

# MTM862270LBF

## Silicon N-channel MOSFET

## For Switching

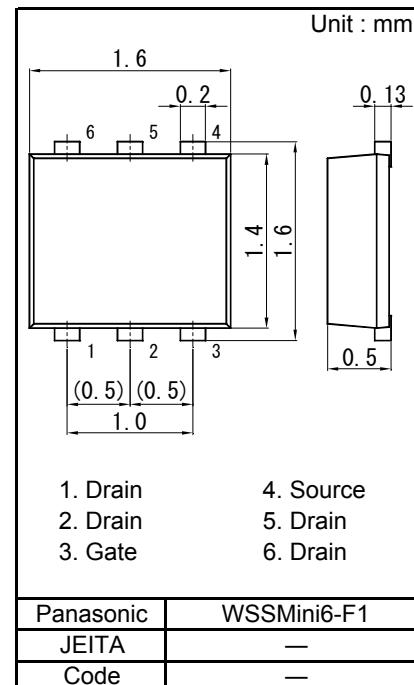
## ■ Features

- Low drain-source On-state Resistance :  $R_{DS(on)}$  typ = 80 m $\Omega$  (V<sub>GS</sub> = 4.0 V)
- Low drive voltage: 1.8V drive
- Halogen-free / RoHS compliant  
(EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : JF

## ■ Packaging

Embossed type (Thermo-compression sealing) : 10 000 pcs / reel (standard)



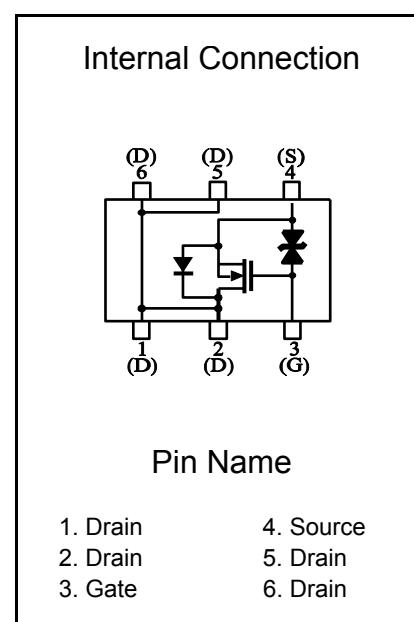
#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Absolute Maximum Ratings (Ta = 25°C)			
Parameter	Symbol	Rating	Unit
Drain to Source Voltage	VDS	20	V
Gate to Source Voltage	VGS	±10	
Drain Current	ID	2.2	A
Drain Current (Pulsed) <sup>1)</sup>	IDp	8.0	
Total Power Dissipation <sup>2)</sup>	PD	540	mW
Channel Temperature	Tch	150	°C
Operating Ambient Temperature	Topr	-40 to +85	
Storage Temperature Range	Tstg	-55 to +150	

