MOS FET

Panasonic

FM6K62010L

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Silicon N-channel MOSFET(FET)
Silicon epitaxial planar type(SBD)

For switching
For DC-DC Converter

■ Features

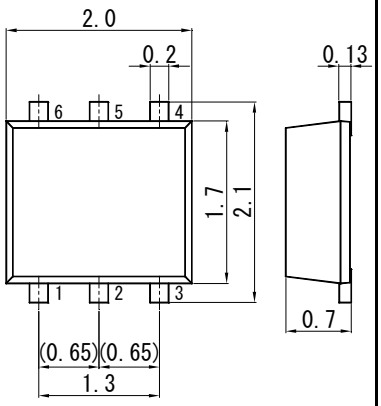
- Low drain-source ON resistance : RDS (on) typ. = 80 mΩ (VGS = 4.0 V)
- Low drive voltage : 2.5 V drive
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol : Y5

■ Packaging

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

Unit : mm



1. Gate
2 Source
3 Cathode
4. Anode
5 N/C
6 Drain

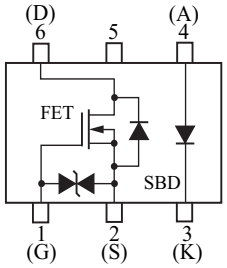
Panasonic	WSMini6-F1-B
JEITA	SC-113DA
Code	—

■ Absolute Maximum Ratings Ta = 25 °C

項目		Symbol	Rating	Unit
FET	Drain to Source Voltage	VDS	20	V
	Gate to Source Voltage	VGS	±10	V
	Drain current	ID	2.0	A
	Drain Current (Pulsed)	IDp	12	A
	Channel temperature	Tch	125	°C
SBD	Reverse voltage	VR	20	V
	Forward current (Average)	IF(AV)	1.0	A
	Non-repetitive Peak forward surge current *1	IFSM	3.0	A
	Junction temperature	Tj	125	°C
Overall	Total power dissipation *2	PD	700	mW
	Operating ambient temperature	Topr	-40 to + 85	°C
	Storage temperature	Tstg	-55 to +125	°C

Note: *1 60 Hz sine wave 1 cycle (Non-repetitive peak current)
*2 Measuring on ceramic substrate at 40 mm × 38 mm × 0.2 mm
PD absolute maximum rating without a heat shink: 150 mW

Internal Connection



Pin Name

1. Gate
2. Source
3. Cathode
4. Anode
5. N/C
6. Drain

Established : 2011-12-19
Revised : 2013-10-18

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

FET (N-ch.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain to 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	μA
Gate-source Leakage Current	IGSS	VGS = ±8 V, VDS = 0			±10	μA
Gate-source Threshold Voltage	Vth	ID = 1.0 mA, VDS = 10 V	0.4	0.85	1.3	V
Drain-source On-State Resistance	RDS(on)1	ID = 1.0 A, VGS = 4.0 V		80	105	mΩ
	RDS(on)2	ID = 0.5 A, VGS = 2.5 V		100	150	
Forward transfer admittance	|Yfs|	ID = 1.0 A, VDS = 10 V	3.0			S
Input Capacitance	Ciss	VDS = 10 V, VGS = 0, f = 1 MHz		280		pF
Output Capacitance	Coss			18		
Reverse Transfer Capacitance	Crss			17		
Turn-on delay time *1	td(on)	VDD = 10 V, VGS = 0 V to 4 V		5		ns
Rise time *1	tr	ID = 1.0 A		8		
Turn-off delay time *1	td(off)	VDD = 10 V, VGS = 4 V to 0 V		20		ns
Fall time *1	tf	ID = 1.0 A		18		

Note: 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
2. *1 Turn-on, Turn-off measurement circuit

SBD

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	VF1	IF = 800 mA			0.47	V
	VF2	IF = 1.0 A			0.52	V
Reverse current	IR	VR = 20 V			80	μA

Note: Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 Measuring methods for diodes.

