



FM6L52020L

Silicon N-channel MOSFET(FET)

Silicon epitaxial planar type(SBD)

For switching

For DC-DC Converter

■ Features

- Low drain-source ON resistance : $R_{DS(on)}$ typ. = $80\text{ m}\Omega$ ($V_{GS} = 4.0\text{ V}$)
- Low drive voltage : 1.8 V drive
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol : Y6

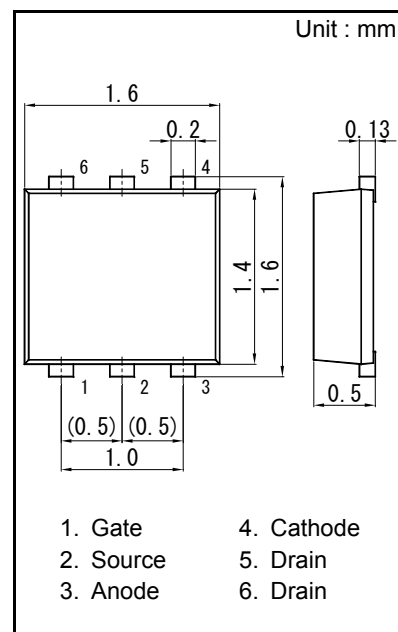
■ Packaging

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

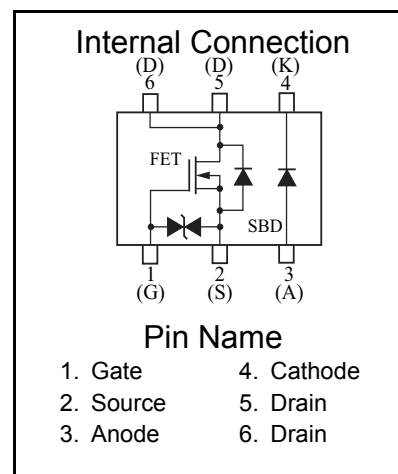
■ Absolute Maximum Ratings $T_a = 25\text{ }^\circ\text{C}$

項目	Symbol	Rating	Unit
FET	Drain to Source Voltage	V_{DS}	20
	Gate to Source Voltage	V_{GS}	± 10
	Drain current	I_D	2.2
	Peak drain current	I_{Dp}	8.0
	Channel temperature	T_{ch}	150
SBD	Reverse voltage	V_R	20
	Forward current (Average)	$I_F(AV)$	800
	Junction temperature	T_j	125
Overall	Total power dissipation ^{*1}	P_D	540
	Operating ambient temperature	T_{opr}	-40 to +85
	Storage temperature	T_{stg}	-55 to +125

Note) ^{*1} Measuring on ceramic substrate at $40\text{ mm} \times 38\text{ mm} \times 0.2\text{ mm}$
PD absolute maximum rating without a heat sink: 150 mW



Panasonic	WSSMini6-F1
JEITA	—
Code	—



■ 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		5		ns
Rise time *2	tr	ID = 1.0 A		8		
Turn-off delay time *2	td(off)	VDD = 6 V, VGS = 4.0 to 0 V		20		ns
Fall time *2	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 Pulse measurement

