MOS FET

Panasonic FC8V33030L

FC8V33030L

Dual N-channel MOSFET

For switching
For DC-DC Converter

■ Features

- Low drain-source On-state Resistance :
  RDS(on) typ = 22 mΩ (VGS = 4.5 V)
- High-speed switching : Qg = 3.8 nC
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

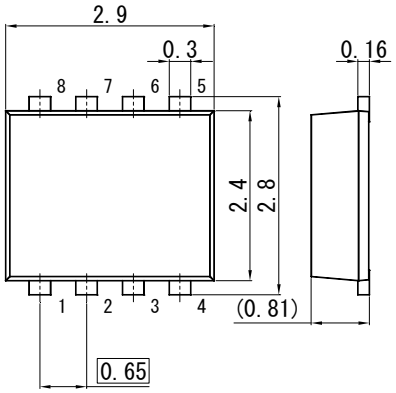
■ Marking Symbol: 6A

■ Basic Part Number : Dual Nch MOS 33V (Individual)

■ Packaging

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

Unit: mm



1. Tr.1 Source
2. Tr.1 Gate
3. Tr.2 Source
4. Tr.2 Gate
5. Tr.2 Drain
6. Tr.2 Drain
7. Tr.1 Drain
8. Tr.1 Drain

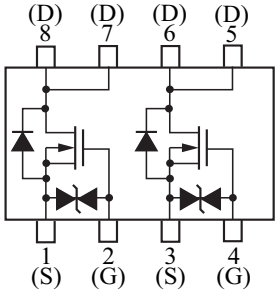
Panasonic	WMini8-F1
JEITA	SC-115
Code	—

■ Absolute Maximum Ratings Ta = 25 °C Tr.1, Tr.2

Parameter	Symbol	Rating	Unit
Drain-source Voltage	VDS	33	V
Gate-source Voltage	VGS	±20	V
Drain Current (Steady State) *1	ID	6.5	A
Drain Current (t = 10 s) *1		8	
Drain Current (Pulsed) *1,*2	IDp	26	
Source Current (Pulsed) (Body Diode) *1,*2	ISp (BD)	6.5	
Total Power Dissipation (Steady State) *1	PD	1	W
Total Power Dissipation (t = 10 s) *1		1.5	
Channel Temperature	Tch	150	°C
Operating Ambient Temperature	Topr	-40 to + 85	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Note) *1 Device mounted on a glass-epoxy board (See Figure 1)
*2 Pulse test: Ensure that the channel temperature does not exceed 150°C.

Internal Connection



Pin Name

1. Tr.1 Source
2. Tr.1 Gate
3. Tr.2 Source
4. Tr.2 Gate
5. Tr.2 Drain
6. Tr.2 Drain
7. Tr.1 Drain
8. Tr.1 Drain

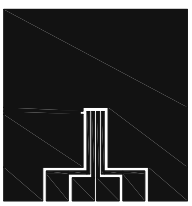


Figure1 FR4 Glass-Epoxy Board
25.4 mm × 25.4 mm × 0.8 mm

Established : 2011-04-20
Revised : 2013-07-31

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■ Electrical Characteristics Ta = 25°C ± 3°C Tr.1, Tr.2

Static Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	VDSS	ID = 1 mA, VGS = 0 V	33			V
Zero Gate Voltage Drain Current	IDSS	VDS = 33 V, VGS = 0 V			10	μA
Gate-source Leakage Current	IGSS	VGS = ±16 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = 0.48 mA, VDS = 10 V	1		2.5	V
Drain-source On-state Resistance *1	RDS(on)1	ID = 3.3 A, VGS = 10 V		15	20	mΩ
	RDS(on)2	ID = 3.3 A, VGS = 4.5 V		22	35	

Dynamic Characteristics

Input Capacitance	Ciss	VDS = 10 V, VGS = 0 V f = 1 MHz		360		pF
Output Capacitance	Coss			70		
Reverse Transfer Capacitance	Crss			50		
Turn-on Delay Time *2	td(on)	VDD = 15 V, VGS = 0 to 10 V ID = 3.3 A		8		ns
Rise Time *2	tr			3		
Turn-off Delay Time *2	td(off)	VDD = 15 V, VGS = 10 to 0 V ID = 3.3 A		24		
Fall Time *2	tf			9		
Total Gate Charge	Qg	VDD = 15 V, VGS = 0 to 4.5 V, ID = 6.5 A		3.8		nC
Gate-source Charge	Qgs			1.4		
Gate-drain Charge	Qgd			1.6		

