

# FK6K02010L

## Silicon N-channel MOS FET

For switching

■ Features

- Low drain-source On-state Resistance:  $R_{DS(on)typ.} = 13\text{ m}\Omega$  ( $V_{GS} = 4.5\text{ V}$ )
- Low drive voltage: 2.5 V drive
- Halogen-free / RoHS compliant  
 (EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : TA

■ Packaging

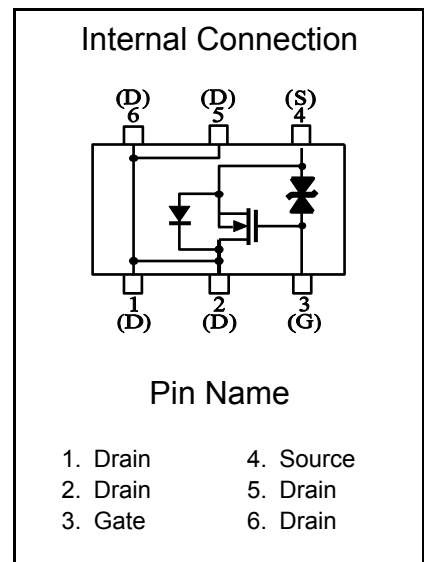
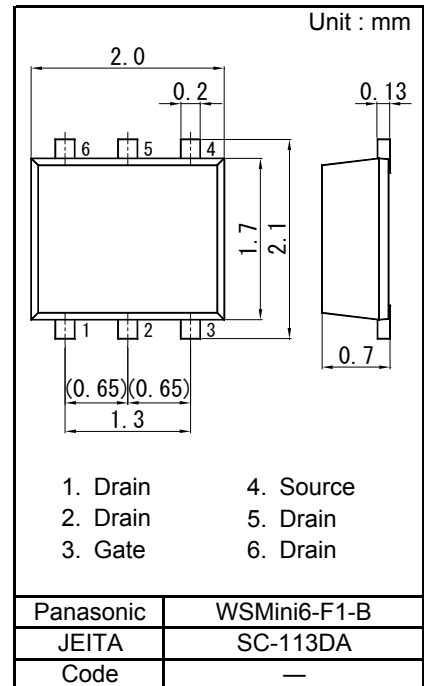
Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

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

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	VDSS	20	V
Gate-source surrender voltage	VGSS	$\pm 10$	V
Drain current	ID	4.5	A
Peak drain current <sup>*1</sup>	IDp	18	A
Power dissipation <sup>*2</sup>	PD	700	mW
Channel temperature	Tch	150	$^\circ\text{C}$
Operating ambient temperature	Topr	-40 to +85	$^\circ\text{C}$
Storage temperature	Tstg	-55 to +150	$^\circ\text{C}$

Note) \*1  $t = 10\text{ }\mu\text{s}$ , Duty Cycle < 1%

\*2 Measuring on Glass epoxy board ( $25.4 \times 25.4 \times 1.0\text{ mm}$ )  
 coated with copper foil, which has more than  $300\text{ mm}^2$   
 Absolute maximum rating without heat sink for PD is 150 mW.



