

MTM98140

Silicon P-channel MOS FET

For DC-DC converter circuits

For LCD back light inverter

■ Overview

The MTM98140 is suitable for DC-DC converter and LCD back light inverter.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 19 m Ω ($V_{GS} = 10$ V)
- High speed switching characteristic
- Flat-lead package: SO8-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 $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	-40	V
Gate-source surrender voltage	V_{GSS}	± 20	V
Drain current	I_D	-7	A
Peak drain current	I_{DP}	-28	A
Power dissipation *	P_D	2	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *: Measuring on ceramic substrate at 50 mm \times 50 mm \times 1.0 mm

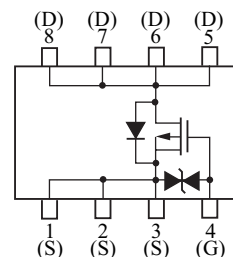
■ Package

- Code
SO8-F1-B
- Pin Name

1: Source	5: Drain
2: Source	6: Drain
3: Source	7: Drain
4: Gate	8: Drain

■ Marking Symbol: BA

■ Internal Connection

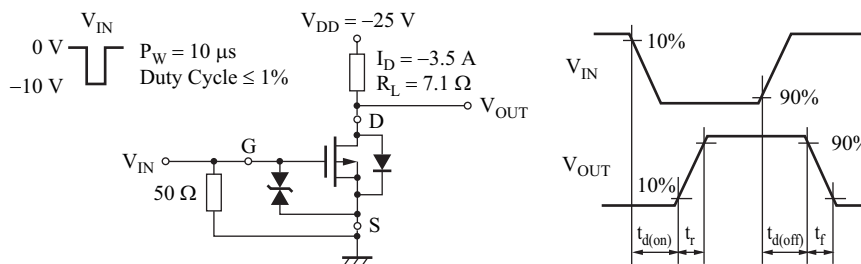


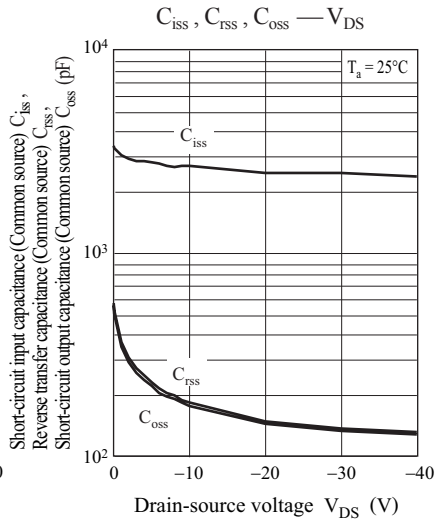
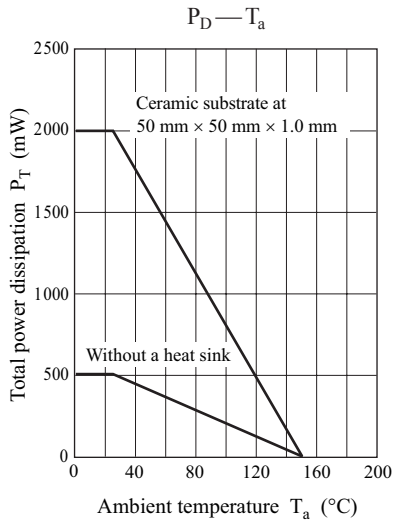
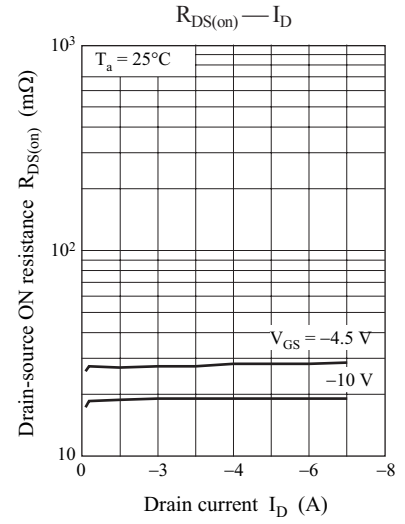
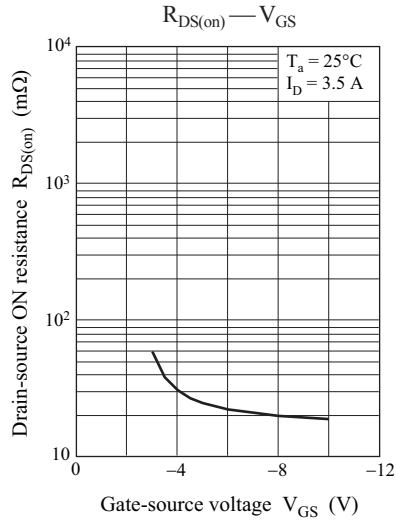
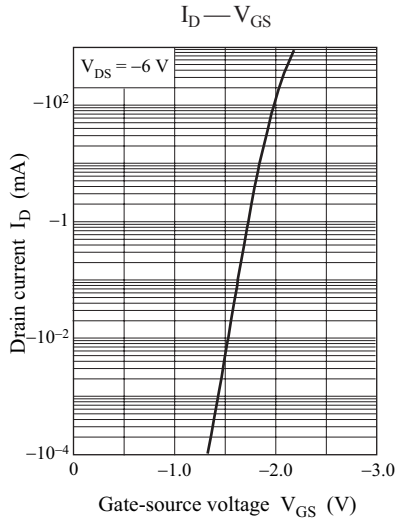
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = -1 \text{ mA}, V_{GS} = 0$	-40			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = -40 \text{ V}, V_{GS} = 0$			-10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$			± 10	μA
Gate threshold voltage	V_{TH}	$I_D = 1.0 \text{ mA}, V_{DS} = 10.0 \text{ V}$	-1.0		-2.5	V
Drain-source ON resistance *1	$R_{DS(on)}$	$I_D = -7 \text{ A}, V_{GS} = -10 \text{ V}$		19	25	m Ω
		$I_D = -3.5 \text{ A}, V_{GS} = -4.5 \text{ V}$		28	45	
Forward transfer conductance	$ Y_{fs} $	$I_D = -7 \text{ A}, V_{DS} = -10 \text{ V}$	10			S
Short-circuit input capacitance (Common source)	C_{iss}	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		2700		pF
Short-circuit output capacitance (Common source)	C_{oss}			190		pF
Reverse transfer capacitance (Common source)	C_{rss}			175		pF
Turn-on delay time *1, *2	$t_{d(on)}$	$V_{DD} = -25 \text{ V}, V_{GS} = 0 \text{ V to } -10 \text{ V},$ $I_D = -3.5 \text{ A}$		18		ns
Rise time *1, *2	t_r			15		ns
Turn-off delay time *1, *2	$t_{d(off)}$	$V_{DD} = -25 \text{ V}, V_{GS} = -10 \text{ V to } 0 \text{ V},$ $I_D = -3.5 \text{ A}$		230		ns
Fall time *1, *2	t_f			70		ns

