

# MTMC8E2A0LBF

## Gate Resistor installed Dual N-Channel MOS Typ

For lithium-ion secondary battery protection circuit

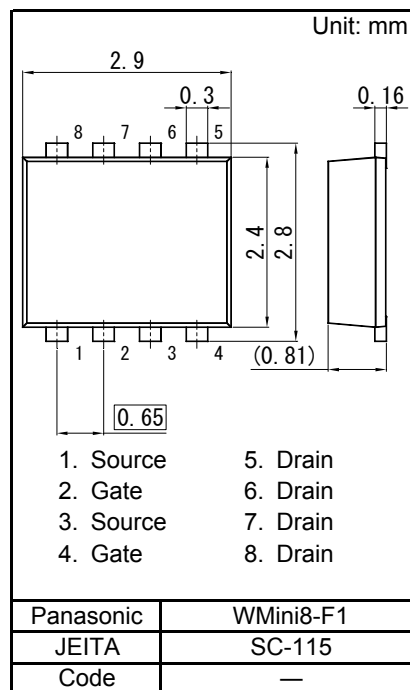
■ Features

- Low drain-source On-state Resistance  
 $R_{DS(on)}$  typ. = 15 m $\Omega$  (VGS = 4.5 V)
- Halogen-free / RoHS compliant  
 (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol: 4B

■ Packaging

Embossed type (Thermo-compression sealing) : 3 000 pcs / reel (standard)



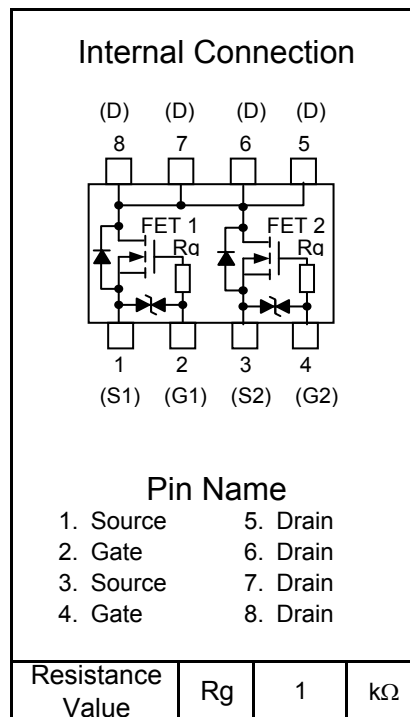
■ Absolute Maximum Ratings Ta = 25 °C

Parameter		Symbol	Rating	Unit
FET1	Drain-source Voltage	VDS	20	V
	Gate-source Voltage	VGS	±12	V
FET2	Drain current	ID	7.0	A
	Peak drain current	IDp	42	A
Overall	Total power dissipation	PD1 <sup>*1</sup>	1.0	W
		PD2 <sup>*1,2</sup>	1.2	
		PD3 <sup>*3</sup>	0.4	
	Channel temperature	Tch	150	°C
	Operating ambient temperature	Topr	-40 to + 85	°C
	Storage temperature	Tstg	-55 to +150	°C

Note) \*1 Glass epoxy board: 25.4 mm × 25.4 mm × 0.8 mm Copper foil of the drain portion should have a area of 300 mm<sup>2</sup> or more  
 PD absolute maximum rating without a heat sink: 400 mW

\*2 t = 10 s

\*3 Stand-alone (without the board)