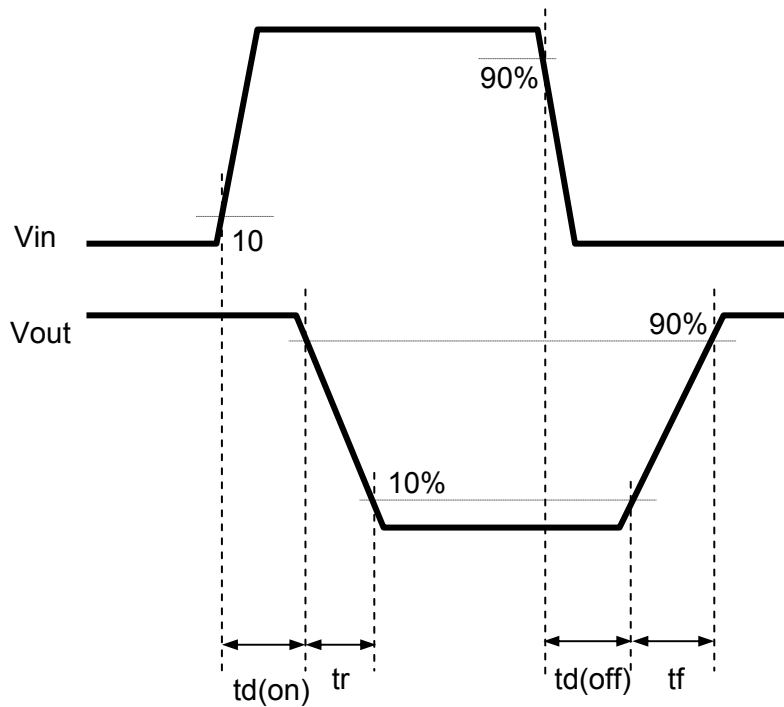
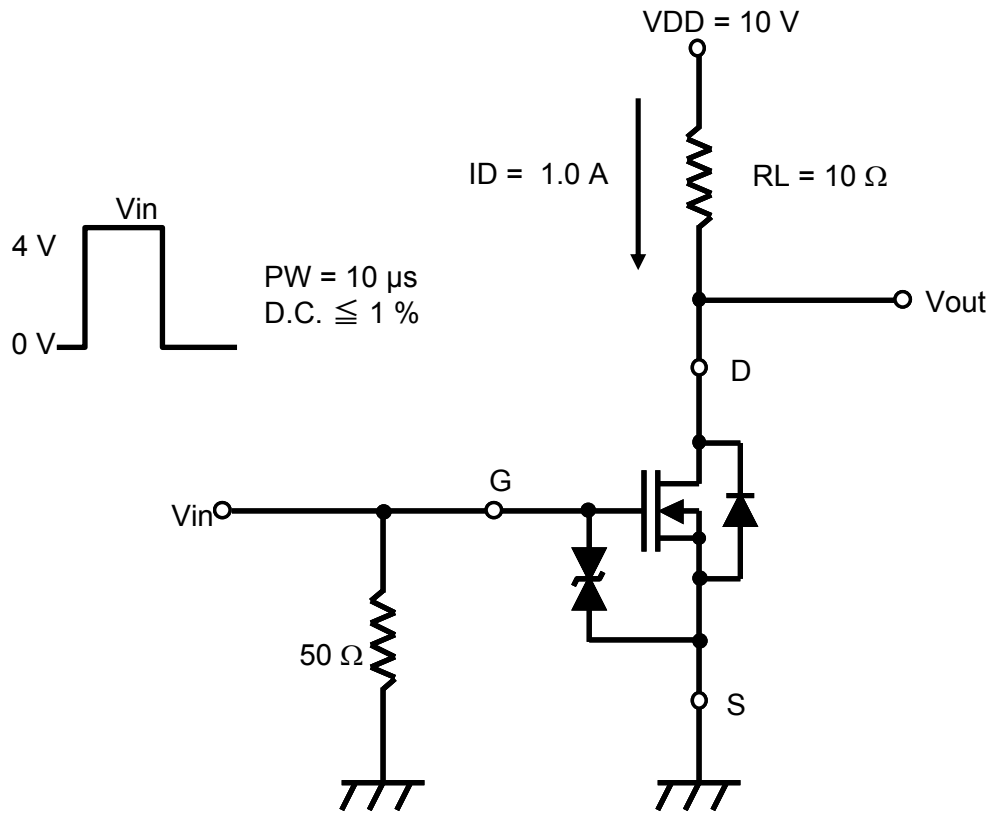
■ Electrical Characteristics Ta = 25 °C ± 3 °C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	VDSS	ID = 1 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 = 10.0 V	0.4	0.85	1.3	V
Drain-source ON resistance	RDS(ON)1	ID = 2.0 A, VGS = 4.5 V		13	17.5	mΩ
	RDS(ON)2	ID = 1.0 A, VGS = 2.5 V		16	28	
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		1 730		pF
Short-circuit output capacitance (Common source)	Coss			155		pF
Reverse transfer capacitance (Common source)	Crss			150		pF
Turn-on delay time <sup>*1</sup>	td(on)				19	
Rise time <sup>*1</sup>	tr	VDD = 10 V		30		ns
Turn-off delay time <sup>*1</sup>	td(off)	VGS = 0 to 4 V		150		ns
Fall time <sup>*1</sup>	tf	ID=1.0A		75		ns

