Panasonic

FL5252050R

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

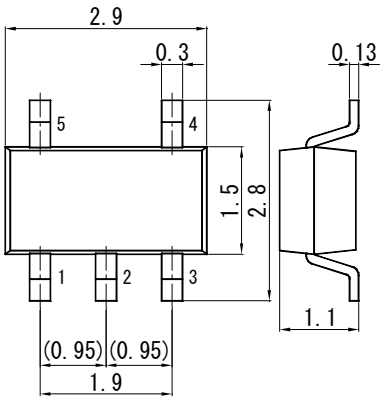
For switching
For DC-DC Converter

■ Features
- Low drain-source ON resistance : RDS (on) typ. = 100 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 : Y0

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

Unit : mm



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

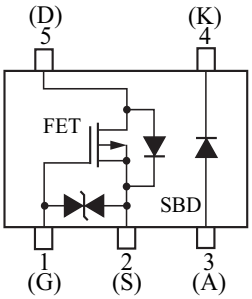
Panasonic	Mini5-G3-B
JEITA	SC-74A
Code	MO-178

■ 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	-2.1	A
	Drain Current (Pulsed)	IDp	-8	A
	Channel temperature	Tch	125	°C
SBD	Reverse voltage	VR	20	V
	Forward current (Average)	IF(AV)	700	mA
	Junction temperature	Tj	125	°C
Overall	Total power dissipation *1	PD	600	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 × 0.1 mm
PD absolute maximum rating without a heat shink: 300 mW

Internal Connection



Pin Name

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

Established : 2011-06-17
Revised : 2013-10-28

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

FET (P-ch.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage	VDSS	ID = -1 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		100	130	mΩ
	RDS(on)2	ID = -0.5 A, VGS = -2.5 V		130	200	
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		400		pF
Output Capacitance	Coss			40		pF
Reverse Transfer Capacitance	Crss			35		pF
Turn-on time*1	ton	VDD = -10 V, VGS = 0 to -4 V ID = -1.0 A		35		ns
Turn-off time*1	toff	VDD = -10 V, VGS = -4 to 0 V ID = -1.0 A		100		ns

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	VF	IF = 700 mA			0.45	V
Reverse current	IR	VR = 20 V			200	μA
Terminal capacitance	Ct	VR = 10 V, f = 1 MHz		12		pF
Reverse recovery time	trr	IF = IR = 100 mA, Irr = 10 mA		4.3		ns

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

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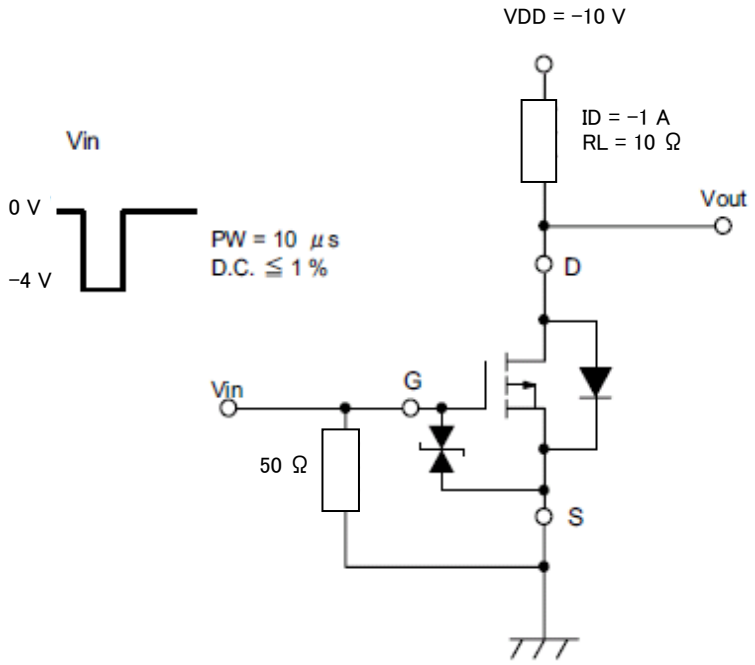
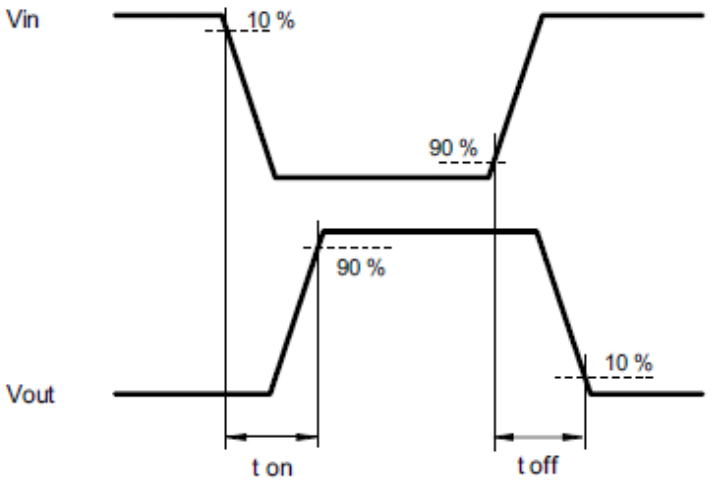
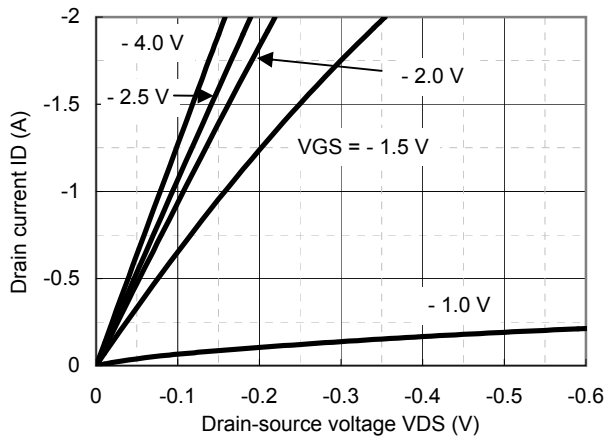
*1 Turn-on, Turn-off measurement circuit