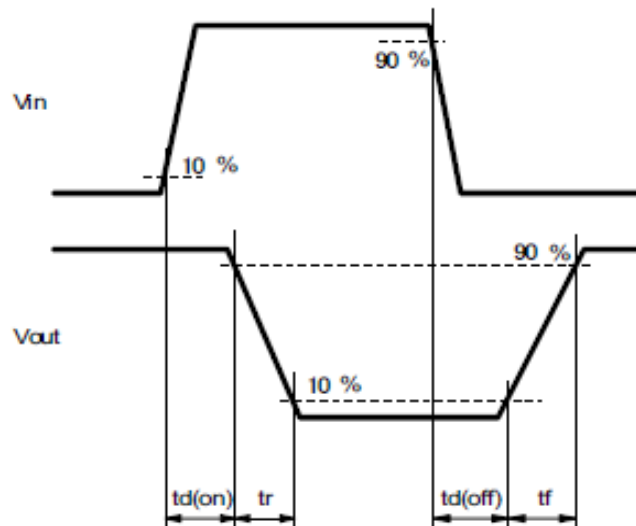
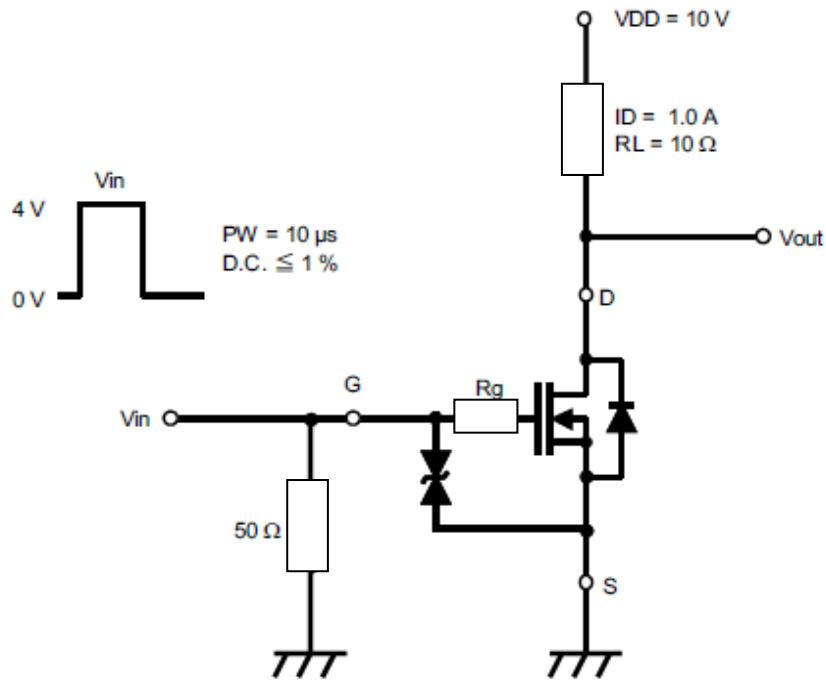
■ Electrical Characteristics Ta = 25°C ± 3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	VDSS	ID = 1.0 mA, VGS = 0	20			V
Drain-source cutoff current	IDSS	VDS = 20 V, VGS = 0			1.0	μA
Gate-source cutoff current	IGSS	VGS = ±8.0 V, VDS = 0			±10	μA
Gate threshold voltage	Vth	ID = 1.0 mA, VDS = 10 V	0.40	0.85	1.30	V
Drain-source ON resistance	RDS(ON)1	ID = 2.0 A, VGS = 4.5 V		15	21	mΩ
	RDS(ON)2	ID = 2.0 A, VGS = 3.7 V		18	25	mΩ
	RDS(ON)3	ID = 2.0 A, VGS = 2.5 V		22	33	mΩ
Forward transfer admittance	Yfs	ID = 1.0 A, VDS = 10 V	3.0			S
Short-circuit input capacitance (Common source)	Ciss	VDS = 10 V, VGS = 0, f = 1 MHz		1450		pF
Short-circuit output capacitance (Common source)	Coss			100		pF
Reverse transfer capacitance (Common source)	Crss			90		pF
Turn-on delay time <sup>*1</sup>	td(on)	VDD = 10 V, VGS = 0 V to 4 V		0.33		μs
Rise time <sup>*1</sup>	tr	ID = 1.0 A		0.70		μs
Turn-off delay time <sup>*1</sup>	td(off)	VDD = 10 V, VGS = 4 V to 0 V		4.0		μs
Fall time <sup>*1</sup>	tf	ID = 1.0 A		2.0		μs

