MOS FET

Panasonic

FK8V03040L

FK8V03040L

Silicon N-channel MOSFET

For lithium-ion secondary battery protecion circuit
For DC-DC Converter

■ Features

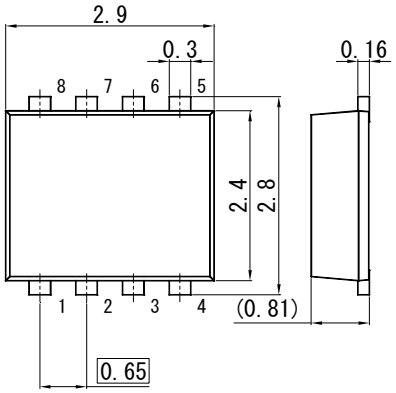
- Low drain-source On-state Resistance
  RDS(on) typ = 11 mΩ (VGS = 4.5 V)
- High-speed switching : Qg = 7.2 nC
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol: 3D

■ Packaging

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

Unit: mm



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

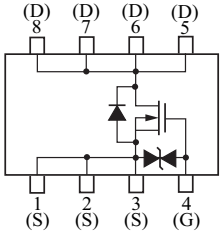
Panasonic	WMini8-F1
JEITA	SC-115
Code	—

■ Absolute Maximum Ratings Ta = 25 °C

Parameter	Symbol	Rating	Unit
Drain-source Voltage	VDS	33	V
Gate-source Voltage	VGS	±20	V
Drain Current (Steady State) *1	ID	10	A
Drain Current (t = 10 s) *1		12	
Drain Current (Pulsed) *1,*2	IDp	40	
Source Current (Pulsed) (Body Diode) *1,*2	ISp (BD)	10	
Total Power Dissipation (Steady State) *1	PD	1	W
Total Power Dissipation (t = 10 s) *1		1.5	
Channel Temperature	Tch	150	°C
Operating Ambient Temperature	Topr	-40 to + 85	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Note) *1 Device mounted on a glass-epoxy board (See Figure 1)
*2 Pulse test: Ensure that the channel temperature does not exceed 150°C.

Internal Connection



Pin Name

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

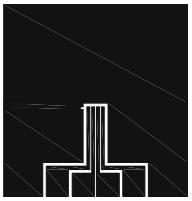


Figure1 FR4 Glass-Epoxy Board
25.4 mm × 25.4 mm × 0.8 mm

Established : 2011-04-06
Revised : 2013-07-31

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

Static Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1 mA, VGS = 0 V	33			V
Zero Gate Voltage Drain Current	IDSS	VDS = 33 V, VGS = 0 V			10	μA
Gate-source Leakage Current	IGSS	VGS = ±16 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = 1.12 mA, VDS = 10 V	1		2.5	V
Drain-source On-state Resistance *1	RDS(on)1	ID = 5A, VGS = 10 V		7	10	mΩ
	RDS(on)2	ID = 5A, VGS = 4.5 V		11	19	

Dynamic Characteristics

Input Capacitance	Ciss	VDS = 10 V, VGS = 0 V f = 1 MHz		750		pF
Output Capacitance	Coss			170		
Reverse Transfer Capacitance	Crss			100		
Turn-on Delay Time *2	td(on)	VDD = 15 V, VGS = 0 to 10 V ID = 5 A		9		ns
Rise Time *2	tr			6		
Turn-off Delay Time *2	td(off)	VDD = 15 V, VGS = 10 to 0 V ID = 5 A		46		
Fall Time *2	tf			18		
Total Gate Charge	Qg	VDD = 15 V, VGS = 0 to 4.5 V, ID = 10 A		7.2		nC
Gate-source Charge	Qgs			2.3		
Gate-drain Charge	Qgd			3.3		

Body Diode Characteristic

Diode Forward Voltage *1	VSD	IS = 5 A, VGS = 0 V		0.8	1.2	V

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
2. *1 Pulse test: Ensure that the channel temperature does not exceed 150°C.
*2 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time