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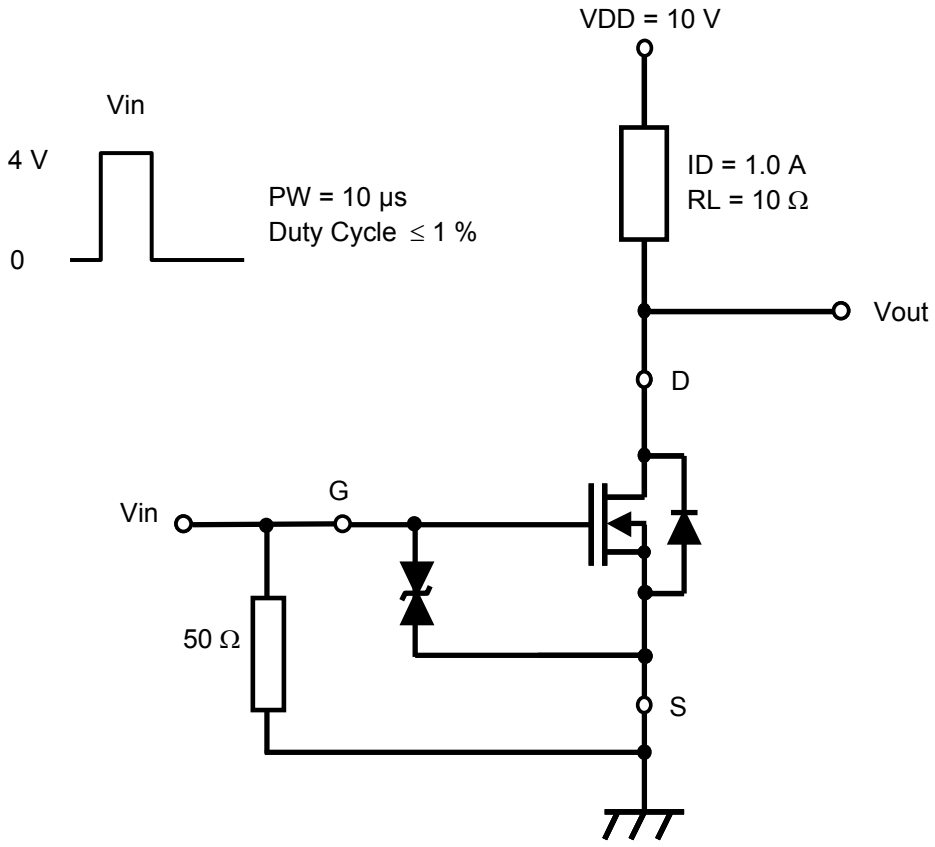
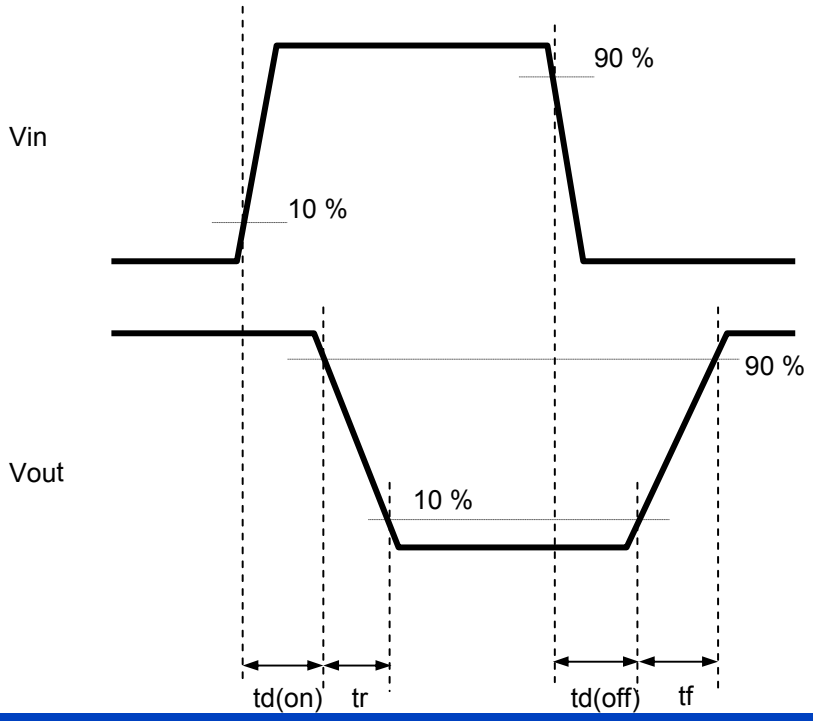
*1 Turn-on, Turn-off measurement circuit