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

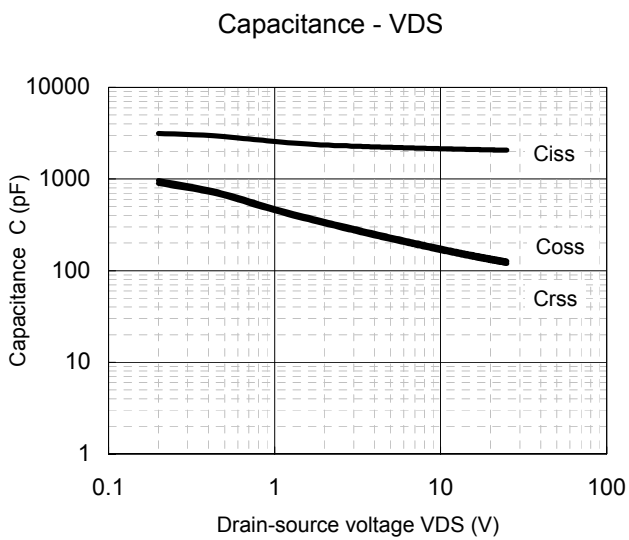
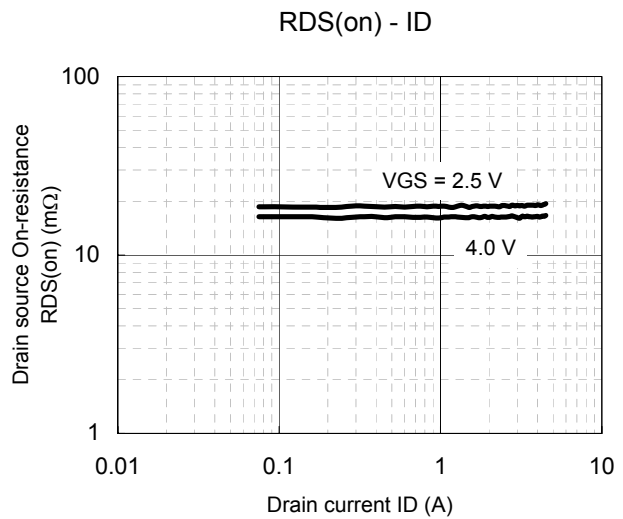
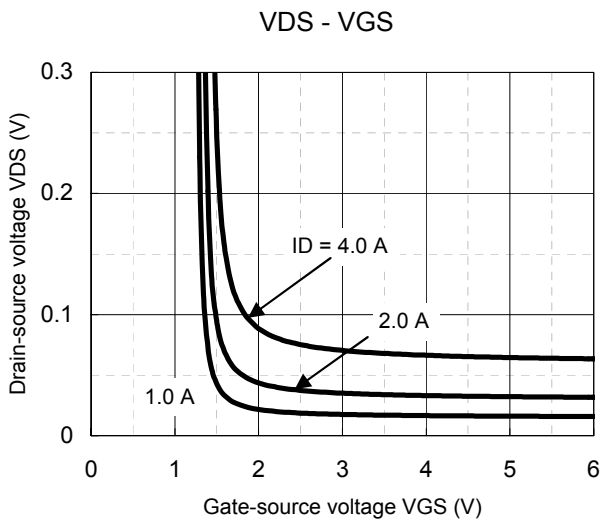
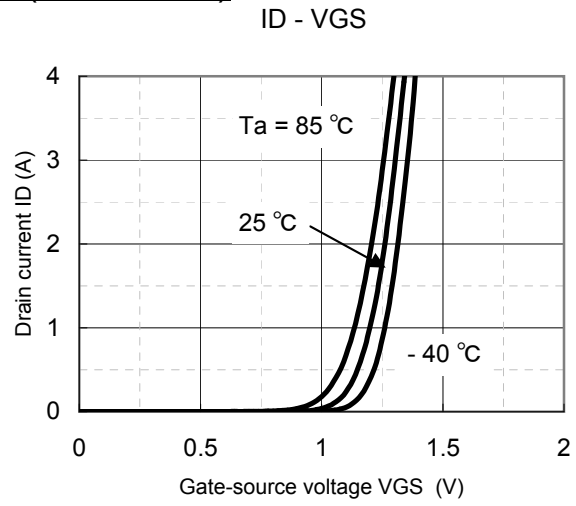
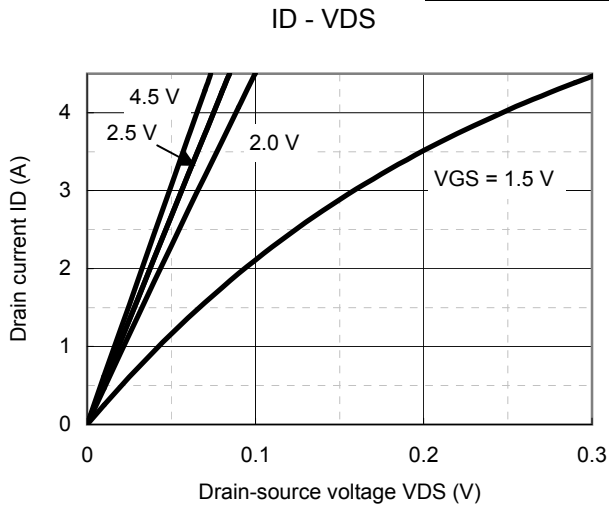
2. \*1 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time