Note) \*1 Pulse width  $t \leq 10 \mu\text{s}$ , Duty cycle  $\leq 1\%$

\*2 Measuring on ceramic substrate at 40 mm × 38 mm × 0.2 mm

PD absolute maximum rating without a heat sink: 150 mW





MOS FET  
MTM862270LBF

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

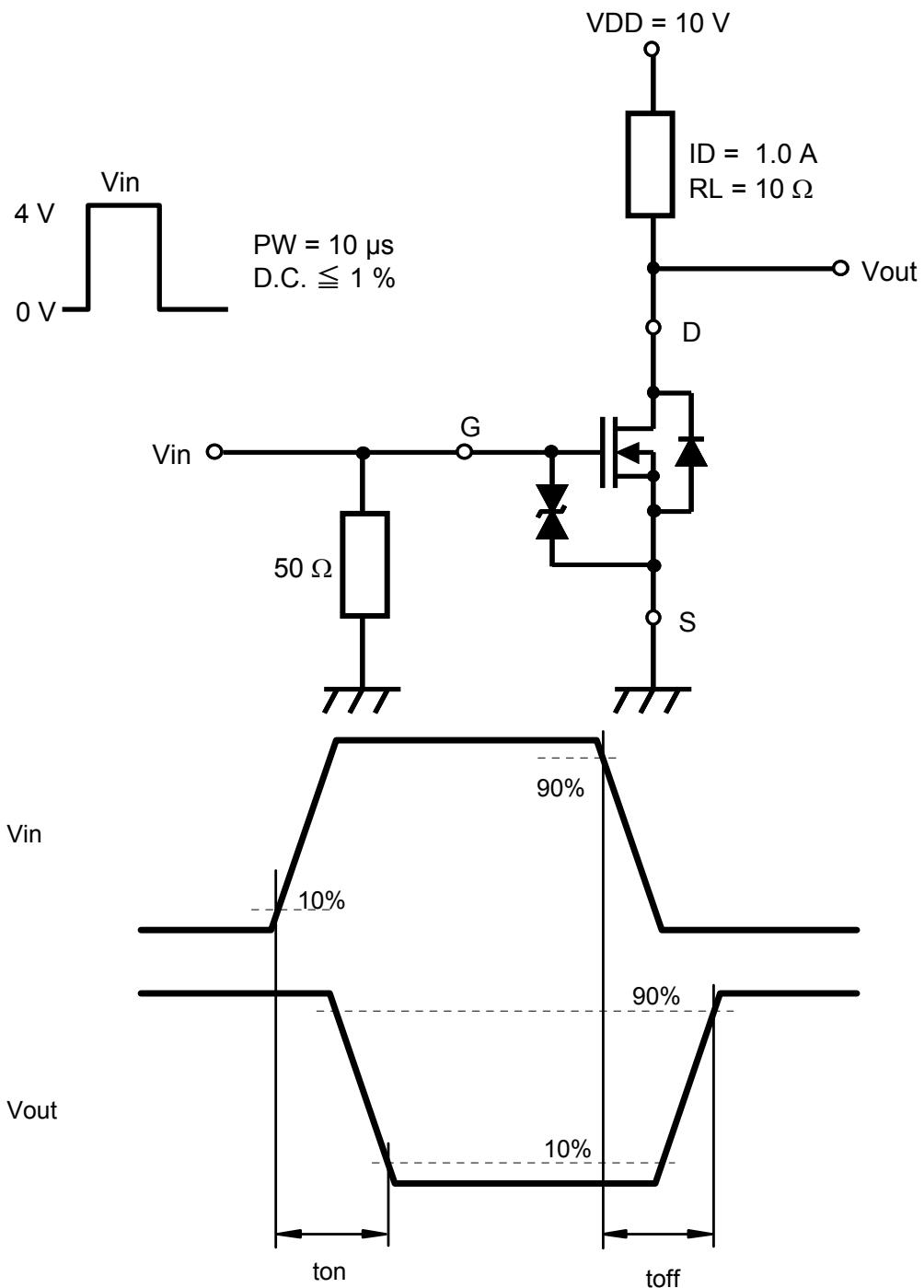
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1.0 mA, VGS = 0	20			V
Zero Gate Voltage Drain Current	IDSS	VDS = 20 V, VGS = 0			1.0	$\mu\text{A}$
Gate-source Leakage Current	IGSS	VGS = $\pm 8.0$ V, VDS = 0			$\pm 10$	$\mu\text{A}$
Gate-source Threshold Voltage	Vth	ID = 1.0 mA, VDS = 10 V	0.4	0.85	1.3	V
Drain-source On-state Resistance <sup>*1</sup>	RDS(on)1	ID = 1.0 A, VGS = 4.0 V		80	105	$\text{m}\Omega$
	RDS(on)2	ID = 0.5 A, VGS = 2.5 V		100	150	$\text{m}\Omega$
	RDS(on)3	ID = 0.5 A, VGS = 1.8 V		170	300	$\text{m}\Omega$
Forward transfer admittance <sup>*1</sup>	Yfs	ID = 1.0 A, VDS = 10 V	3.0	4.0		S
Input Capacitance	Ciss	VDS = 10 V, VGS = 0, f = 1 MHz		280		pF
Output Capacitance	Coss			18		pF
Reverse Transfer Capacitance	Crss			17		pF
Turn-on time <sup>*2</sup>	ton	VDD = 10 V, VGS = 0 to 4 V ID = 1.0 A		12		ns
Turn-off time <sup>*2</sup>	toff	VDD = 10 V, VGS = 4 to 0 V ID = 1.0 A		50		ns

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

2. \*1 Pulse test

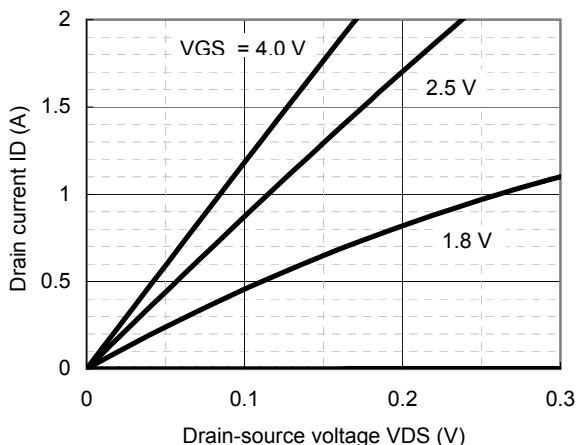
\*2 Measurement circuit for Turn-on Time / Turn-off Time

