Notification about the transfer of the semiconductor business

The semiconductor business of Panasonic Corporation was transferred on September 1, 2020 to Nuvoton Technology Corporation (hereinafter referred to as "Nuvoton"). Accordingly, Panasonic Semiconductor Solutions Co., Ltd. became under the umbrella of the Nuvoton Group, with the new name of Nuvoton Technology Corporation Japan (hereinafter referred to as "NTCJ").

In accordance with this transfer, semiconductor products will be handled as NTCJ-made products after September 1, 2020. However, such products will be continuously sold through Panasonic Corporation.

Publisher of this Document is NTCJ.
If you would find description “Panasonic” or “Panasonic semiconductor solutions”, please replace it with NTCJ.

※ Except below description page
“Request for your special attention and precautions in using the technical information and semiconductors described in this book”

Nuvoton Technology Corporation Japan

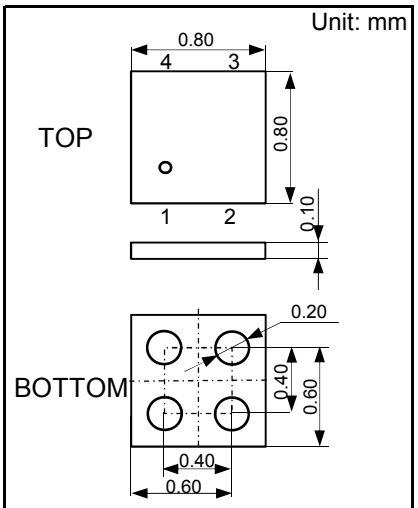
MOS FET

Panasonic FJ4B01100L

FJ4B01100L

Single P-channel MOS FET

For Load switching circuits



1. Gate
2. Drain
3. Source
4. Source

Panasonic	XLGA004-W-0808-RA01
JEITA	—
Code	—

■ Features

- Low Drain-source ON resistance:Rds(on) typ. = 68 mΩ (VGS = -2.5 V)
- CSP (Chip Size Package)
- RoHS compliant (EU RoHS / MSL:Level 1 compliant)

■ Marking Symbol: 1D

■ Packaging

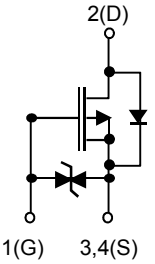
Embossed type (Thermo-compression sealing) : 20 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25 °C

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	VDS	-12	V
Gate-Source Voltage	VGS	±8	V
Drain Current	ID1*1	-2.2	A
	ID2*2	-3.3	
	ID3*3	-4.1	
Peak Drain Current	IDp1*1*4	-17	A
	IDp2*2*4	-26	
	IDp3*3*4	-32	
Power Dissipation	PD1*1	0.36	W
	PD2*2	0.82	
	PD3*3	1.3	
Channel Temperature	Tch	150	°C
Operating Ambient Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Note *1 FR4 board (25.4mm×25.4mm×t1.0mm)、Min Cu 36mm^2 Copper
*2 FR4 board (25.4mm×25.4mm×t1.0mm)、Full Cu
*3 Ceramic substrate (70mm×70mm×t1.0mm)
*4 t = 10 µs, Duty Cycle < 1%

■ Internal Connection



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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	VDSS	ID = -1 mA, VGS = 0	-12			V
Zero Gate Voltage Drain Current	IDSS	VDS = -12 V, VGS = 0			-10	μA
Gate-Source Leakage Current	IGSS	VGS = ±8 V, VDS = 0 V			±10	μA
Gate Threshold Voltage	Vth	ID = -1.2 mA, VDS =-10 V	-0.3		-1.0	V
Drain-Source ON Resistance	RDS(on)	ID = -1.5 A, VGS = -4.5 V		57	74	mΩ
		ID = -1.5 A, VGS = -2.5 V		68	90	
		ID = -0.2 A, VGS = -1.8 V		82	139	
		ID = -0.1 A, VGS = -1.5 V		97	290	
Input Capacitance *1	Ciss	VDS = -10 V VGS = 0 f = 1MHz		459		pF
Output Capacitance *1	Coss			85		
Reverse Transfer Capacitance *1	Crss			75		
Turn-on delay time *1,*2	td(on)	VDD = -6 V VGS = 0 to -4.5 V ID = -1.0 A		8		ns
Rise time *1,*2	tr			11		
Turn-off delay time *1,*2	td(off)			59		
Fall time *1,*2	tf			10		
Total Gate Charge *1	Qg	VDD = -6 V VGS = -4.5 V ID = -1.0 A		7		nC
Gate to Source Charge *1	Qgs			0.75		nC
Gate to Drain Miller Charge *1	Qgd			0.95		nC
Body Diode Forward Voltage	VF(D-S)	IF = -0.2A, VGS = 0V		-0.7	-1.2	V