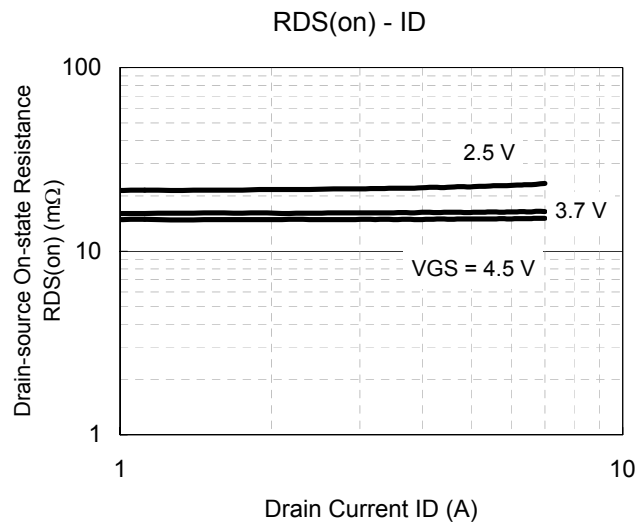
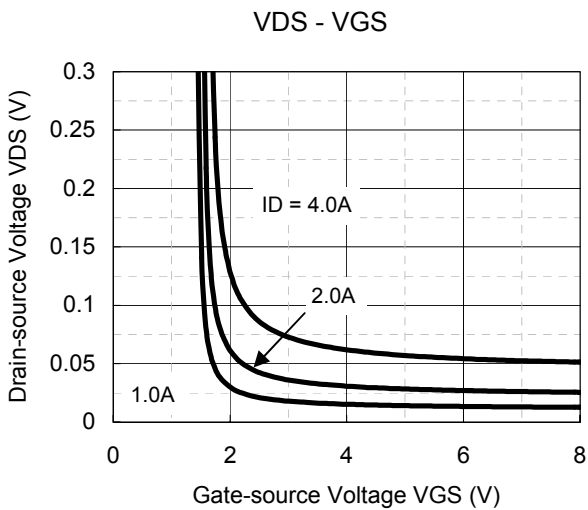
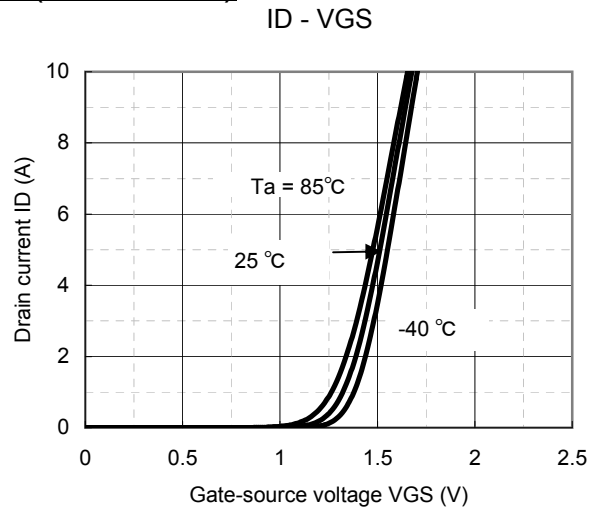
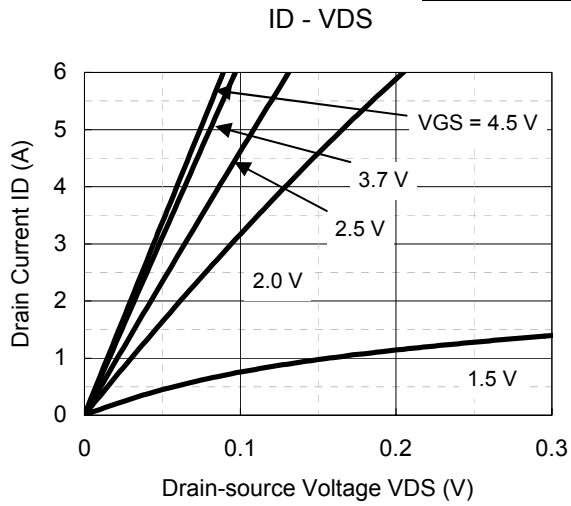
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