Body Diode Characteristic

Diode Forward Voltage *1	VSD	IS = 3.3 A, VGS = 0 V		0.8	1.2	V

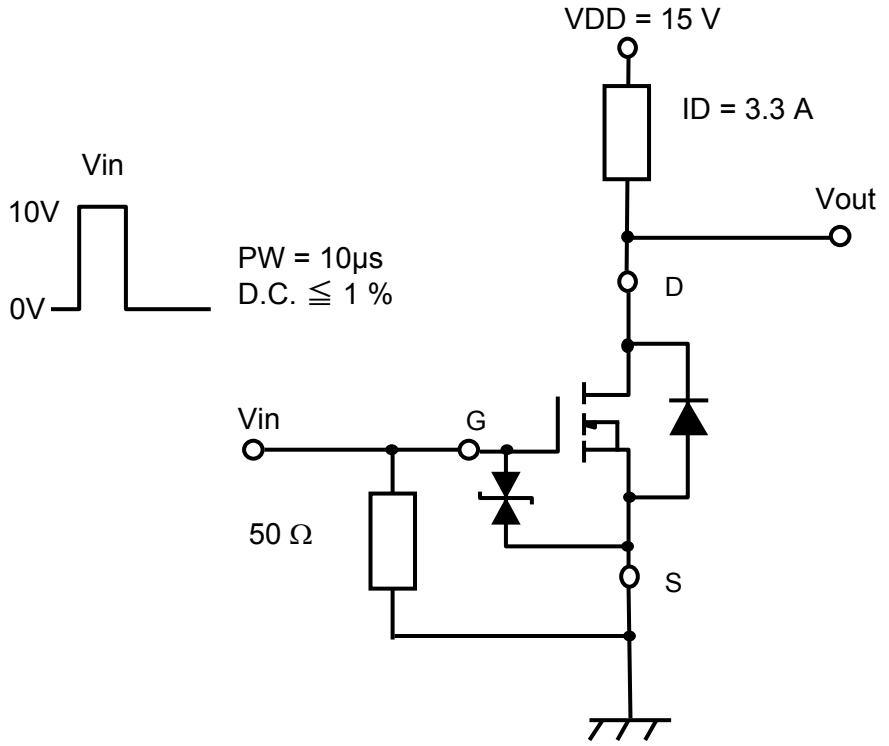
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

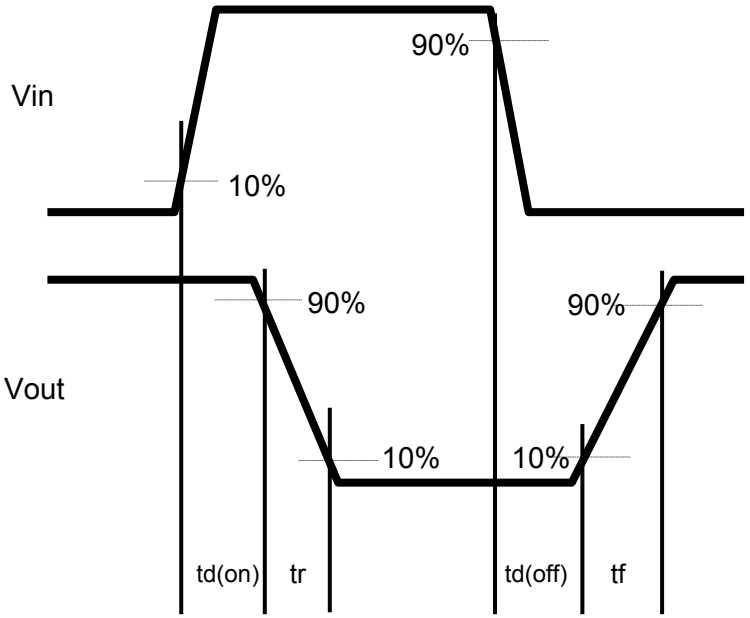
2. *1 Pulse test: Ensure that the channel temperature does not exceed 150°C.

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

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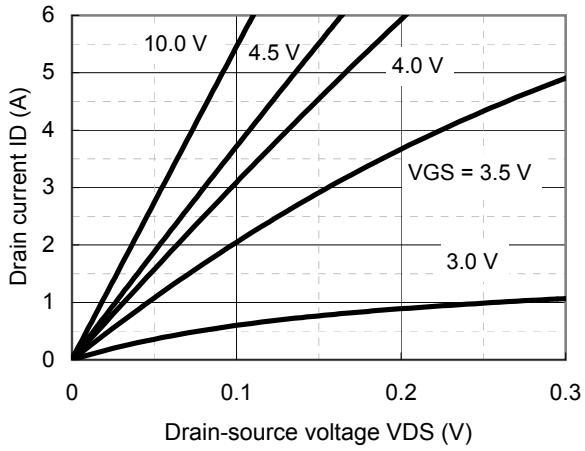
*2 Measurement circuit for Turn-on Delay Time/Rise Time/Turn-off Delay Time/Fall Time