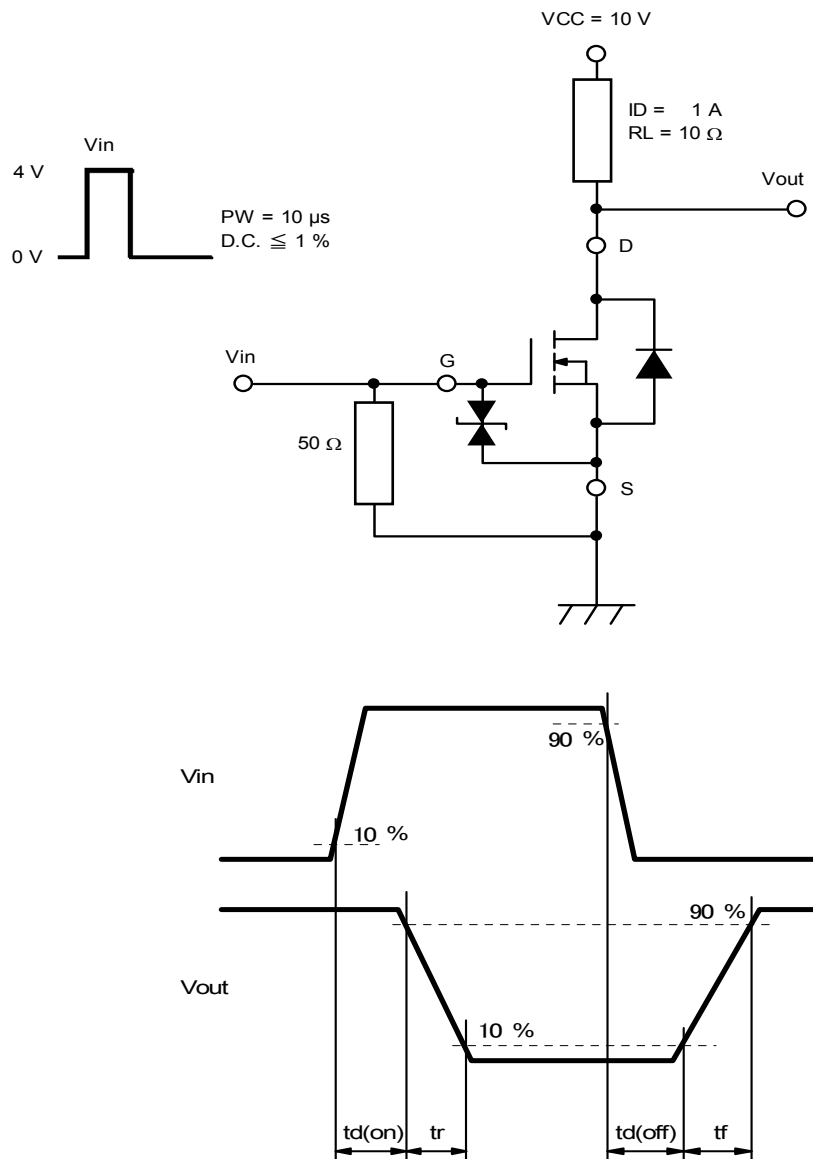
*2 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time