2. \*1 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time

\*1 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time

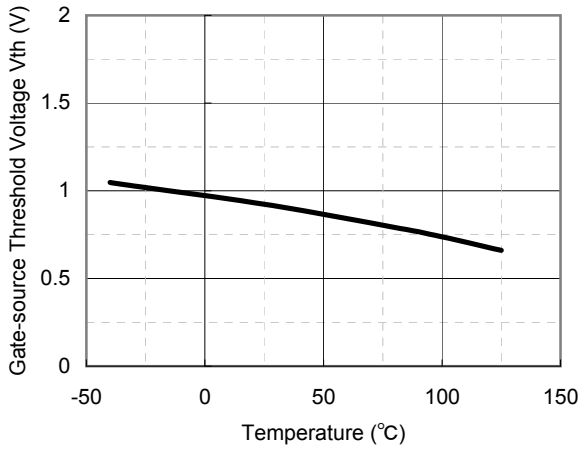


Technical Data ( reference )

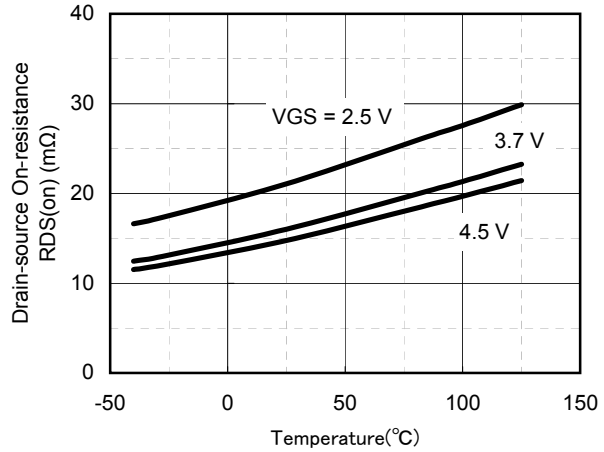


Technical Data ( reference )