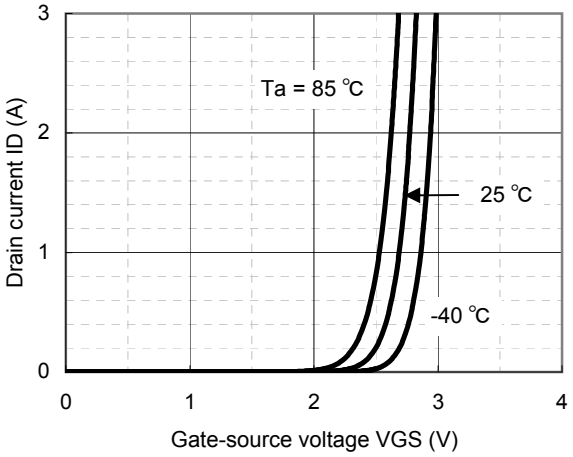


Established : 2011-04-20
Revised : 2013-07-31

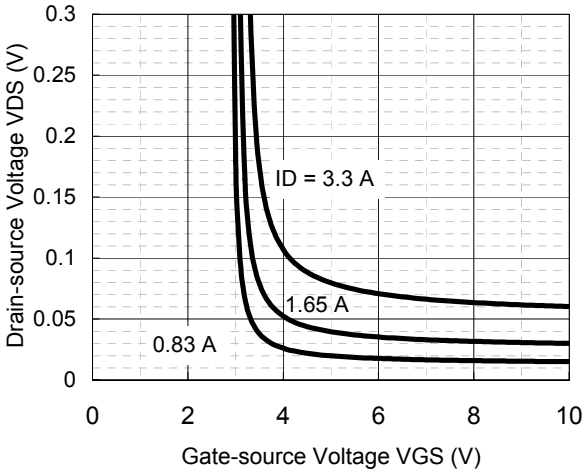
ID - VDS



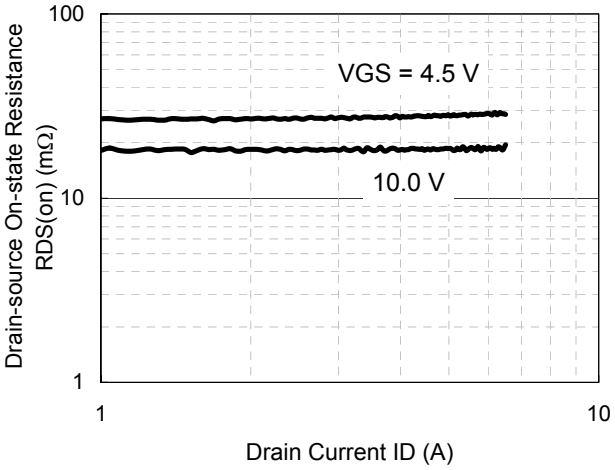
ID - VGS



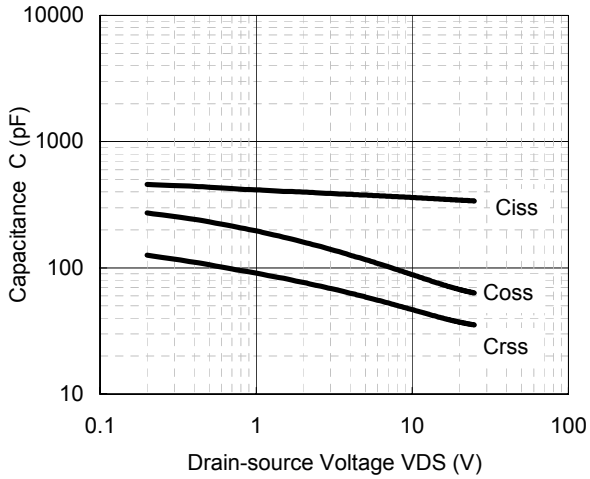
VDS - VGS



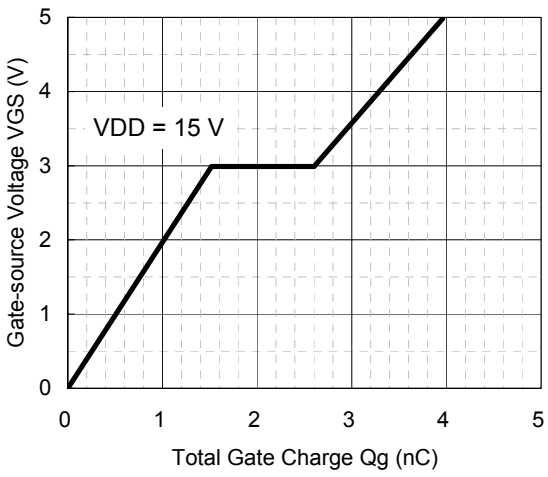