SBD

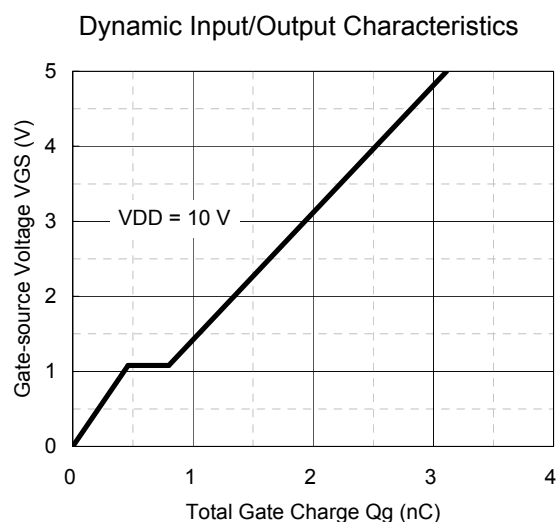
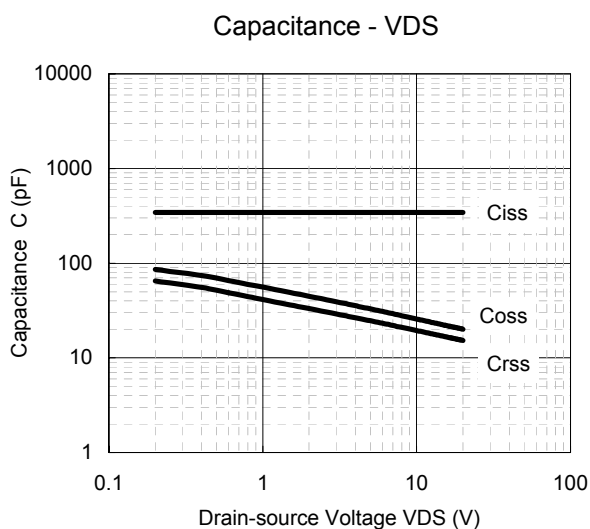
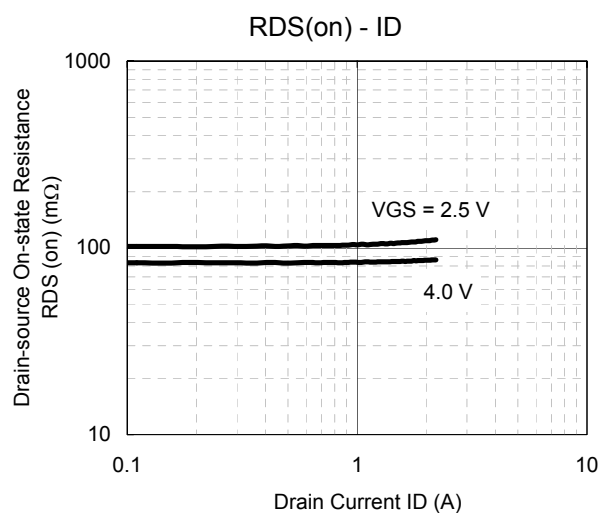
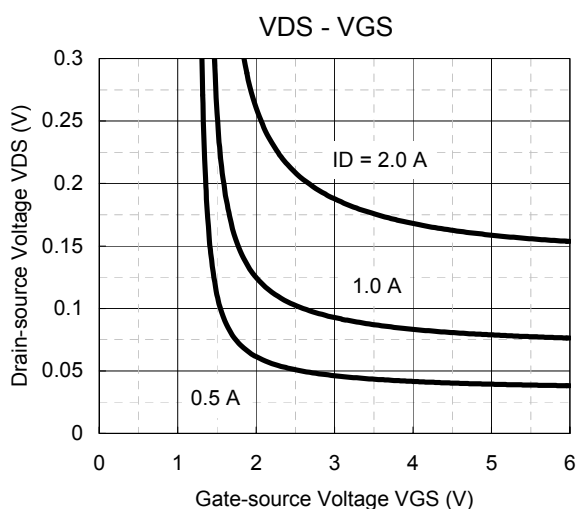
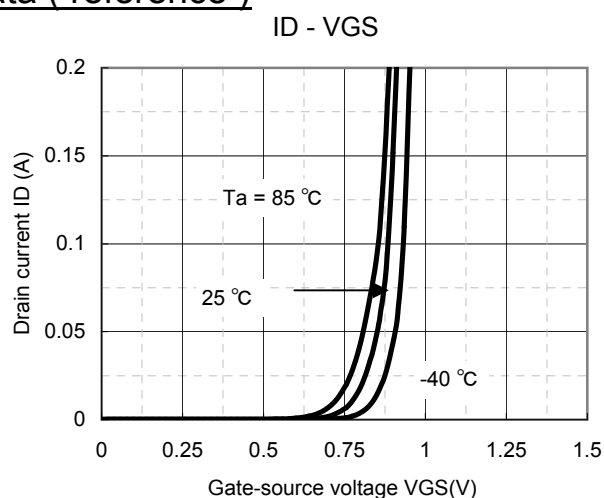
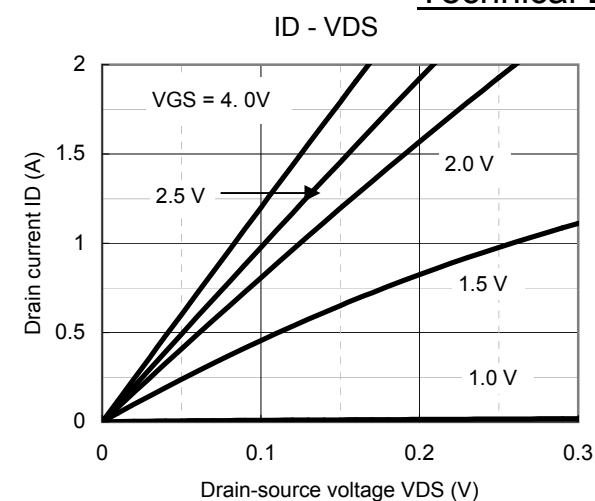
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	VF	IF = 800 mA			0.47	V
Reverse current	IR	VR = 20 V			80	μA