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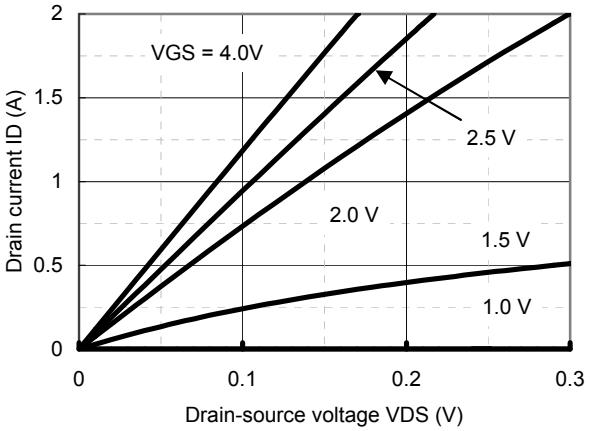
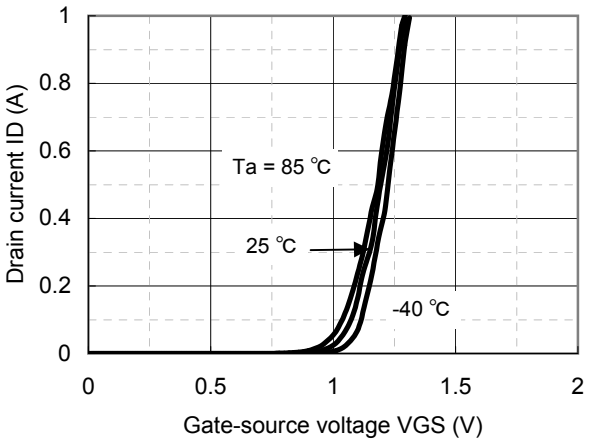
Technical Data (reference)