\*2 Measurement circuit for Turn-on Time / Turn-off Time

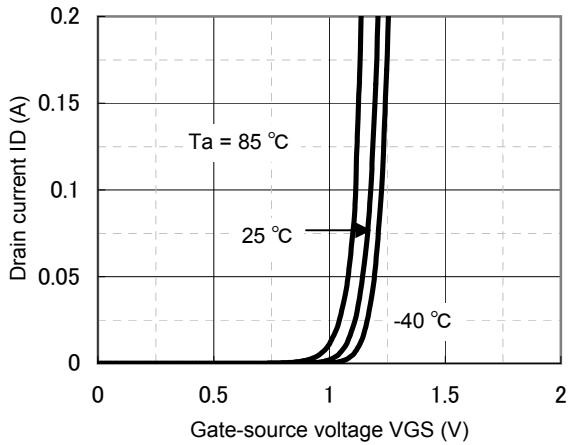


Technical Data ( reference )

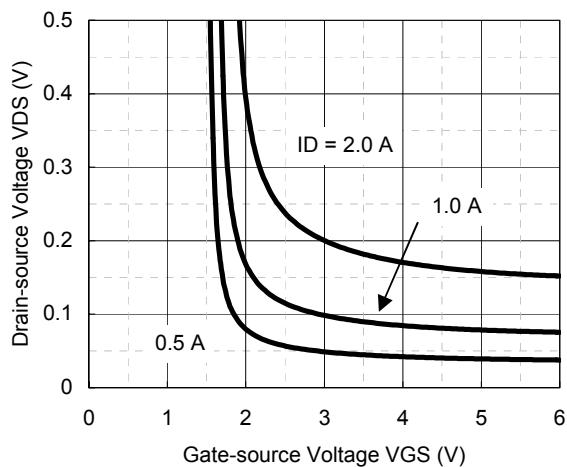
ID - VDS



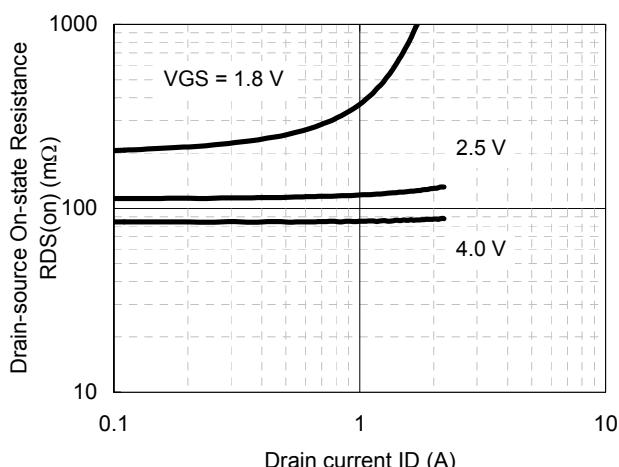
ID - VGS



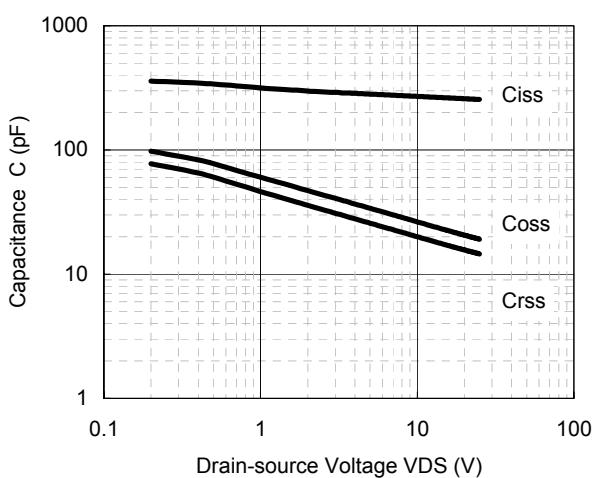