Note Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.
*1 Guaranteed by design, not subject to production testing
*2 Measurement circuit for Turn-on delay time / Rise time / Turn-off delay time / Fall time

■ Electrical State Discharge Characteristics

Standard	Test Type	Symbol	Conditions	Class	Value	Unit
AEC-Q101-001	Human body model	HBM	C = 100 pF, R = 1.5 kΩ	H1C	>1k to ≦ 2k	V
	Machine model	MM	C = 200 pF, R = 0 Ω	M2	>100 to ≦ 200	V

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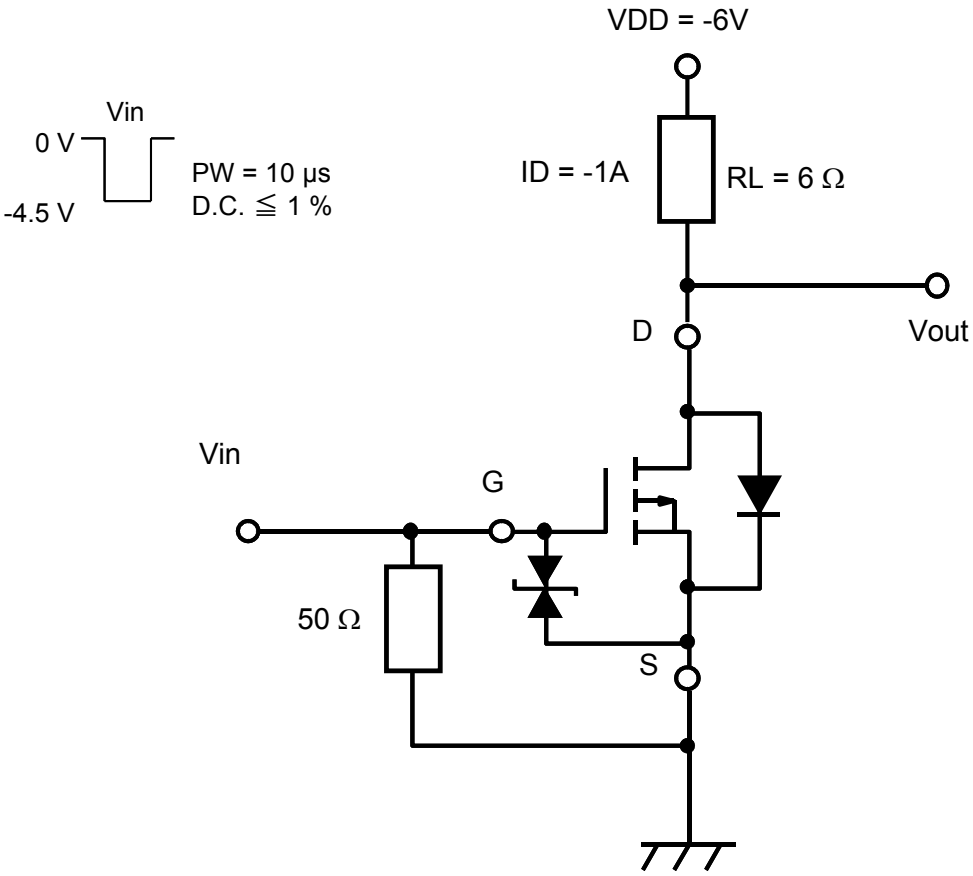
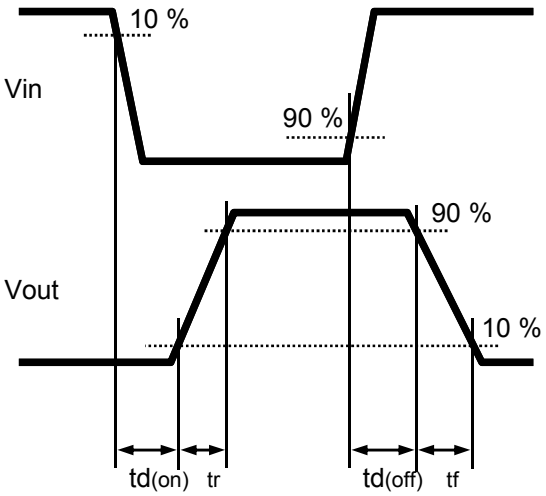
Note2: Measurement circuit





