MTM76123

Silicon P-channel MOS FET

For load switch circuits
For switching circuits

■ Overview

MTM76123 is the low on-resistance P-channel MOS FET designed for load switch circuits.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 36 mΩ (V_{GS} = –4.0 V)
- Small size surface mounting package: WSMini6-F1-B (2.1 mm × 2.0 mm × 0.7 mm)
- Low drive voltage: 2.5 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°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	–3.0	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%

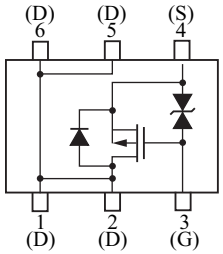
■ Package

- Code
  WSMini6-F1-B
- Pin Name

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

■ Marking Symbol: 9C

■ Internal Connection



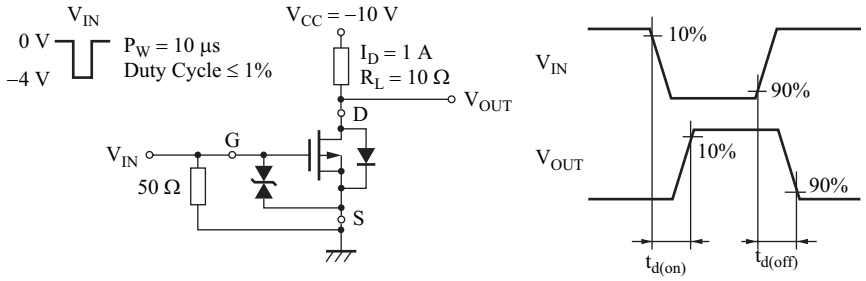
■ Electrical Characteristics T_a = 25°C±3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = –1 mA, V_{GS} = 0	–20			V
Drain-source cutoff current	I_{DSS}	V_{DS} = –20 V, V_{GS} = 0			–1.0	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} = –10 V	– 0.4	– 0.85	–1.3	V
Drain-source ON resistance *1	$R_{DS(on)}$	I_D = –1 A, V_{GS} = –4.0 V		36	55	mΩ
		I_D = – 0.5 A, V_{GS} = –2.5 V		42	70	
Forward transfer admittance *1	$\lvert Y_{fs} \rvert$	I_D = –1.0 A, V_{DS} = –10 V, f = 1 MHz	3.5			S
Short-circuit input capacitance (Common source)	C_{iss}	V_{DS} = –10 V, V_{GS} = 0, f = 1 MHz		1 000		pF
Short-circuit output capacitance (Common source)	C_{oss}			100		pF
Reverse transfer capacitance (Common source)	C_{rss}			100		pF
Turn-on time *2	t_{on}	V_{DD} = –10 V, V_{GS} = 0 V to –4 V, I_D = –1 A		30		ns
Turn-off time *2	t_{off}	V_{DD} = –10 V, V_{GS} = –4 V to 0 V, I_D = –1 A		250		ns

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

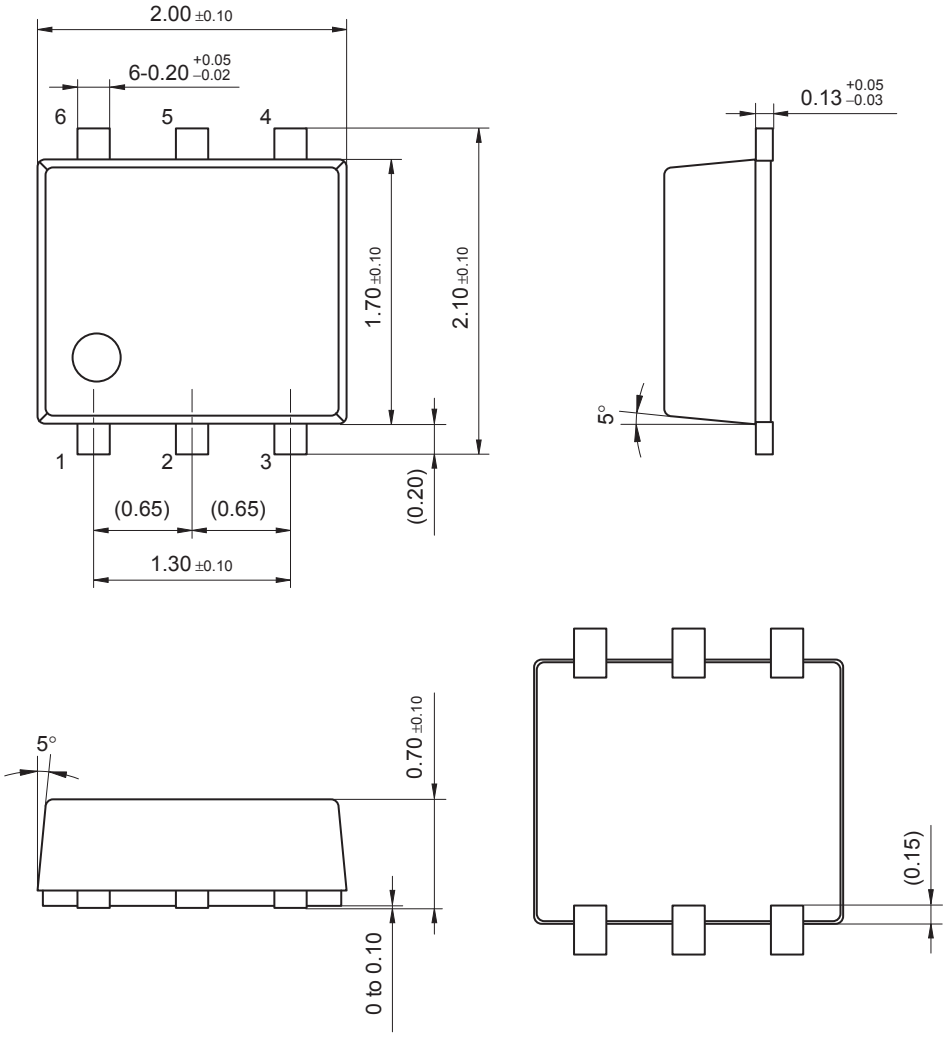
2. *1: Pulse measurement: Pulse width < 300 μσ, Duty Cycle < 2.0%

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



WSMini6-F1-B

Unit: mm



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