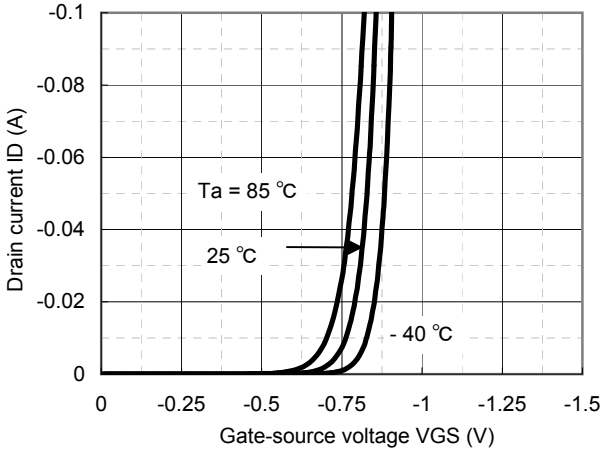


Technical Data (reference)

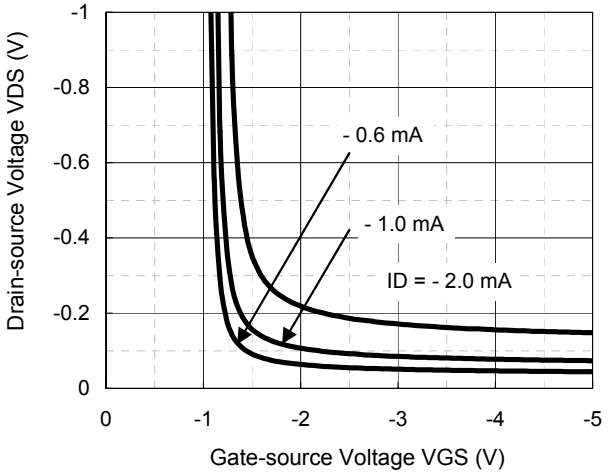
ID - VDS



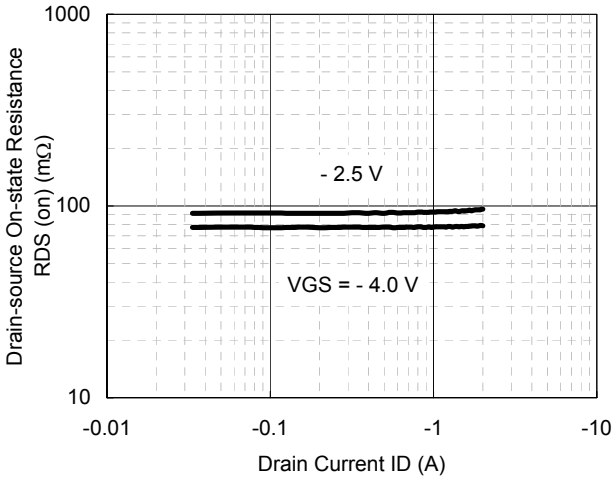
ID - VGS



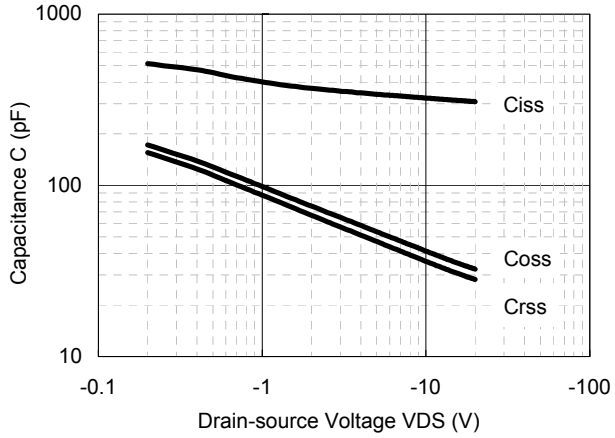
VDS - VGS



RDS(on) - ID



Capacitance - VDS



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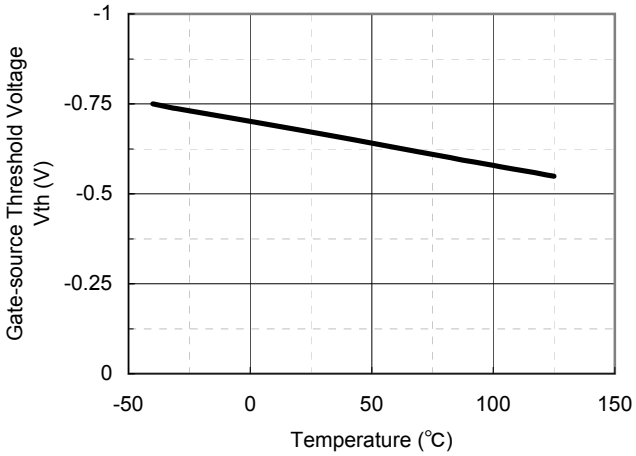
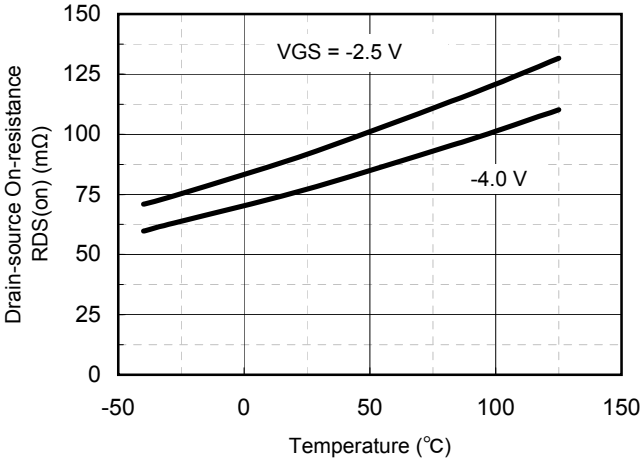
Technical Data (reference)

