

FC8V33030L

Dual N-channel MOSFET

For DC-DC Converter

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 22 mΩ (V_{GS} = 4.5 V)
- High-speed switching : Q_g = 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 33 V (Individual)

■ Packaging

FC8V33030L Embossed type (Thermo-compression sealing):

3 000 pcs / reel (standard)

Unit: mm							
2.9							
8	7	6	5	0.3			
					2.4	2.8	
1	2	3	4			(0.81)	0.16
							0.65

1. Source(FET1)	5. Drain(FET2)
2. Gate(FET1)	6. Drain(FET2)
3. Source(FET2)	7. Drain(FET1)
4. Gate(FET2)	8. Drain(FET1)

Panasonic	WMini8-F1
JEITA	SC-115
Code	—

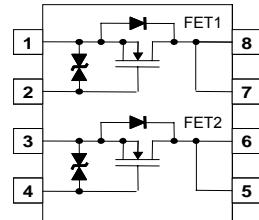
■ Absolute Maximum Ratings Ta = 25 °C

	Parameter	Symbol	Rating	Unit
FET1 FET2	Drain-source Voltage	V _{DS}	33	V
	Gate-source Voltage	V _{GS}	±20	V
	Drain Current (Steady State) ^{*1}	ID	6.5	
	Drain Current (t=10s) ^{*1}		8	
	Drain Current (Pulsed) ^{*1,2}	ID _P	26	
	Source Current (Pulsed) (Body Diode) ^{*1,2}	I _{Sp} (BD)	6.5	A
Overall	Power Dissipation (Steady State) ^{*1}	PD	1	
	Power Dissipation (t=10s) ^{*1}		1.5	
	Channel Temperature	T _{ch}	150	°C
	Storage Temperature Range	T _{stg}	-55 to +150	°C

Note: *1 Device mounted on a glass-epoxy board (See Figure 1)

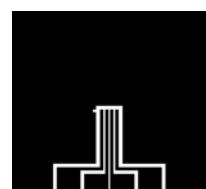
*2 Pulse test: Ensure that the channel temperature does not exceed 150 °C.

Internal Connection



Pin name

1. Source(FET1)	5. Drain(FET2)
2. Gate(FET1)	6. Drain(FET2)
3. Source(FET2)	7. Drain(FET1)
4. Gate(FET2)	8. Drain(FET1)

FR-4 (Unit: mm)
25.4 x 25.4 x 0.8

(Figure 1) Glass-Epoxy Board

■ Electrical Characteristics $T_a = 25 \text{ }^{\circ}\text{C} \pm 3 \text{ }^{\circ}\text{C}$

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	$\text{m}\Omega$
	RDS(on)2	ID = 3.3 A, VGS = 4.5 V		22	35	

Note *1 Pulse test: Ensure that the channel temperature does not exceed 150 $^{\circ}\text{C}$

