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MOS FET

Panasonic FM6L52020L

FM6L52020L

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

For switching
For DC-DC Converter

■ Features

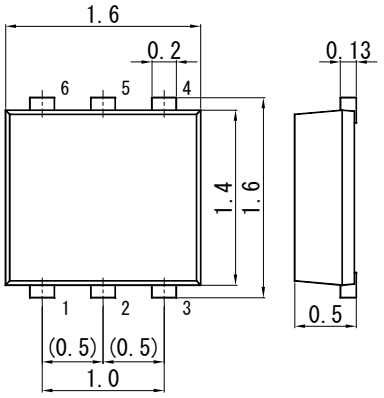
- Low drain-source ON resistance : RDS (on) typ. = 80 mΩ (VGS = 4.0 V)
- Low drive voltage : 1.8 V drive
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol : Y6

■ Packaging

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

Unit : mm



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

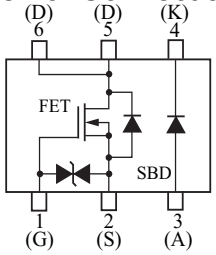
Panasonic	WSSMini6-F1
JEITA	—
Code	—

■ 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	2.2	A
	Peak drain current	IDp	8.0	A
	Channel temperature	Tch	150	°C
SBD	Reverse voltage	VR	20	V
	Forward current (Average)	IF(AV)	800	mA
	Junction temperature	Tj	125	°C
Overall	Total power dissipation *1	PD	540	mW
	Operating ambient temperature	Topr	-40 to +85	°C
	Storage temperature	Tstg	-55 to +125	°C

Note) *1 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. Anode
4. Cathode
5. Drain
6. Drain

Established : 2011-03-22
Revised : 2013-10-18

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

FET (N-ch.)

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 V, VDS = 0			±10	μA
Gate threshold voltage	VTH	ID = 1.0 mA, VDS = 10 V	0.4	0.85	1.3	V
Drain-source ON resistance *1	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 *1	|Yfs|	ID = 1.0 A, VDS = 10 V, f = 1 kHz	3.0			S
Short-circuit input capacitance (Common source)	Ciss	VDS = 10 V, VGS = 0, f = 1 MHz		280		pF
Short-circuit output capacitance (Common source)	Coss			18		
Reverse transfer capacitance (Common source)	Crss			17		
Turn-on delay time *2	td(on)	VDD = 10 V, VGS = 0 to 4.0 V ID = 1.0 A		5		ns
Rise time *2	tr			8		
Turn-off delay time *2	td(off)	VDD = 6 V, VGS = 4.0 to 0 V ID = 1.0 A		20		ns
Fall time *2	tf			18		

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
2. *1 Pulse measurement
*2 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time