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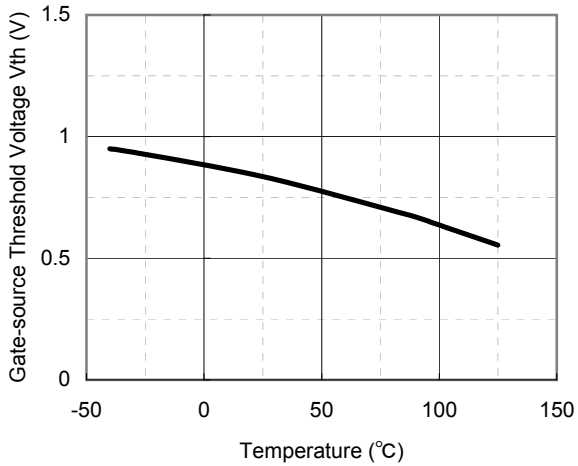


Technical Data ( reference )

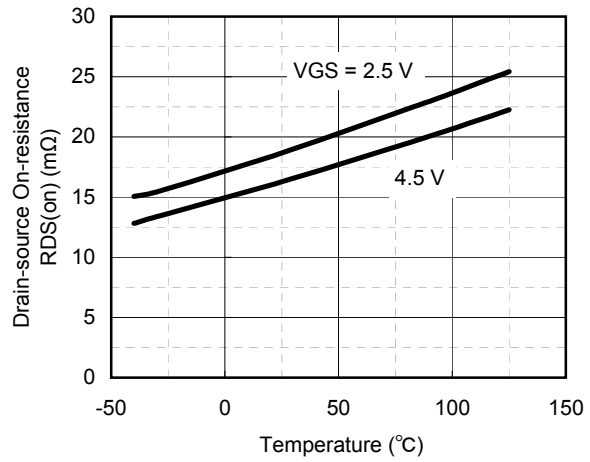


Technical Data ( reference )