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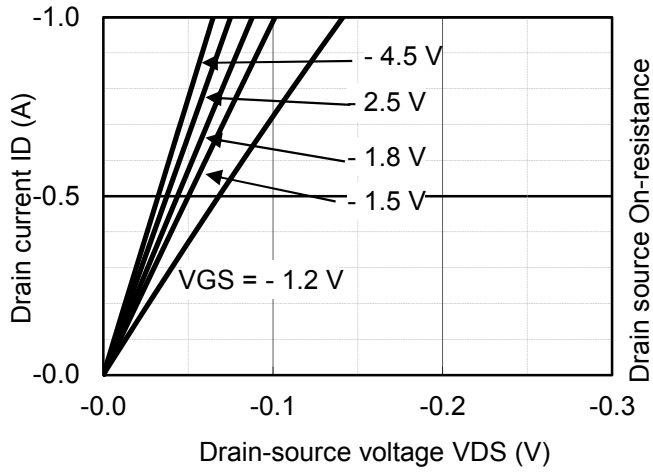
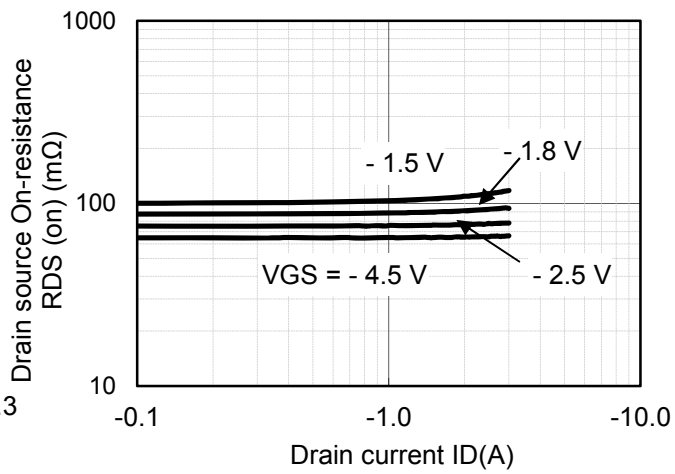
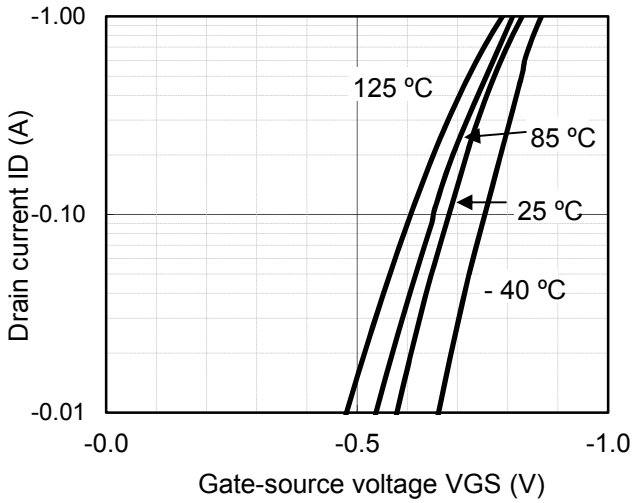
ID - VDS