RDS(on) - ID



Capacitance - VDS

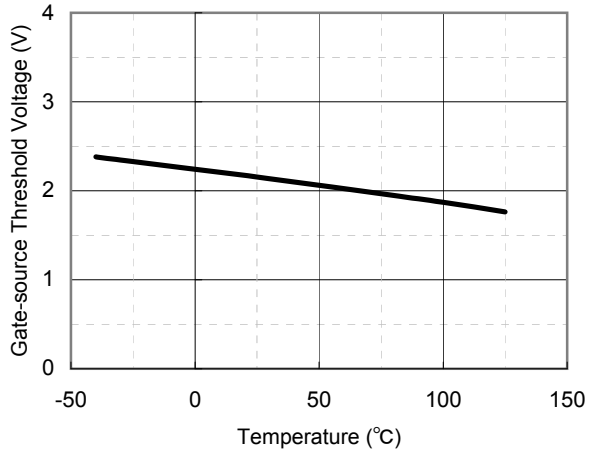


Dynamic Input/Output Characteristics

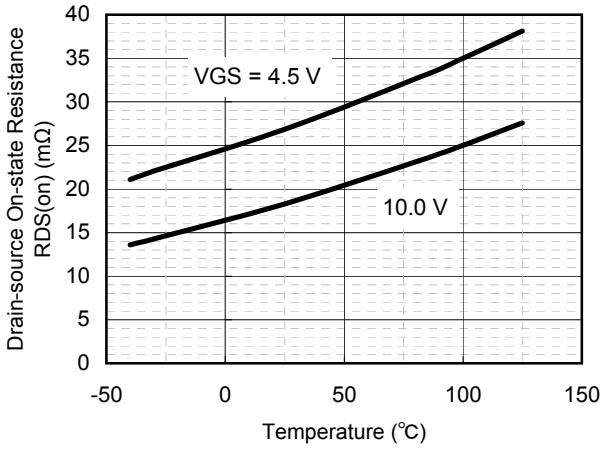


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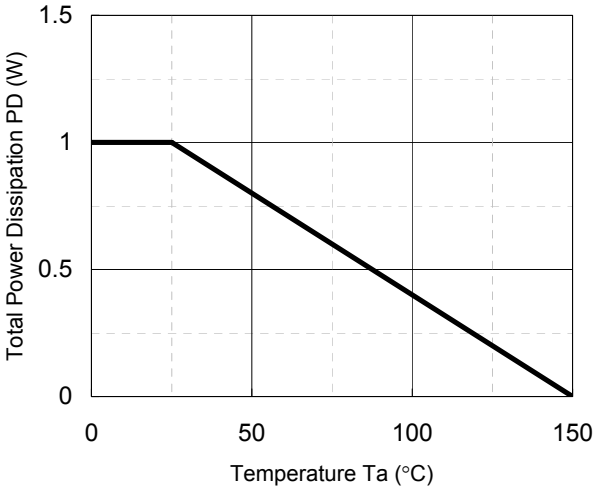
Vth - Ta