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

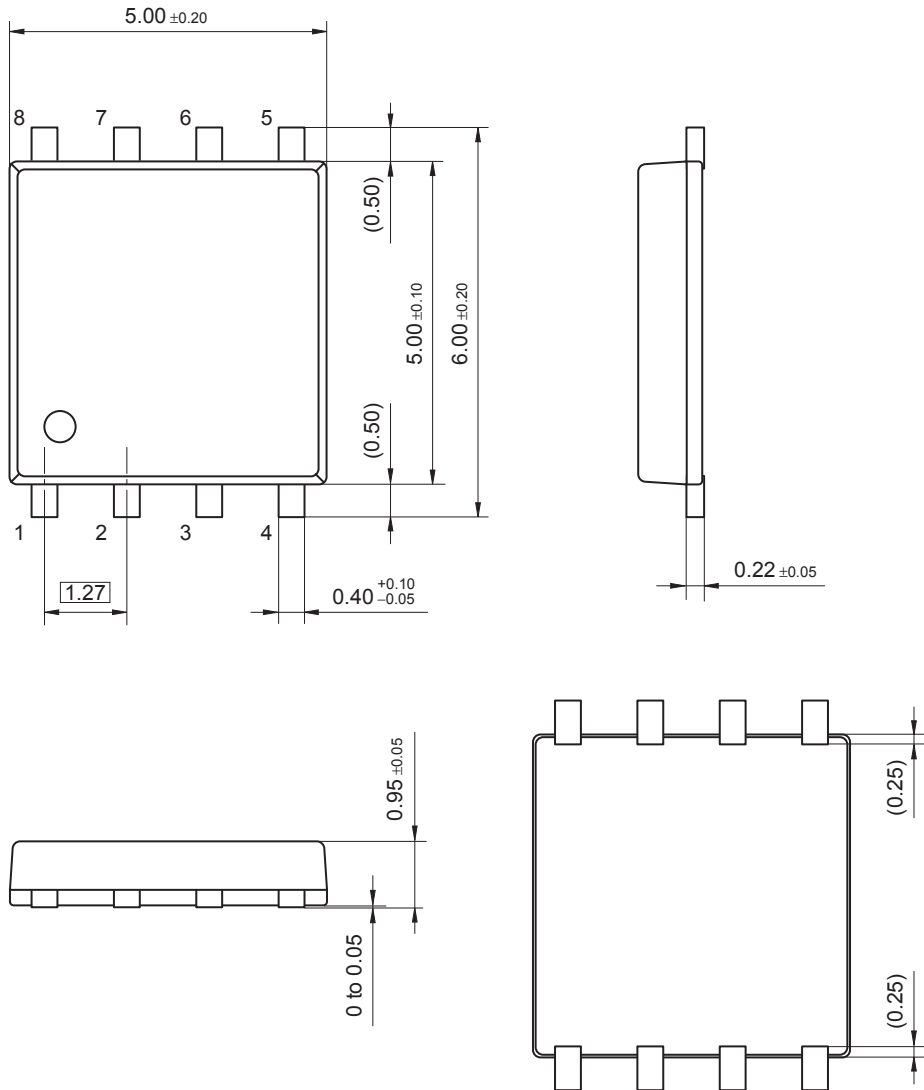
- 2. *1: Pulse measurement
- *2: Measurement circuit





SO8-F1-B

Unit: mm



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