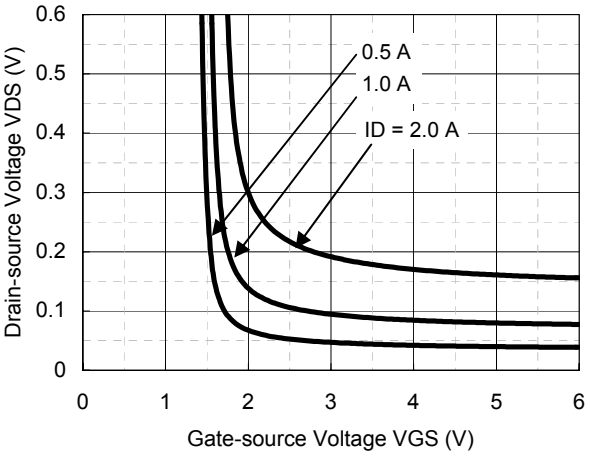
ID - VDS



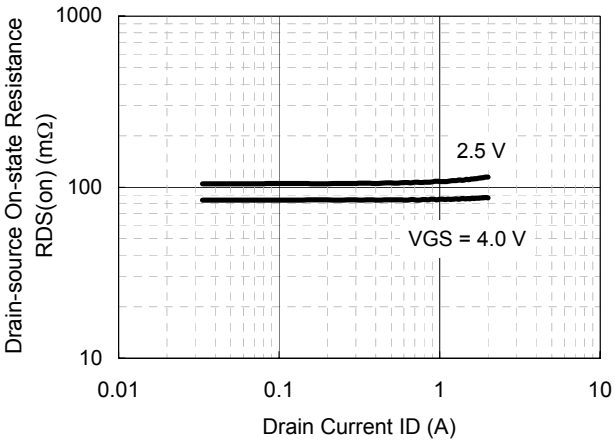
ID - VGS



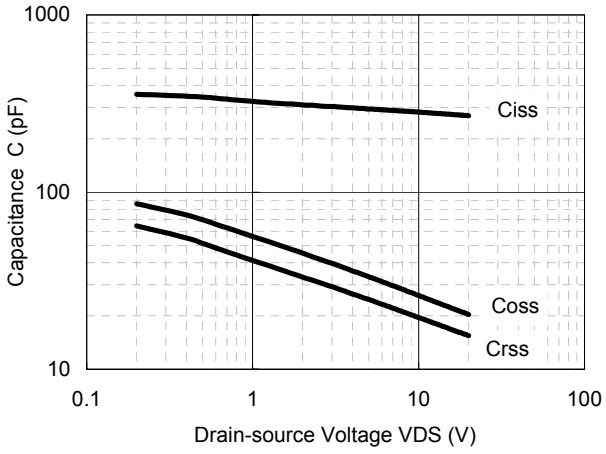
VDS - VGS



RDS(on) - ID



Capacitance - VDS



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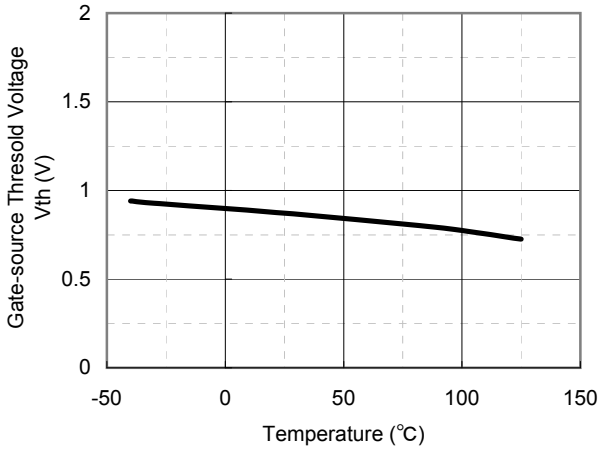
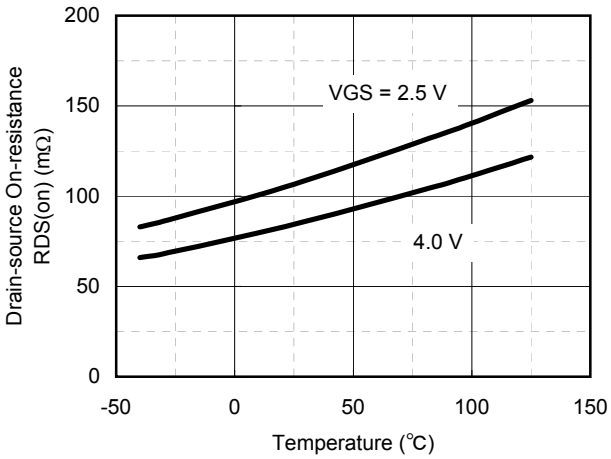
Technical Data (reference)