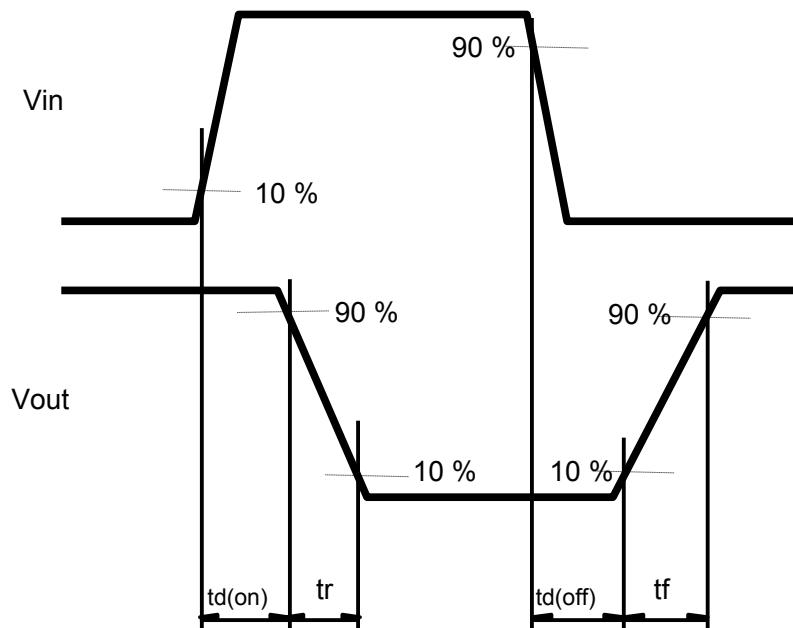
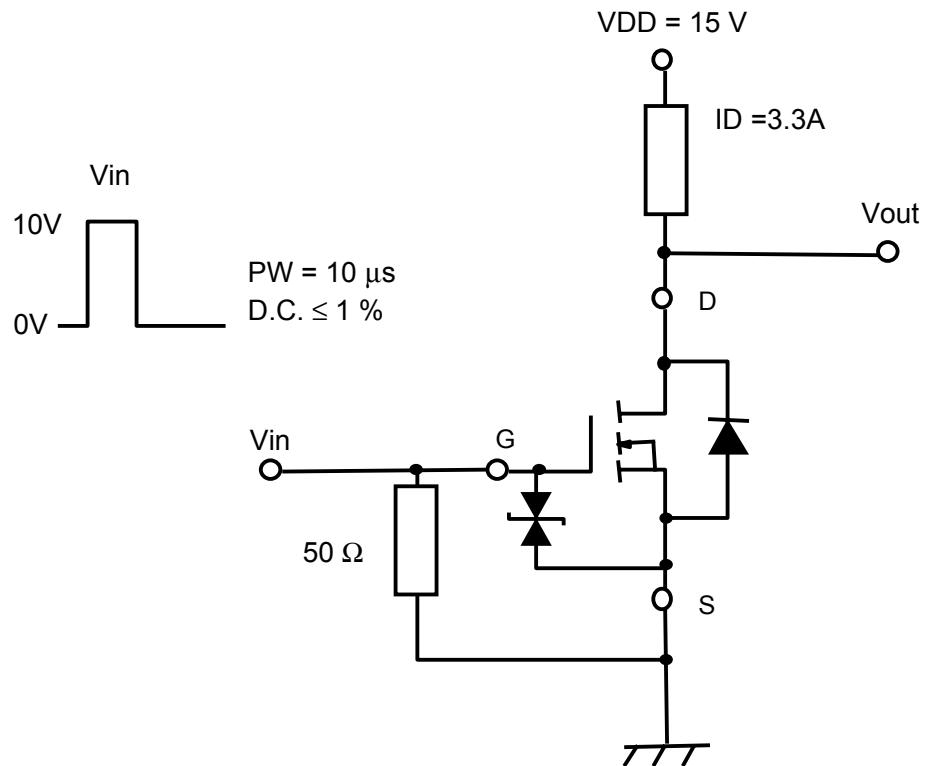
Dynamic Characteristics