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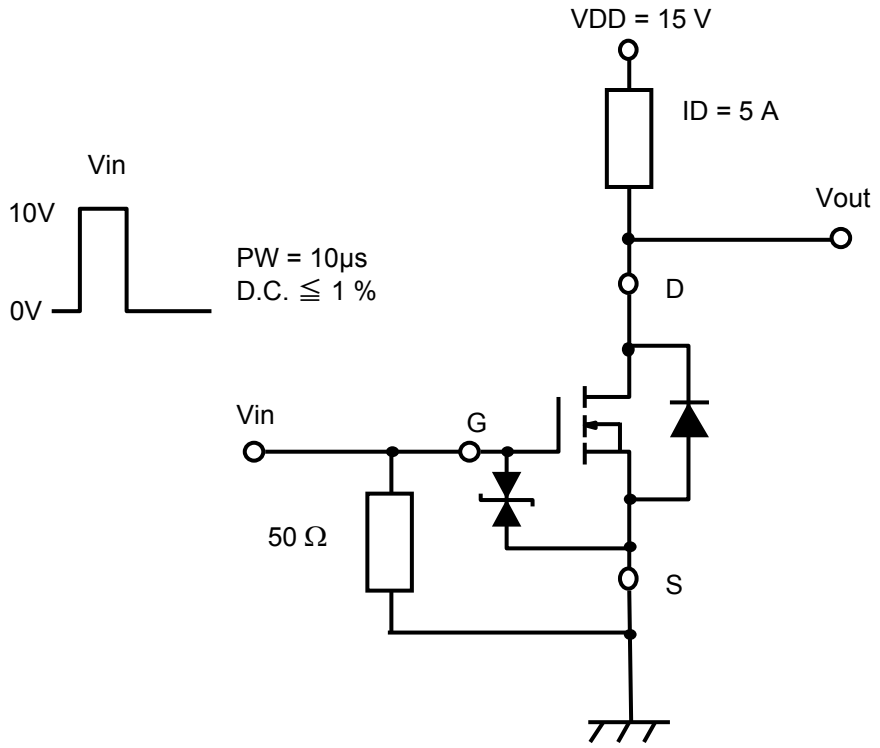
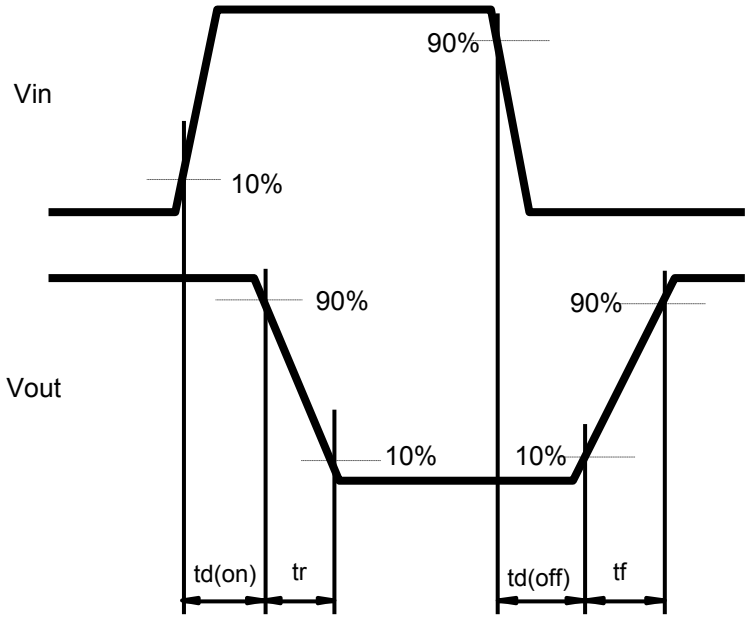
Revised : 2010-03-31

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





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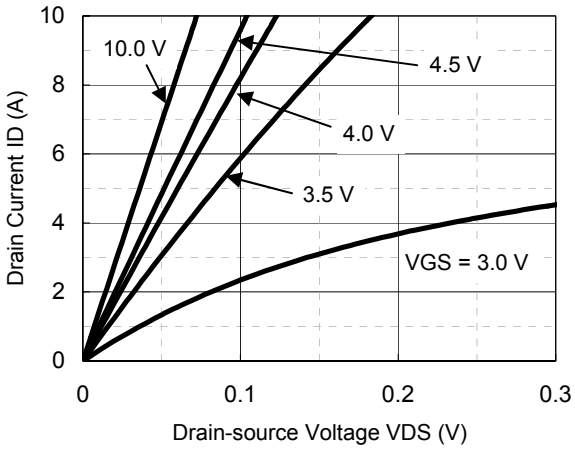
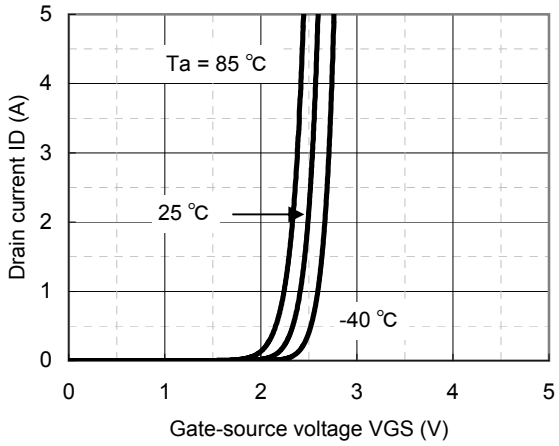
Revised : 2013-07-31

