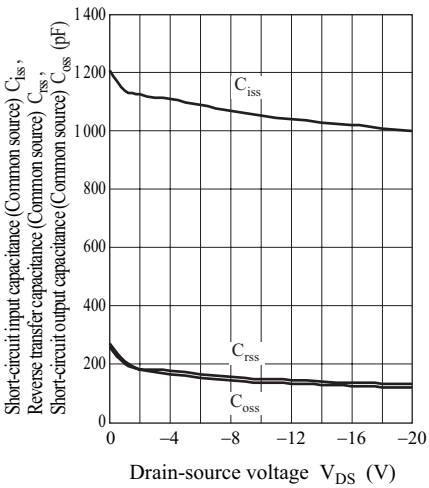
P_D — T_a



Safe operation area

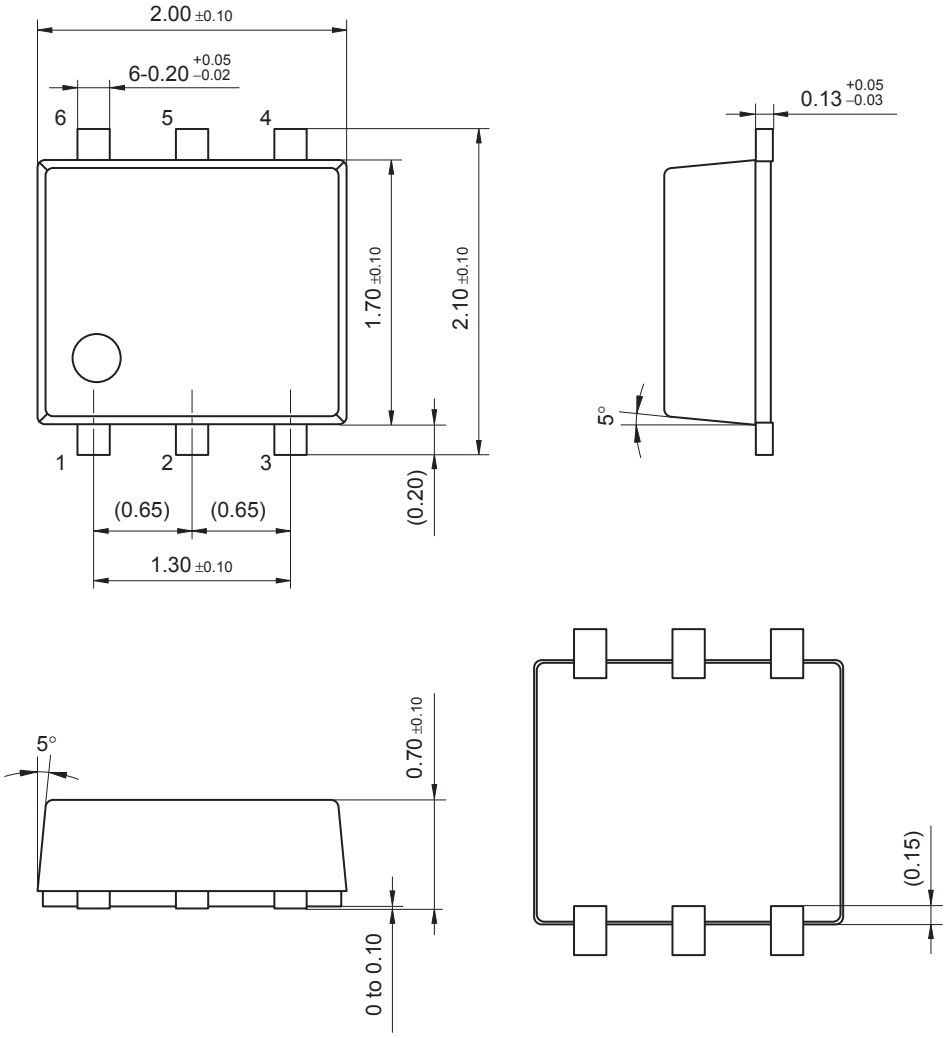


C_{iss} ,C_{oss} , C_{rss} — V_{DS}



WSMini6-F1-B

Unit: mm



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