SBD

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	VF	IF = 800 mA			0.47	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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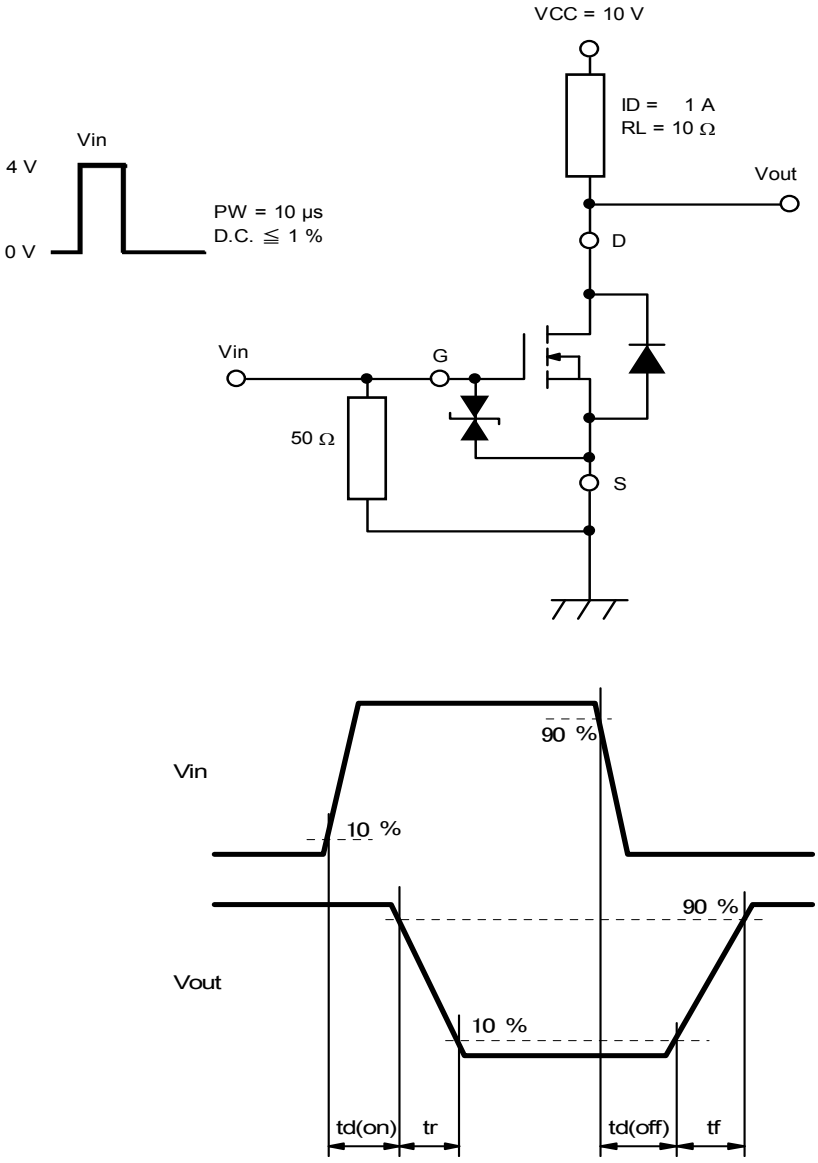
*2 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time



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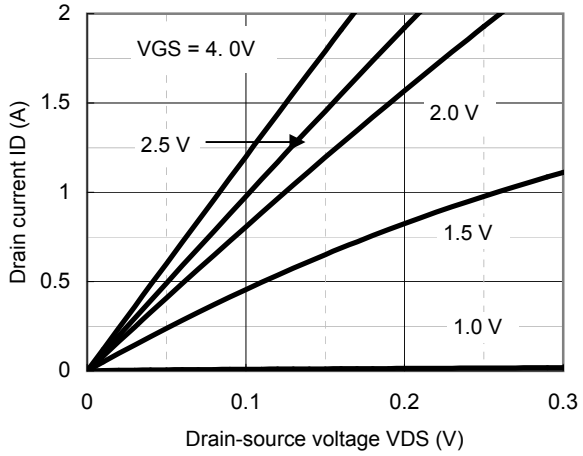
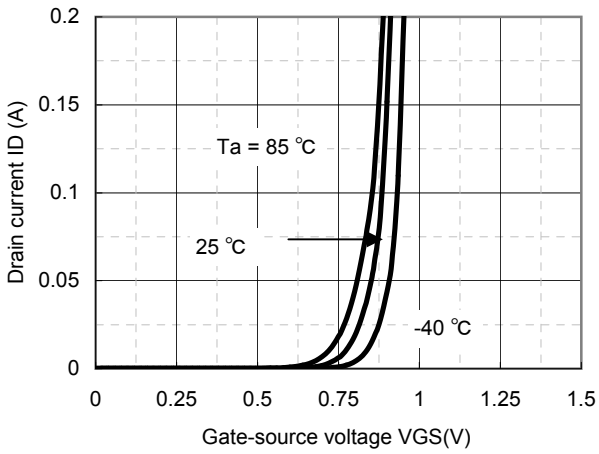
Technical Data (reference)