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

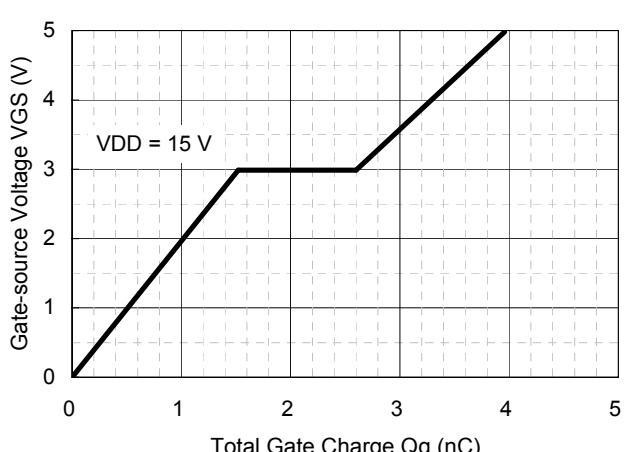
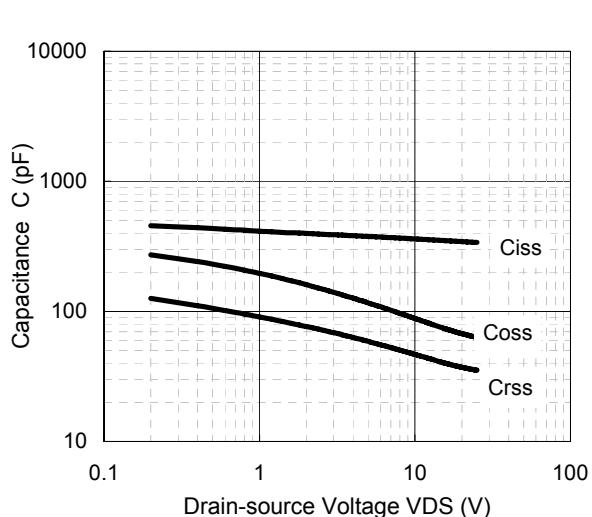
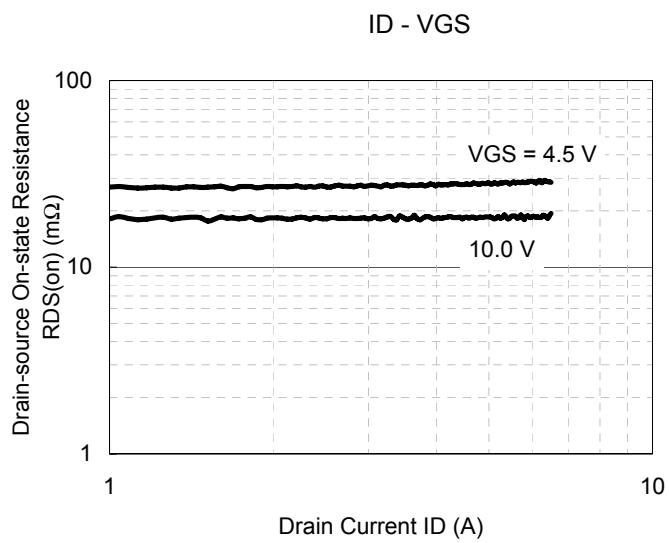
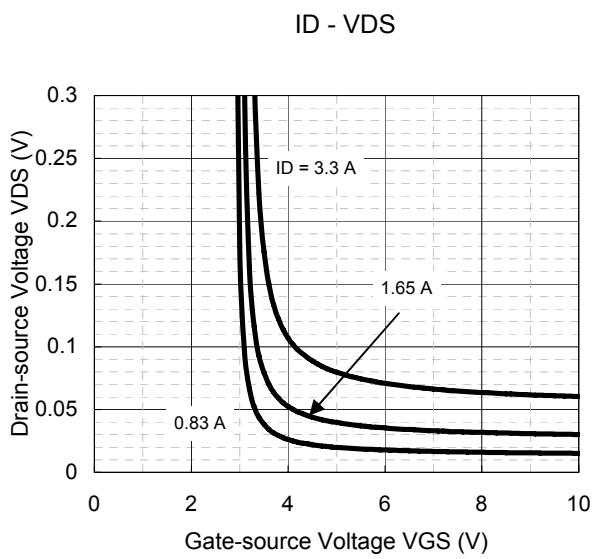
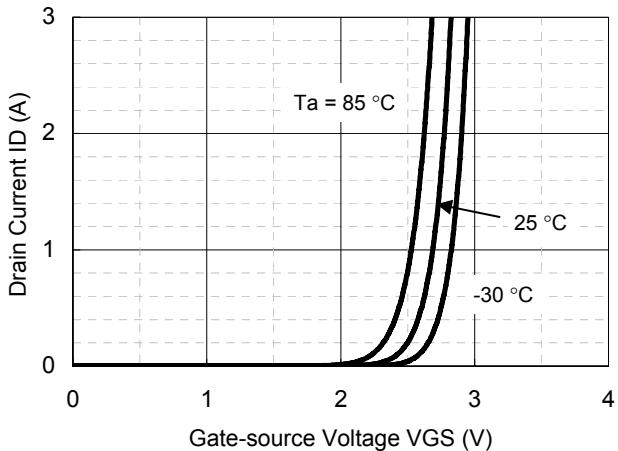
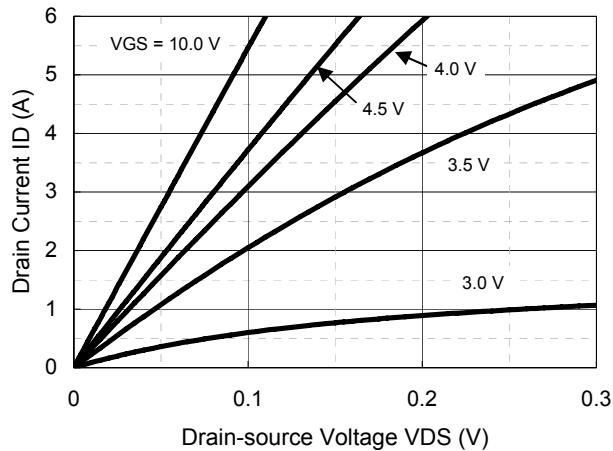
Body Diode Characteristic