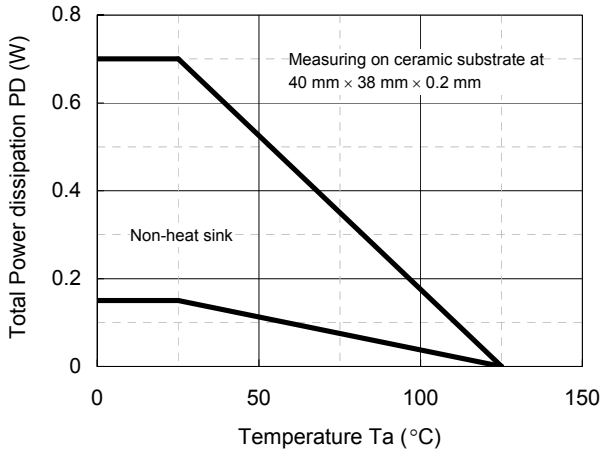
Vth - Ta



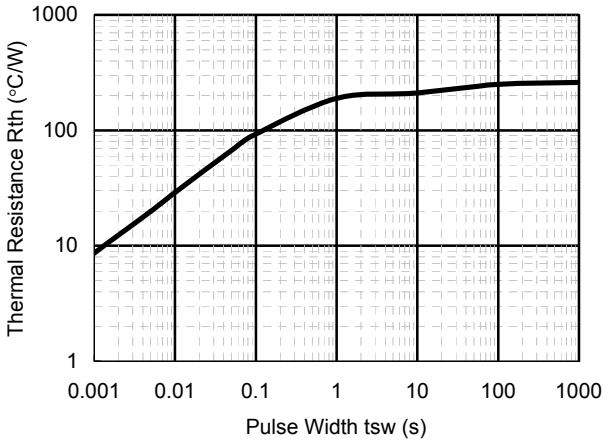
RDS(on) - Ta



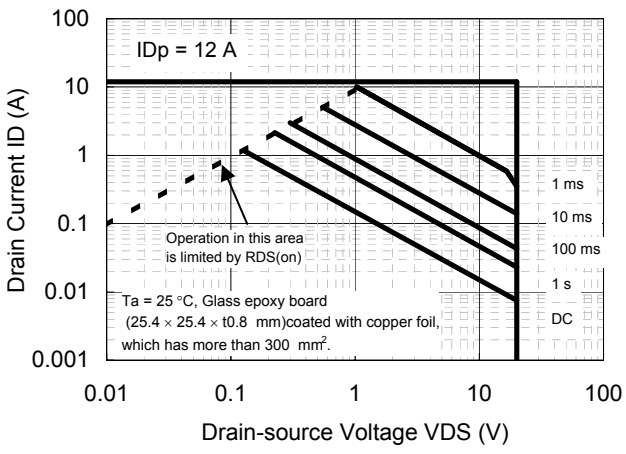
PD - Ta



Rth - tsw



Safe Operating Area



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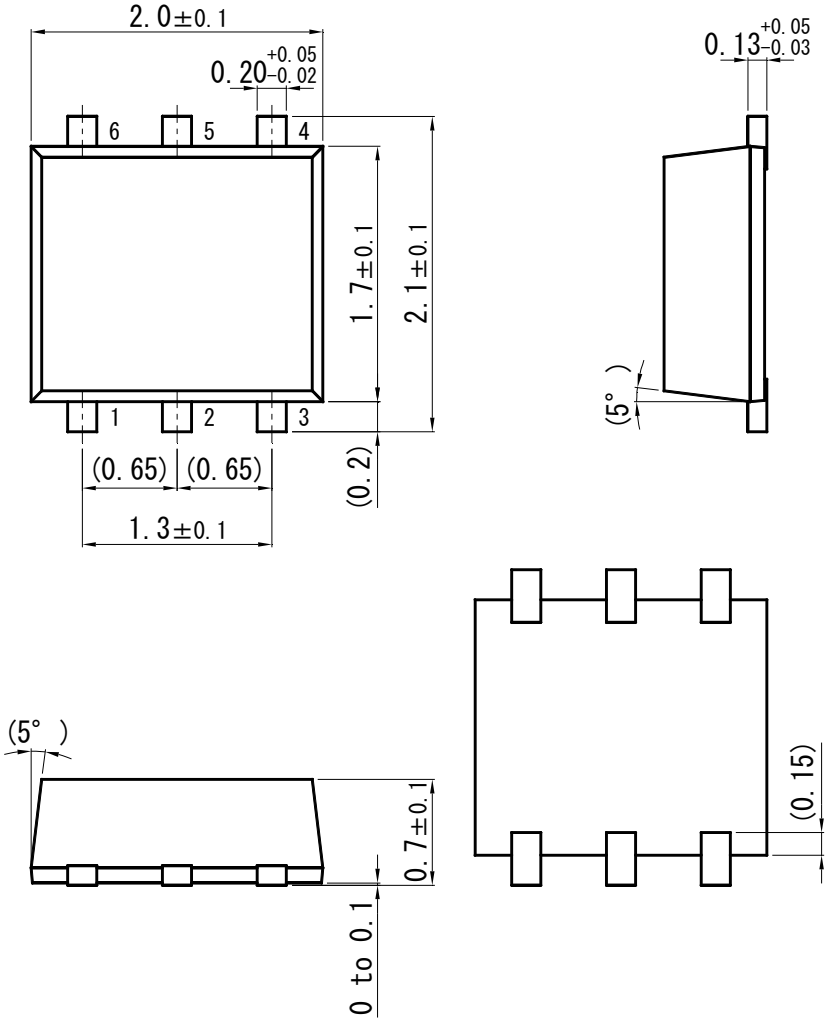
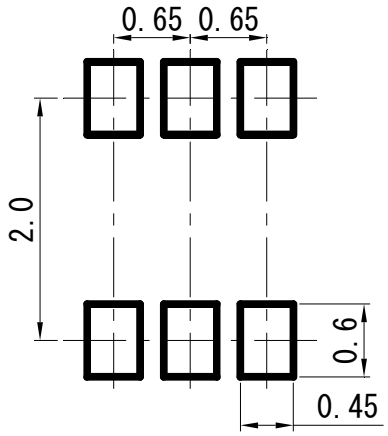
WSMini6-F1-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



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