Technical Data (reference)

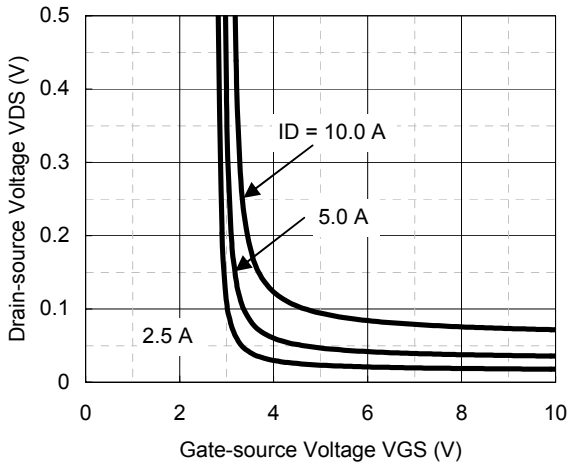
ID - VDS



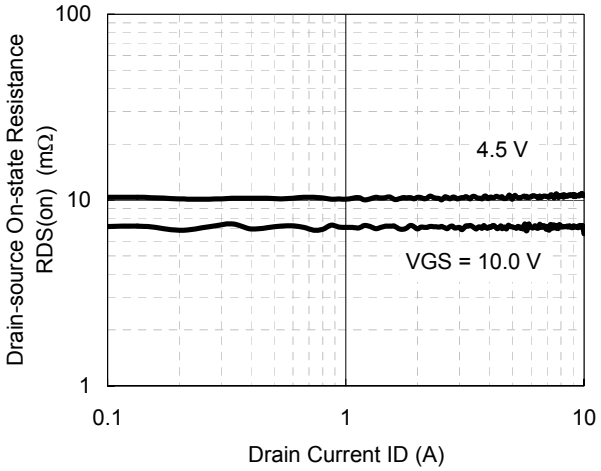
ID - VGS



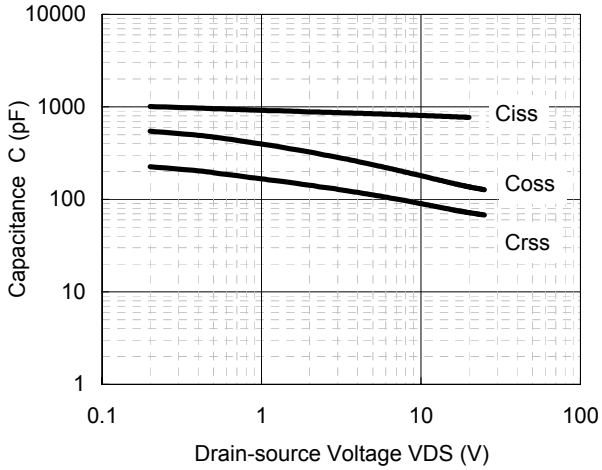
VDS - VGS



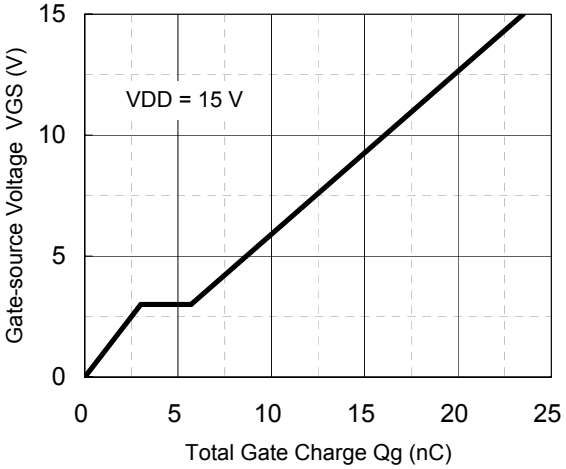
RDS(on) - ID



Capacitance - VDS



Dynamic Input/Output Characteristics



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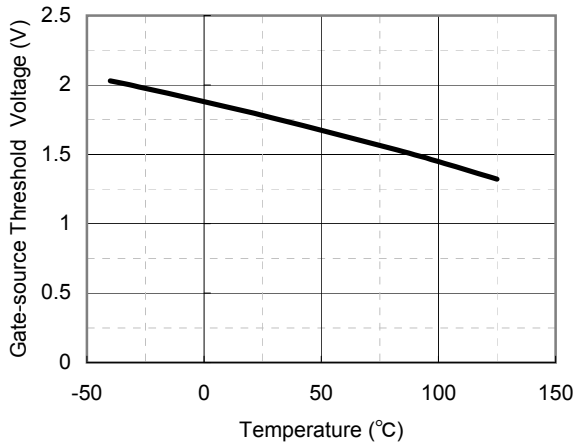
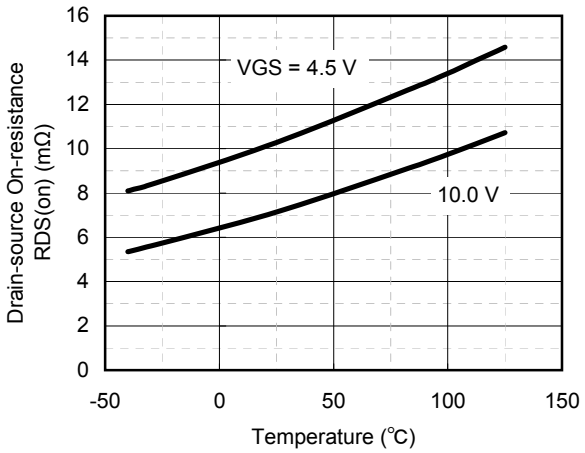
Technical Data (reference)