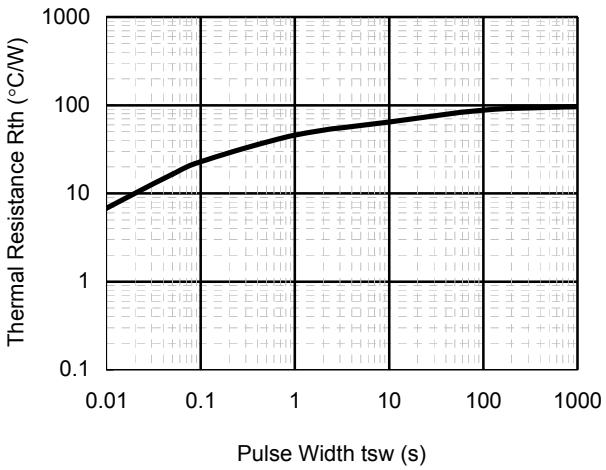
RDS(on) - Ta



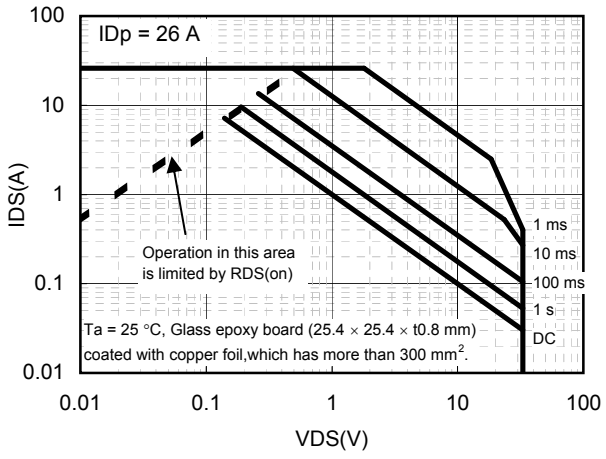
PD - Ta



Rth -tsw



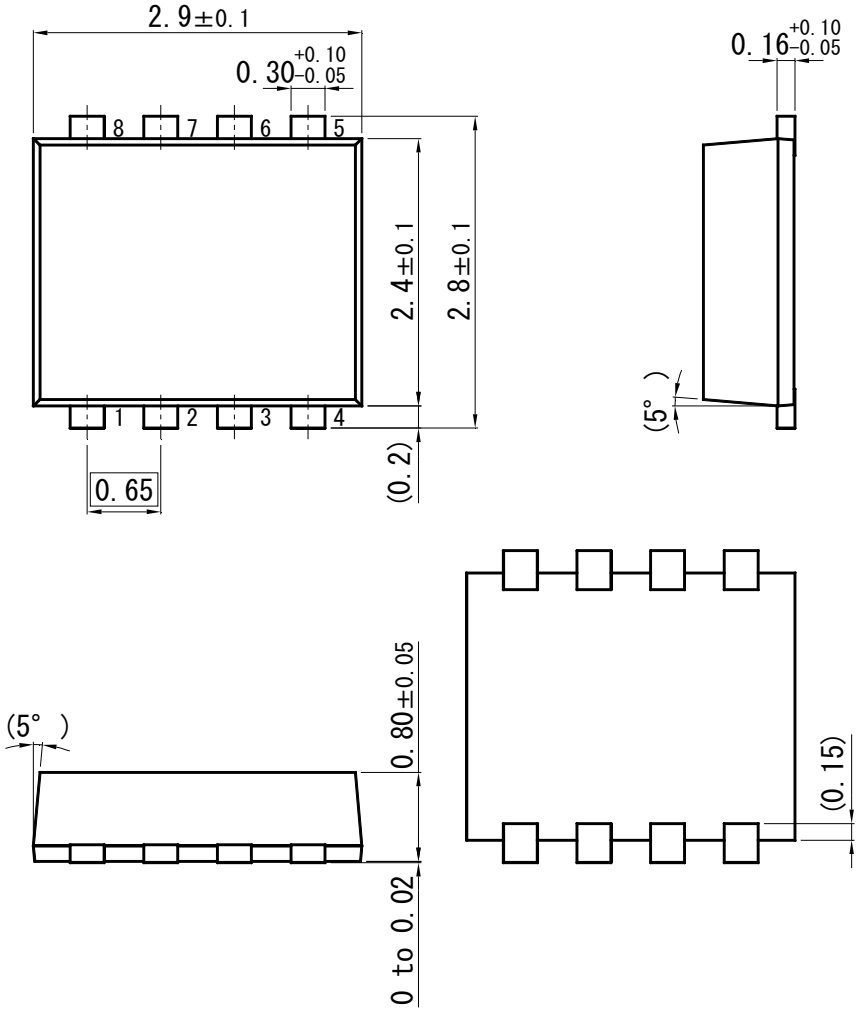
Safe Operating Area



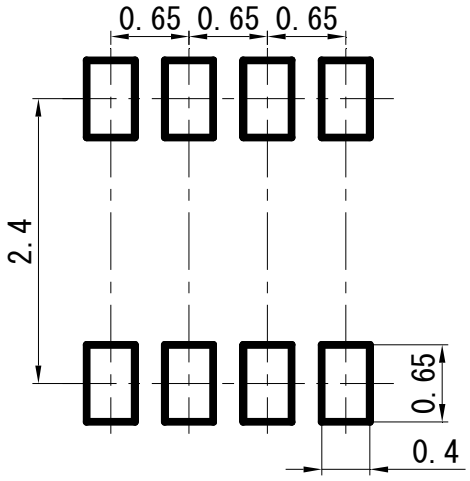
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WMini8-F1

Unit : mm



■ Land Pattern (Reference) (Unit : mm)



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