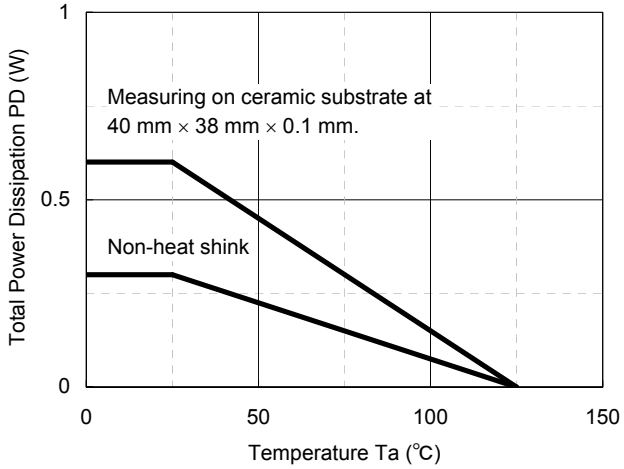
Vth - Ta



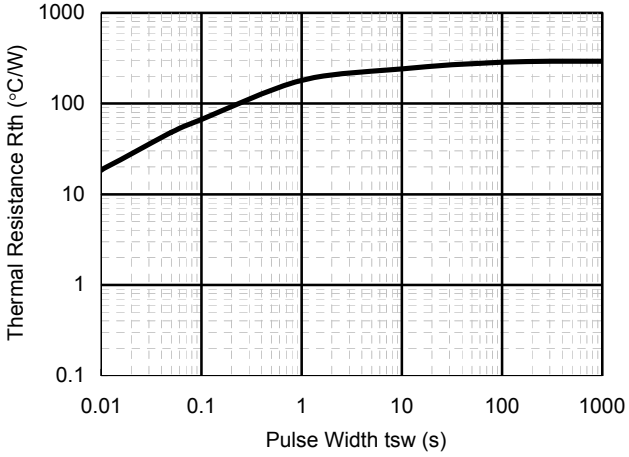
RDS(on) - Ta



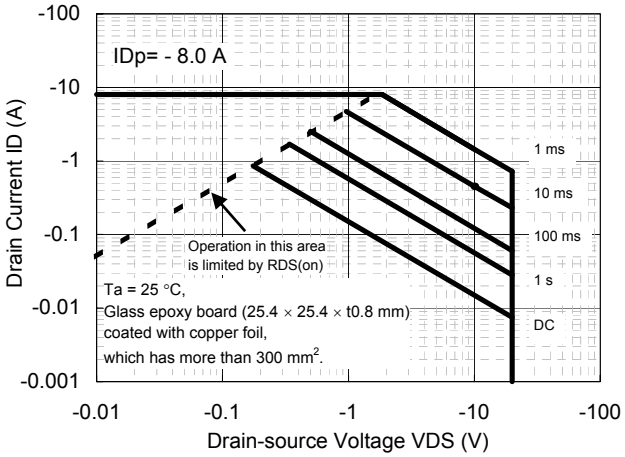
PD - Ta



Rth - tsw



Safe Operating Area



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