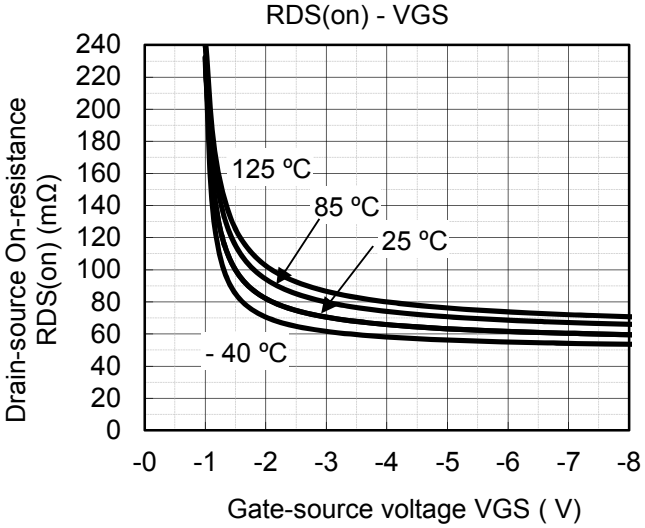
RDS(on) - ID



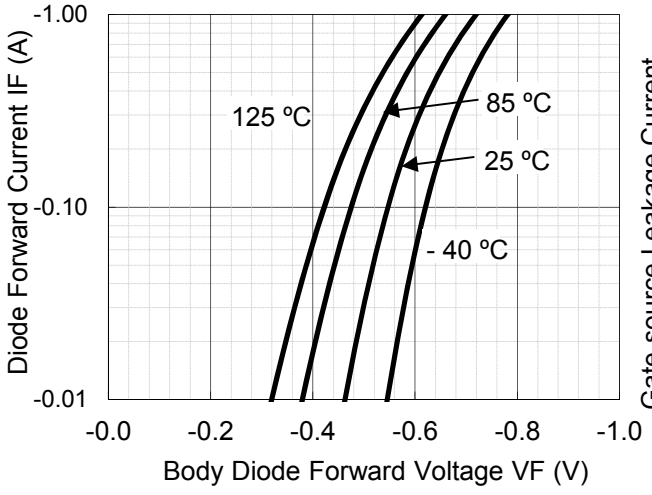
ID - VGS



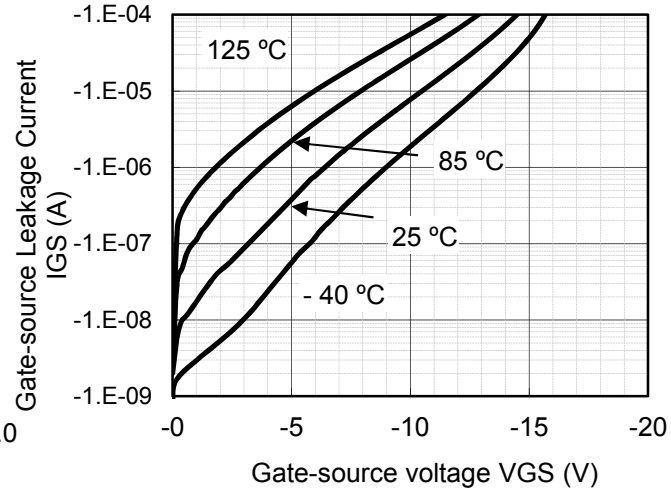
RDS(on) - VGS



IF - VF



IGS - VGS



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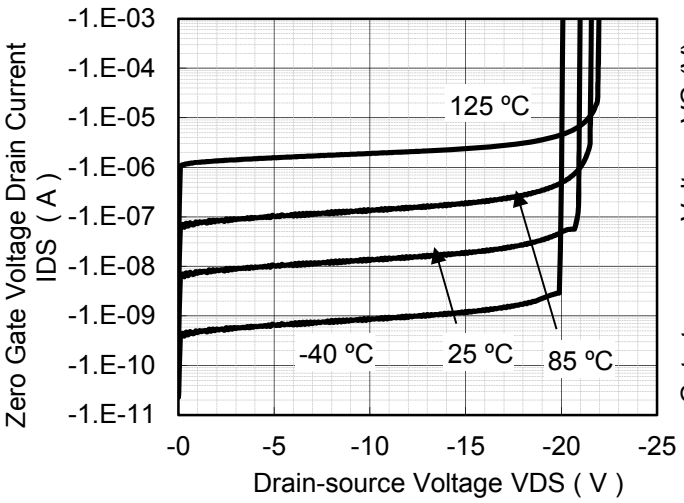
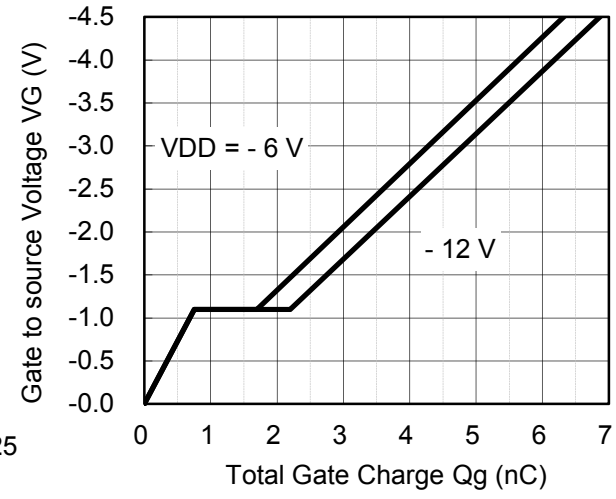
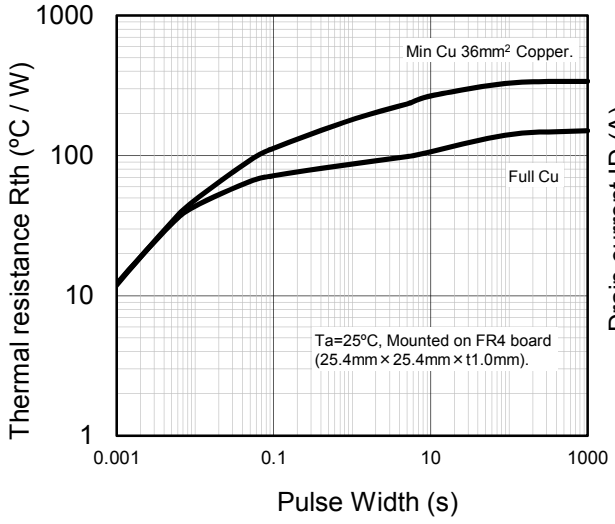
IDS - VDS