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

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

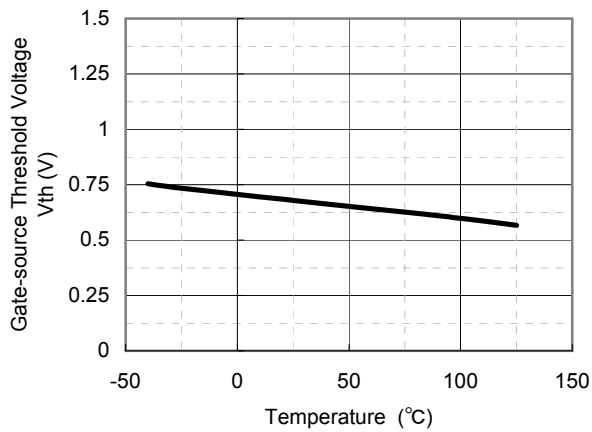


Technical Data (reference)

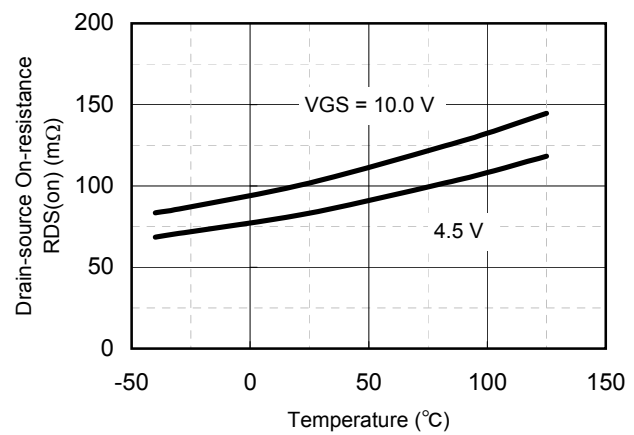


Technical Data (reference)