VDS - VGS



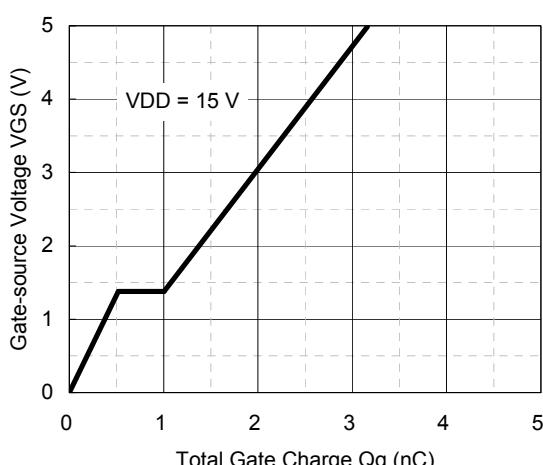
RDS(on) - ID



Capacitance - VDS

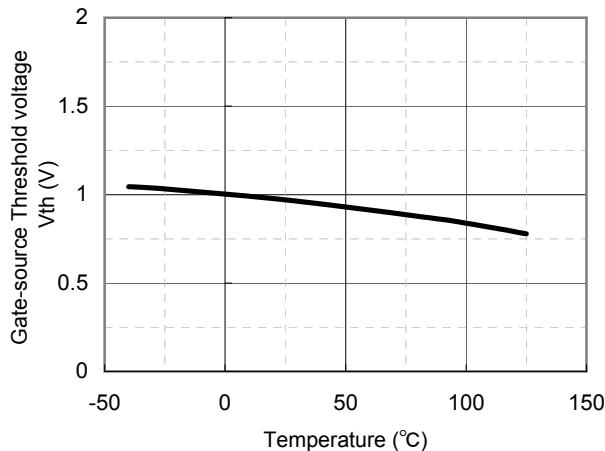


Dynamic Input/Output Characteristics

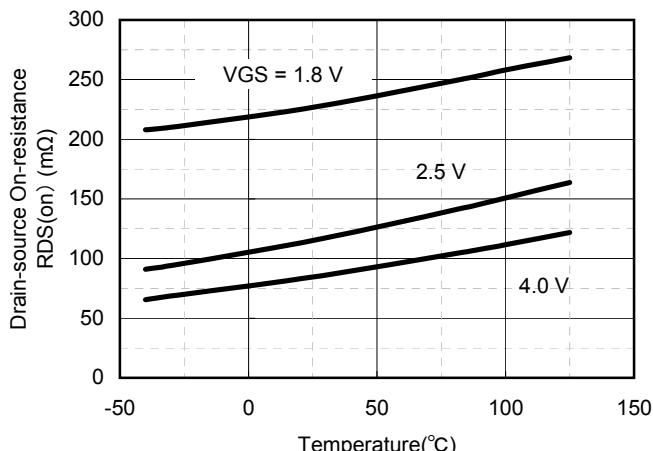


Technical Data ( reference )