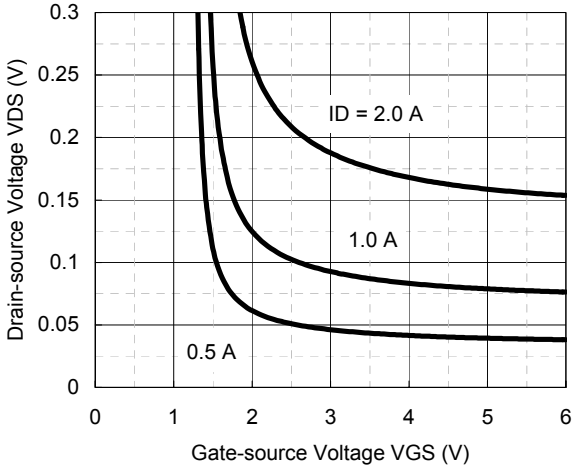
ID - VDS



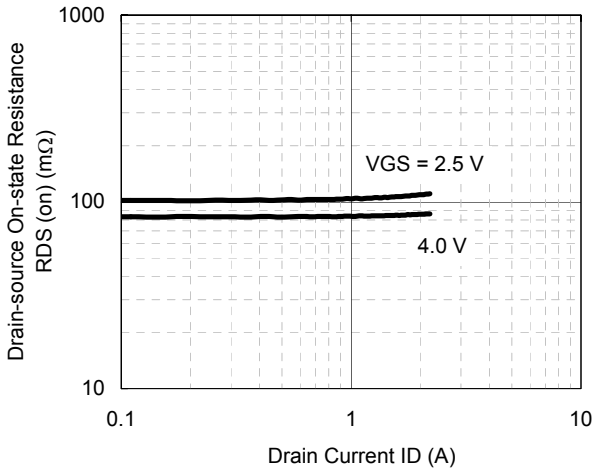
ID - VGS



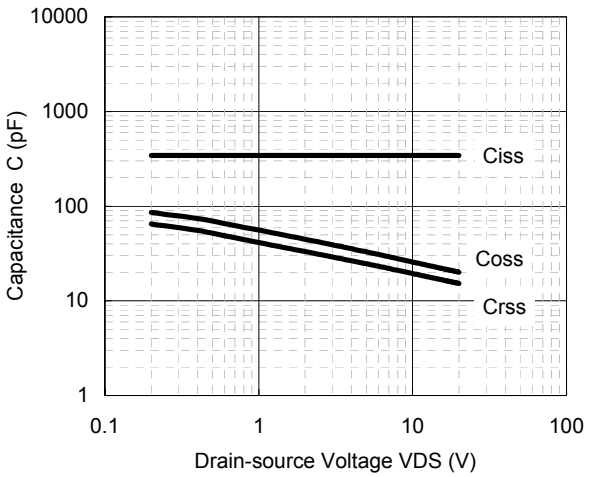
VDS - VGS



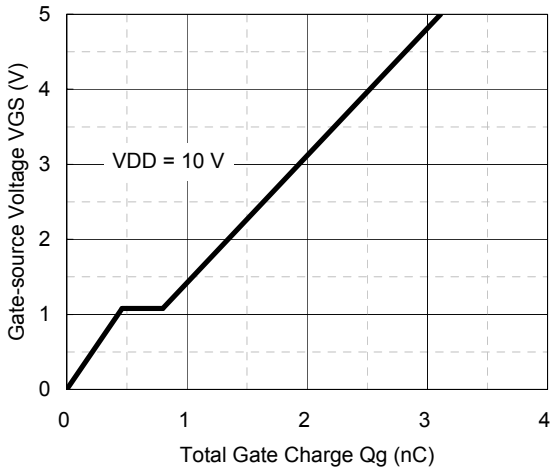
RDS(on) - ID



Capacitance - VDS



Dynamic Input/Output Characteristics



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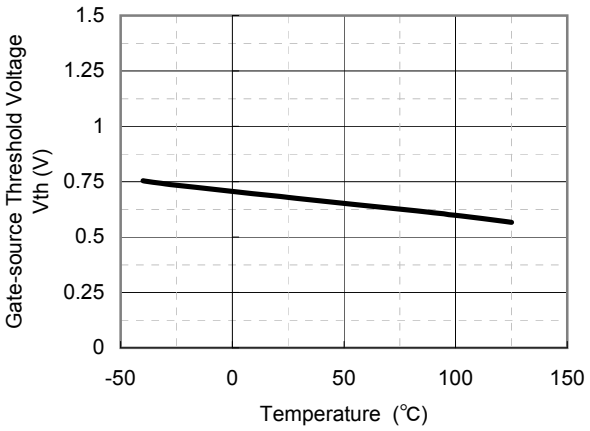
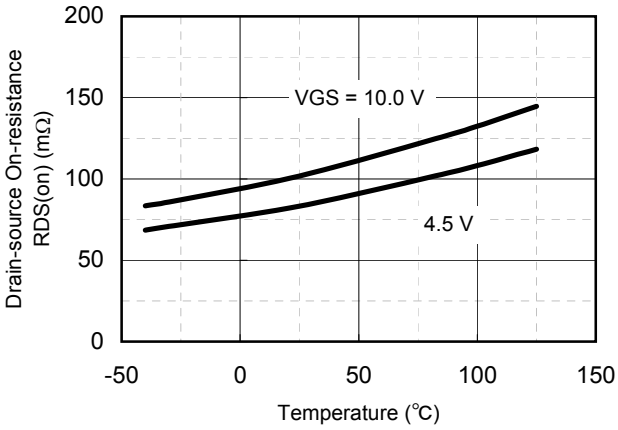
Technical Data (reference)