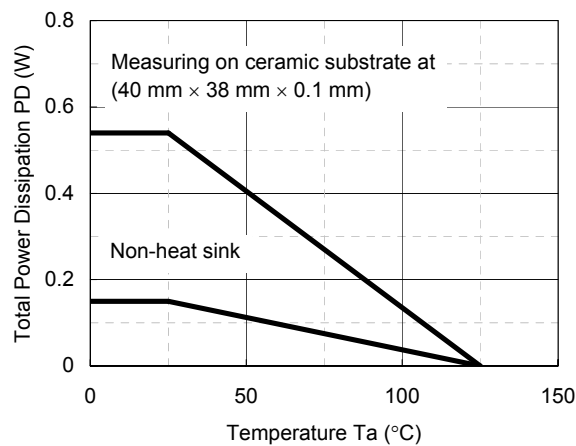
V_{th} - T_a



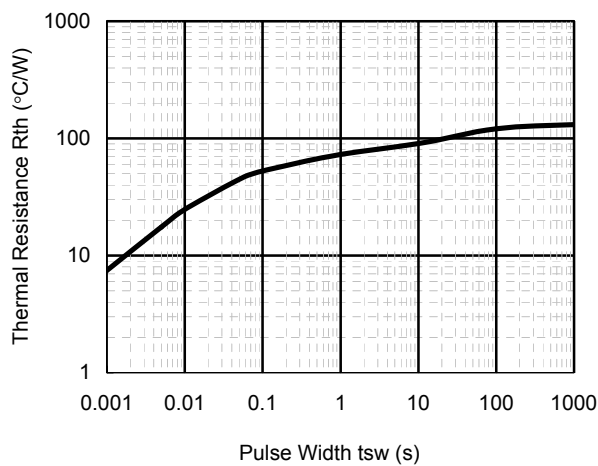
R_{DS(on)} - T_a



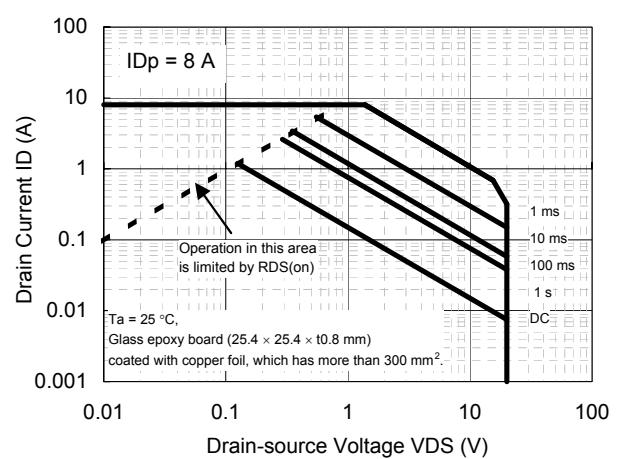
P_D - T_a



R_{th} - t_{sw}

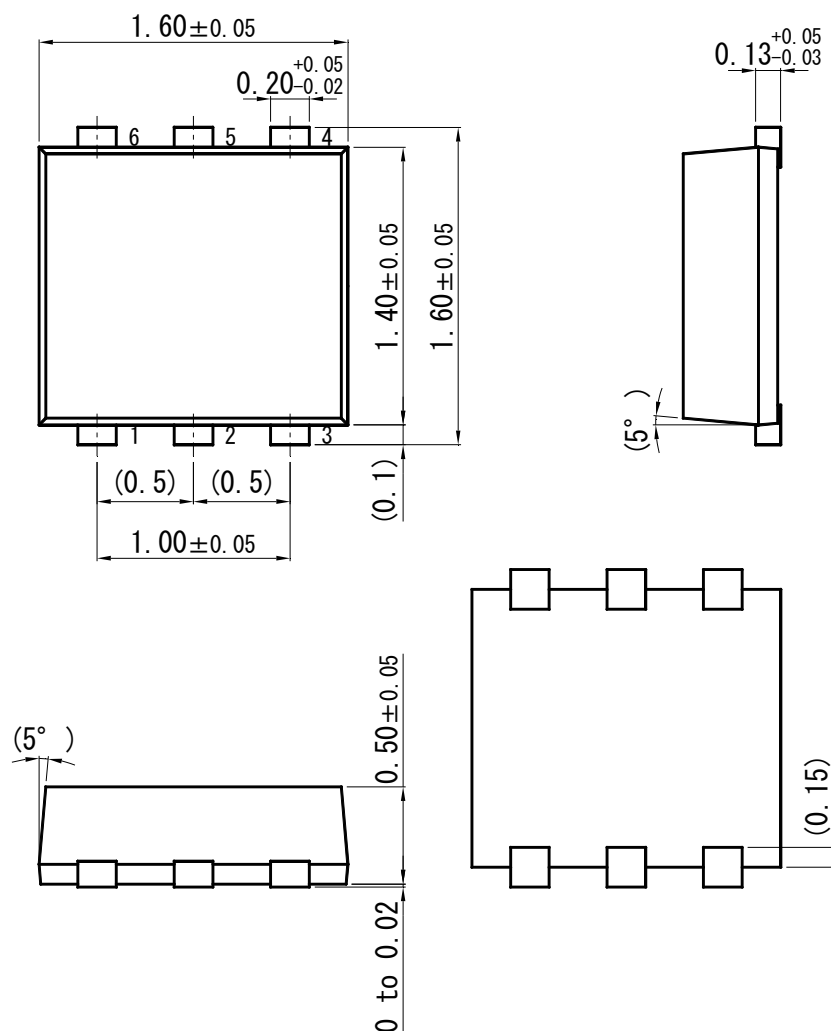


Safe Operating Area

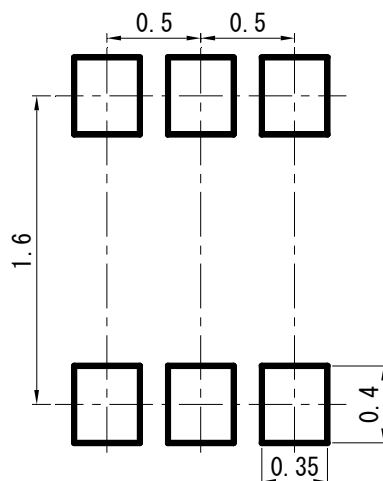


WSSMini6-F1

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



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Промышленная ул, дом № 19, литера Н,
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