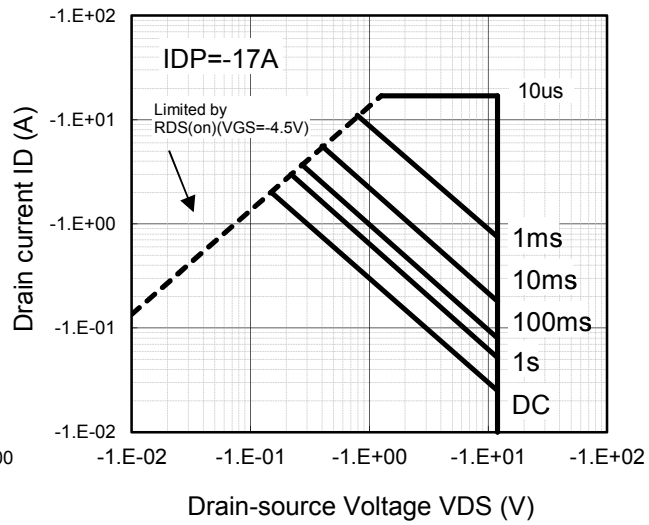
Dynamic Input/Output Characteristics



Rth - tsw



Safe Operating Area



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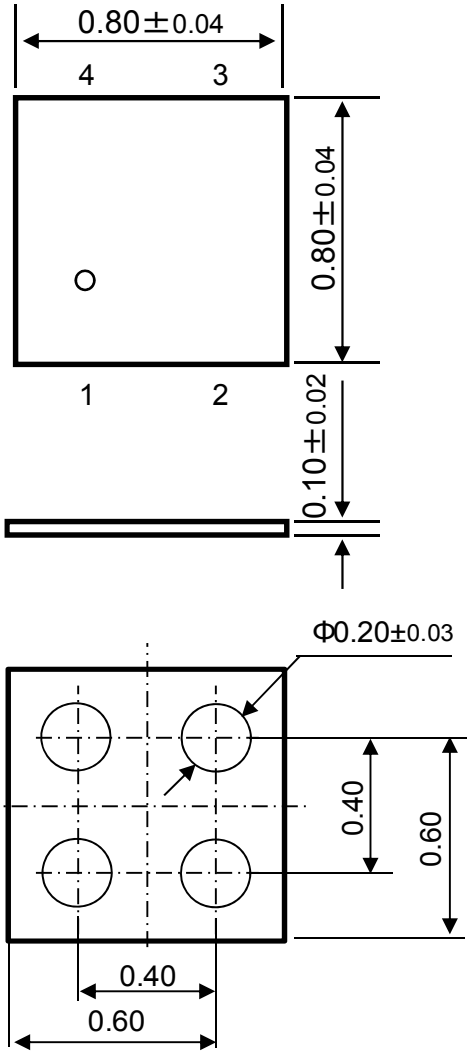
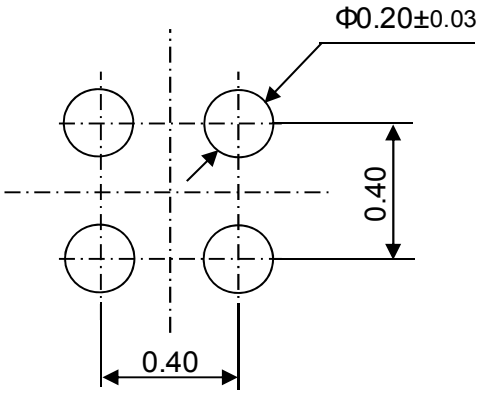
■ XLGA004-W-0808-RA01

Unit: mm



■ Land Pattern (Reference)



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