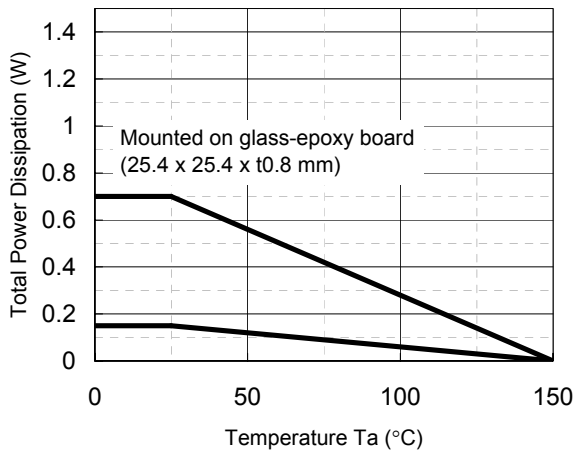
Vth - Ta



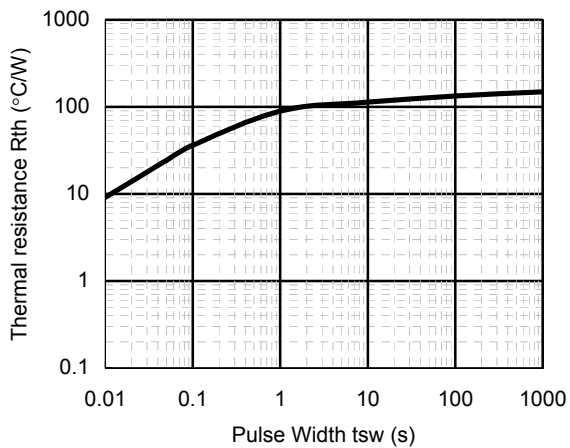
RDS(on) - Ta



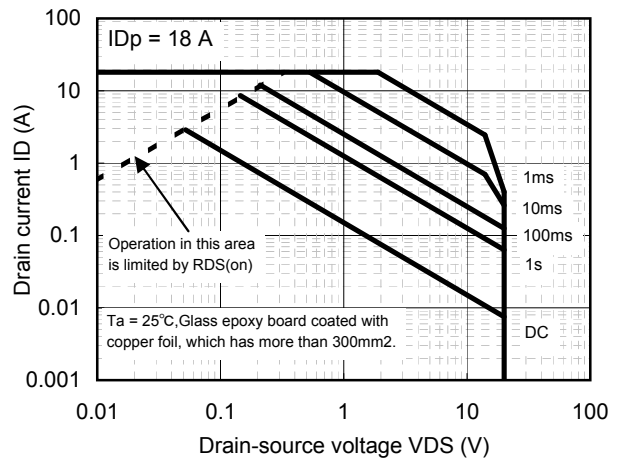
PD - Ta



Rth - tsw

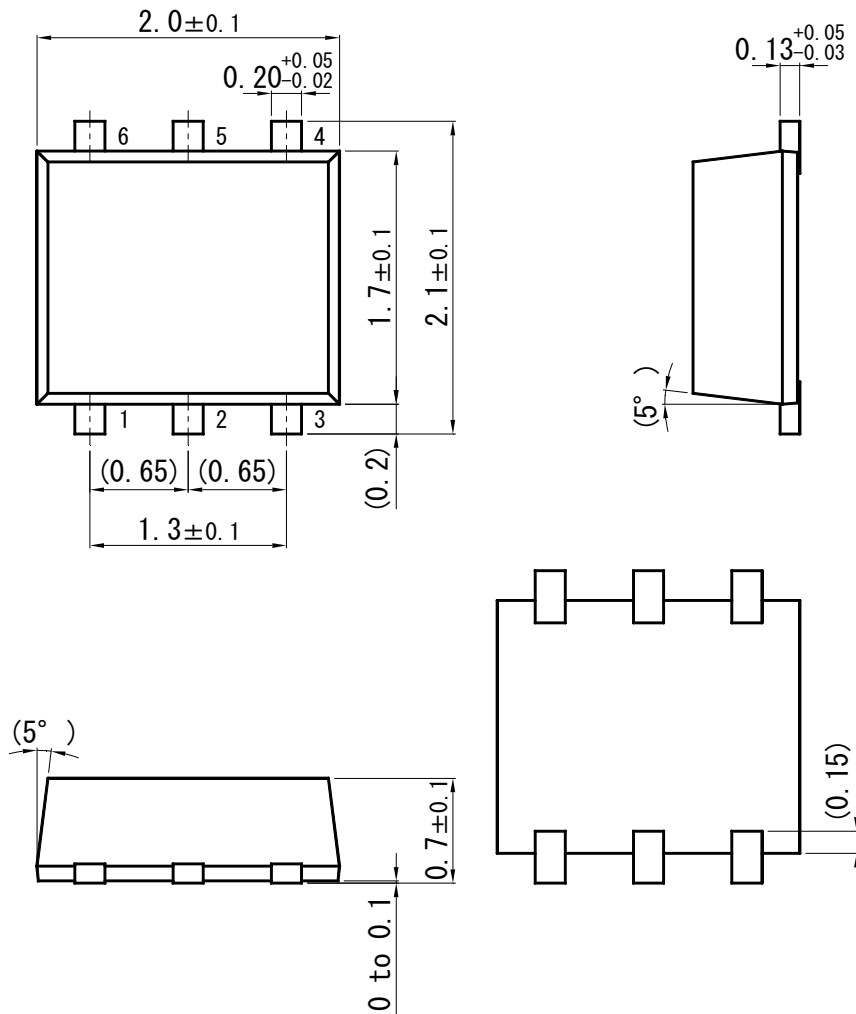


Safe Operating Area

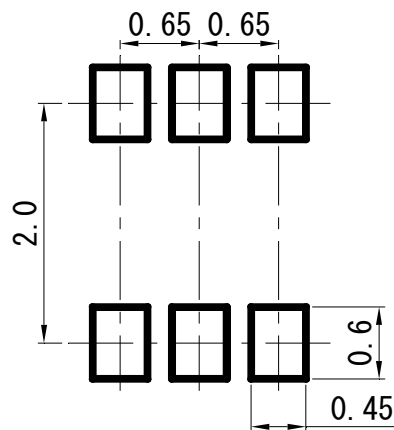


WSMini6-F1-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



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