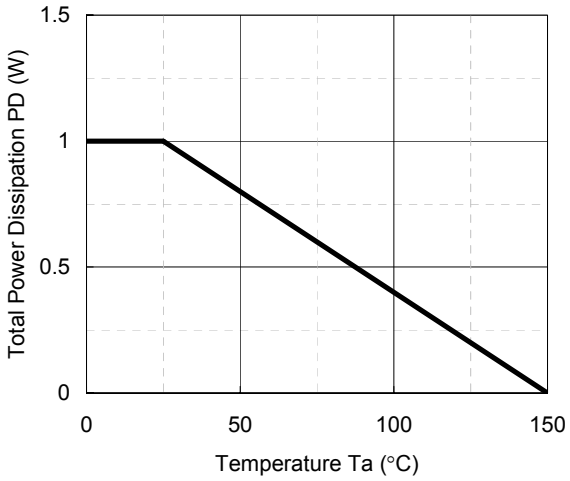
Vth - Ta



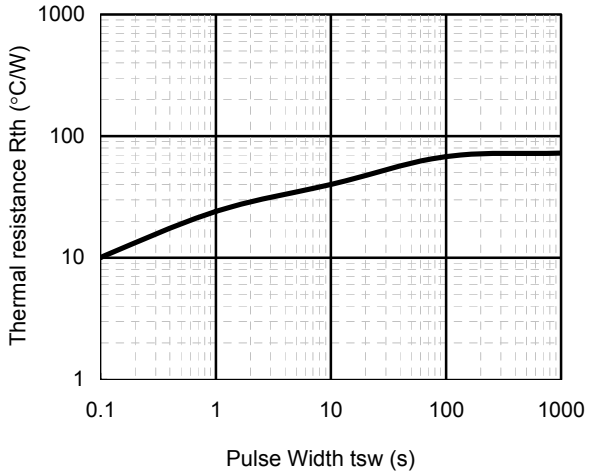
RDS(on) - Ta



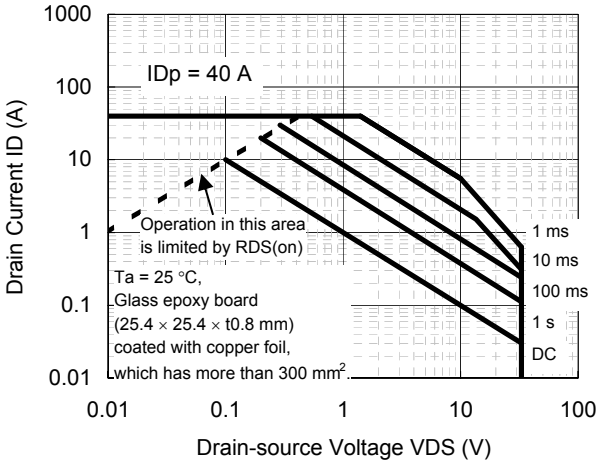
PD - Ta



Rth - tsw



Safe Operating Area



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