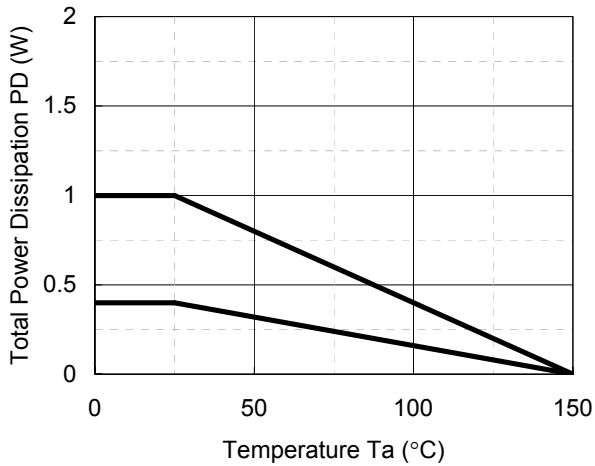
Vth - Ta



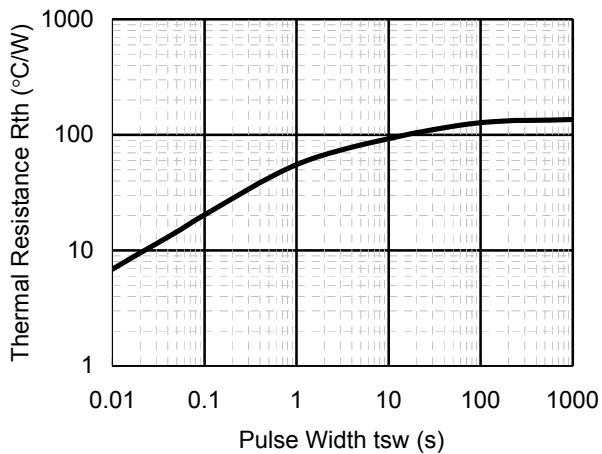
RDS(on) - Ta



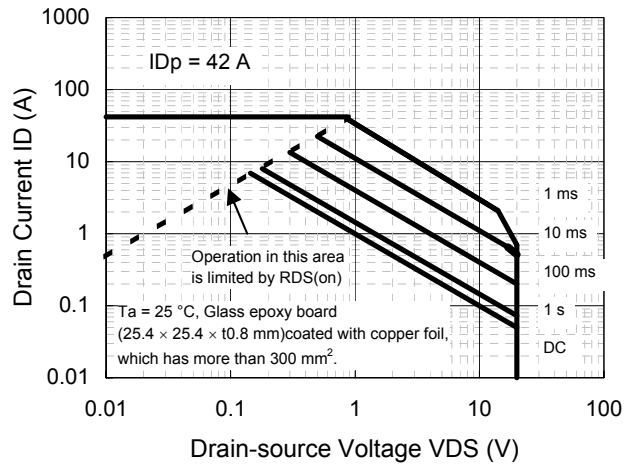
PD - Ta



Rth - tsw

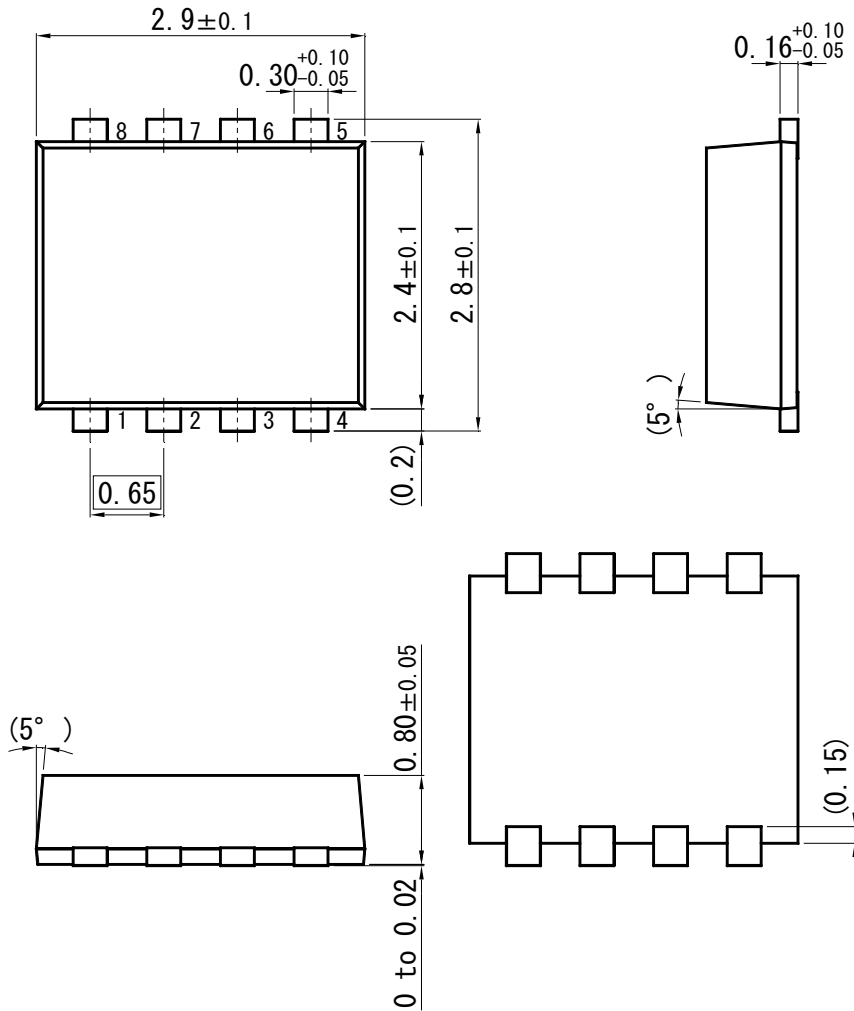


Safe Operating Area

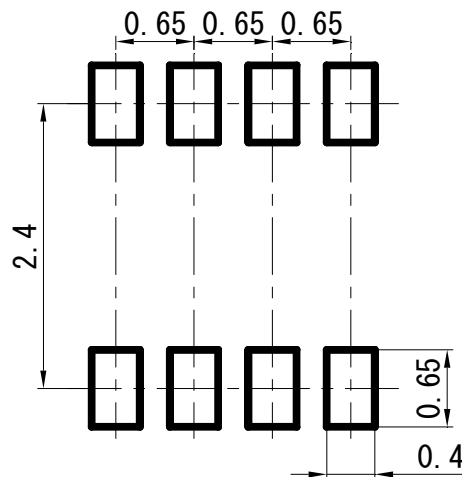


WMini8-F1

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



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