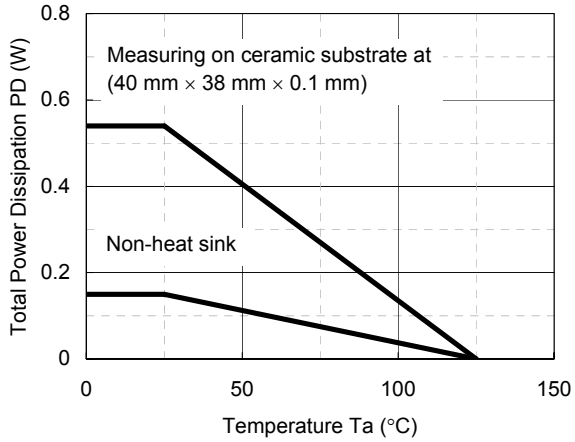
Vth - Ta



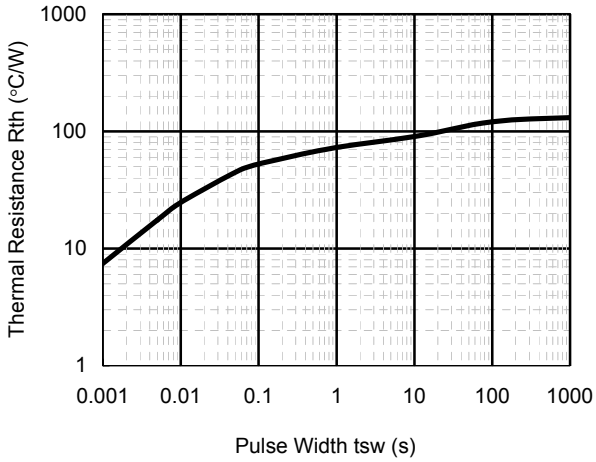
RDS(on) - Ta



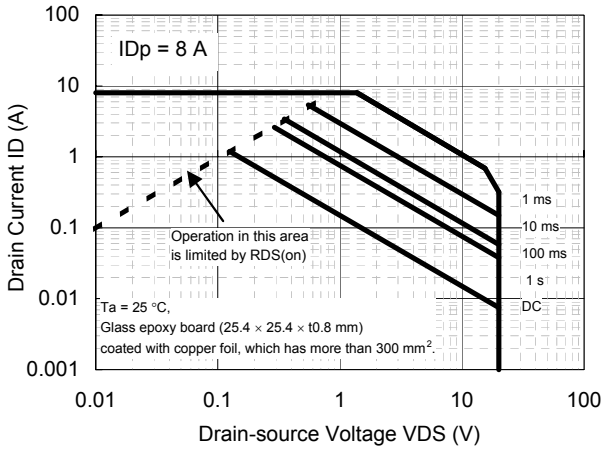
PD - Ta



Rth - tsw



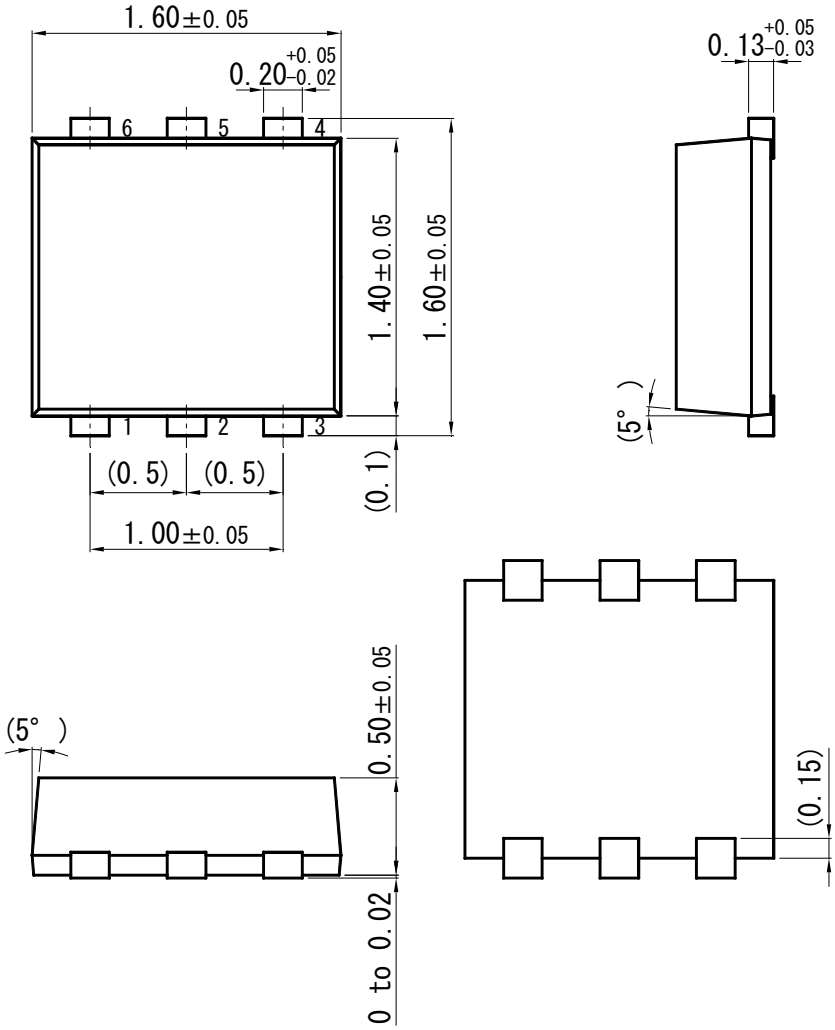
Safe Operating Area



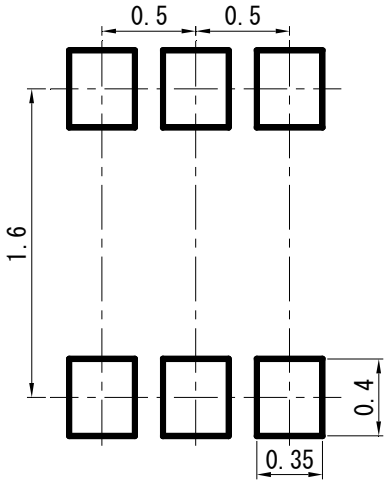
Established : 2011-03-22
Revised : 2013-10-18

WSSMini6-F1

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



Established : 2011-03-22
Revised : 2013-10-18

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