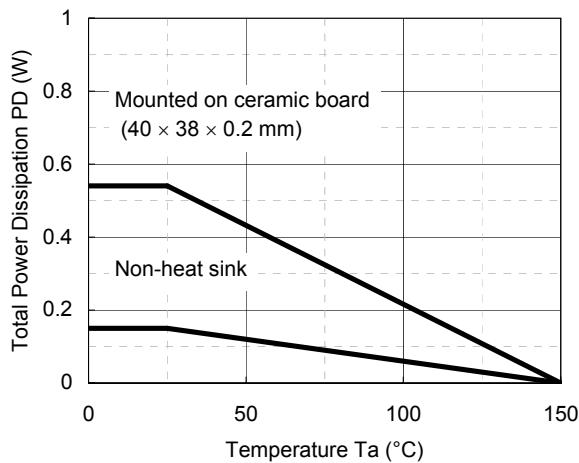
Vth - Ta



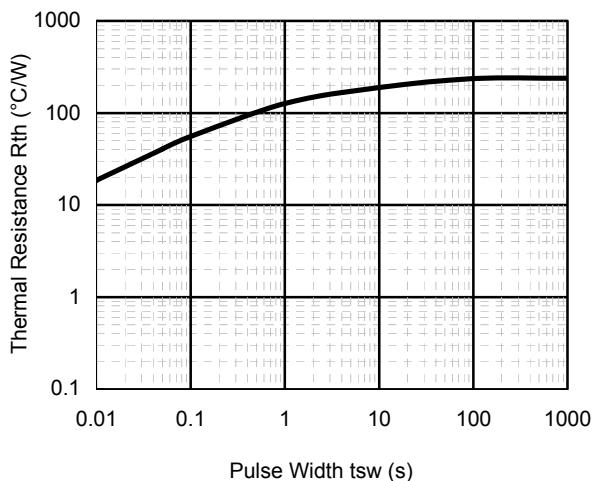
RDS(on) - Ta



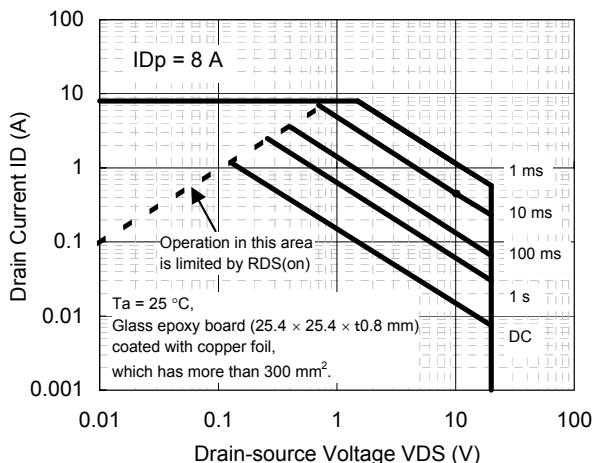
PD - Ta



Rth - tsw

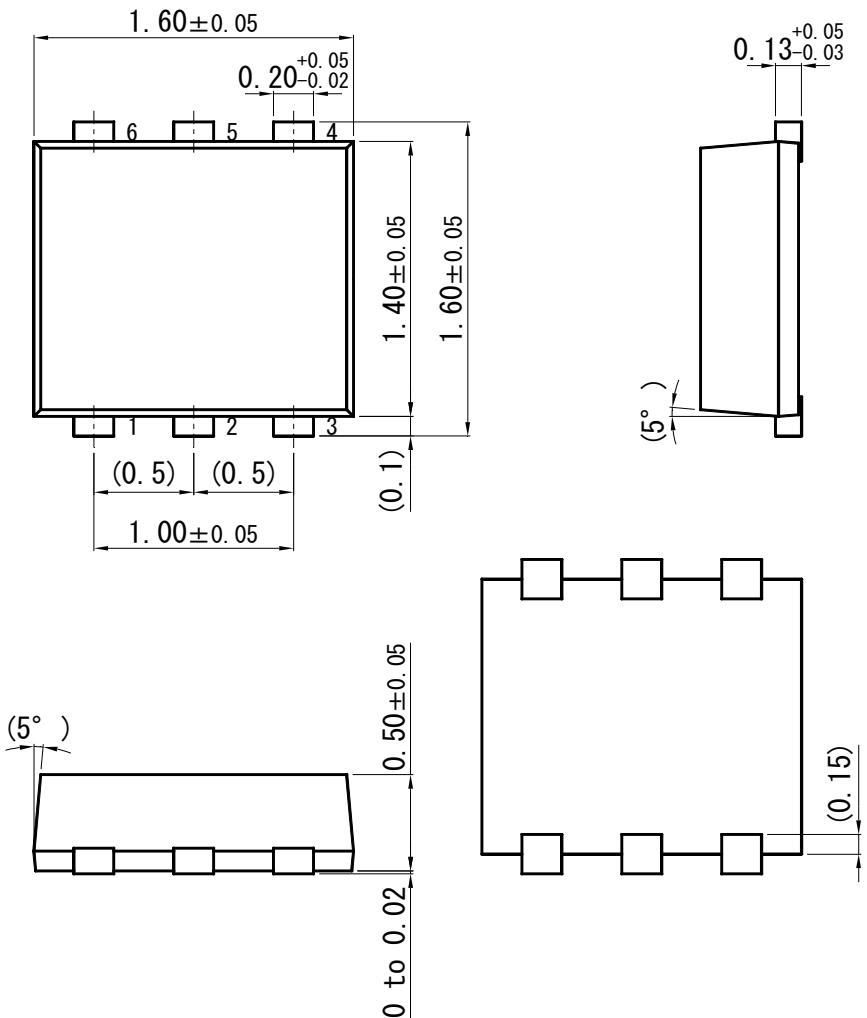


Safe Operating Area

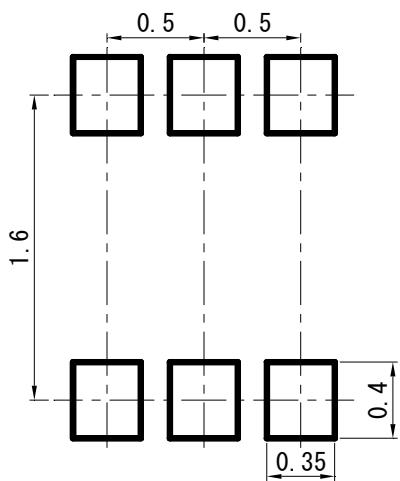


## WSSMini6-F1

Unit : mm



### ■ Land Pattern (Reference) (Unit : mm)



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