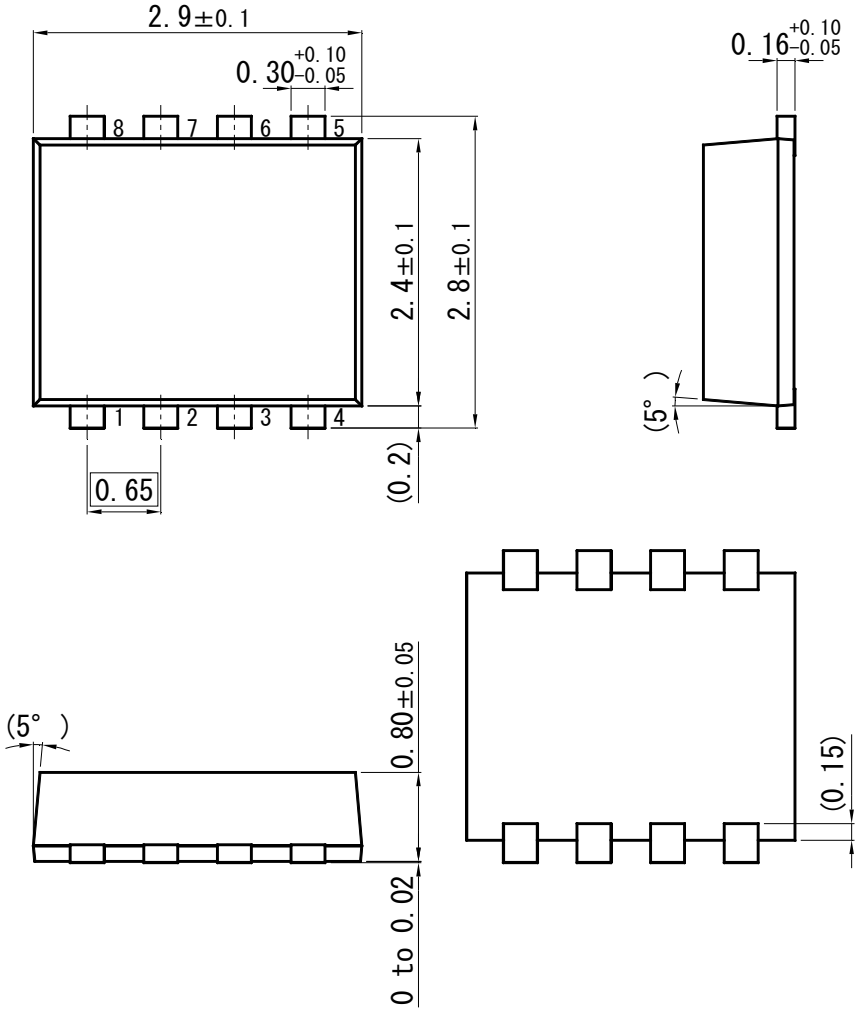
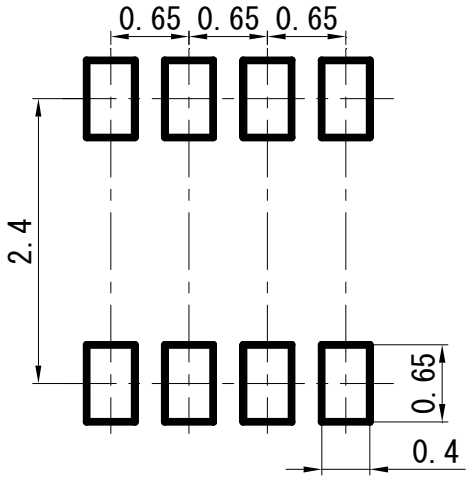
WMini8-F1

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



Established : 2011-04-06
Revised : 2013-07-31

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