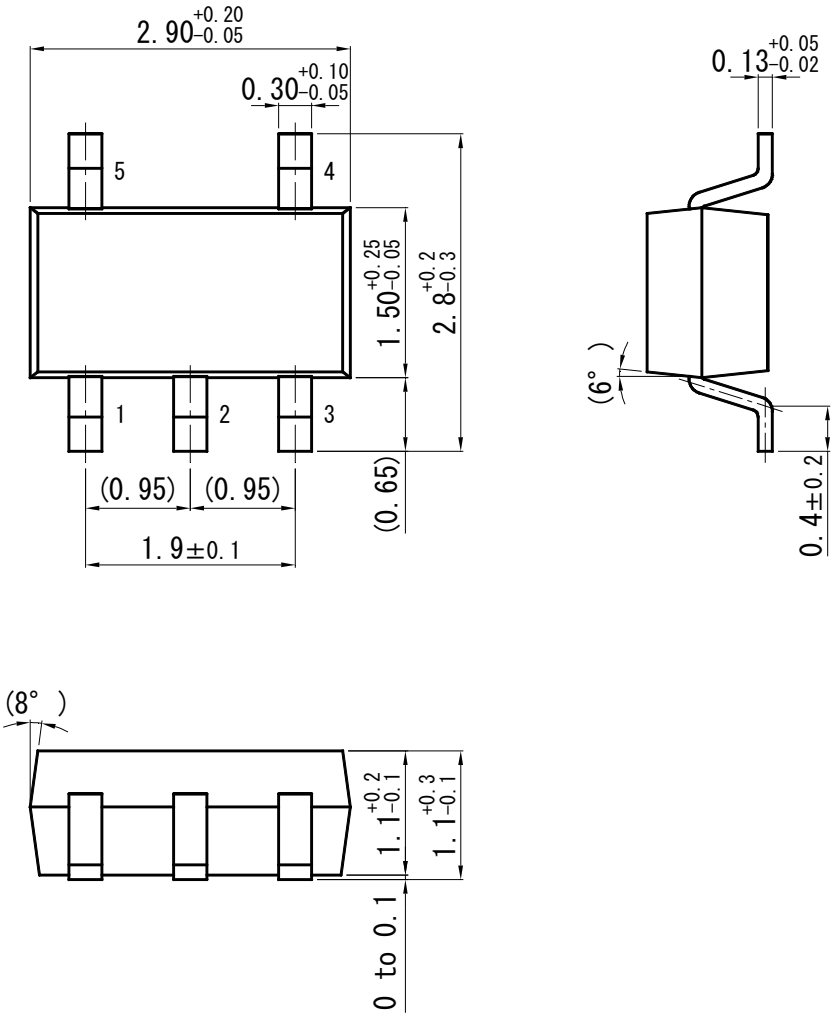
MOS FET

Panasonic

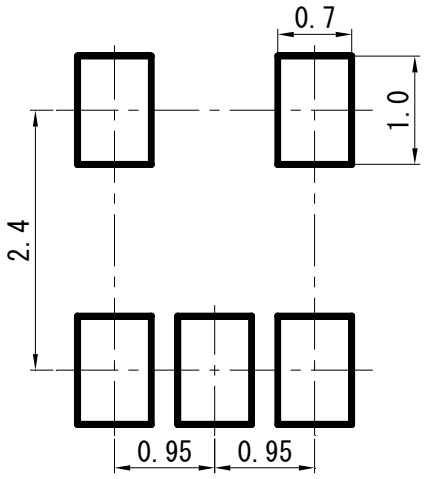
FL5252050R

Mini5-G3-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



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