Diode Forward Voltage ^{*1}	VSD	IS = 3.3 A, VGS = 0 V		0.8	1.2	V
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Note *1 Pulse test: Ensure that the channel temperature does not exceed 150 $^{\circ}\text{C}$

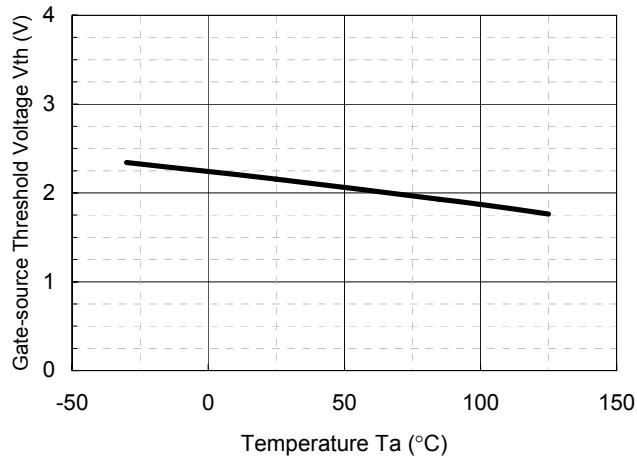


(Figure 2) Measurement circuit for Turn-On Delay Time/Rise Time/Turn-Off Delay Time/Fall Time

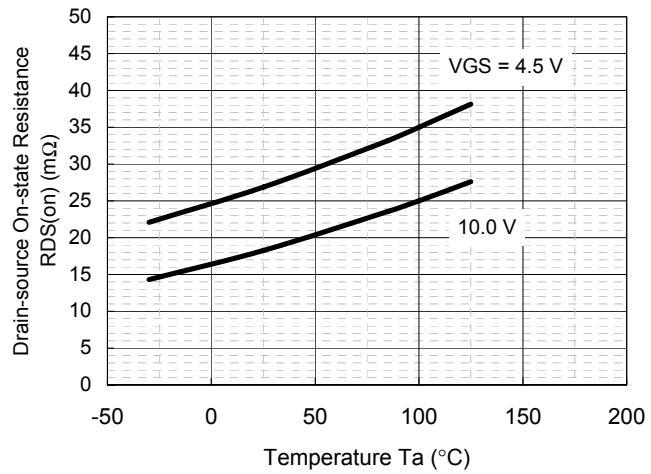


Capacitance - VDS

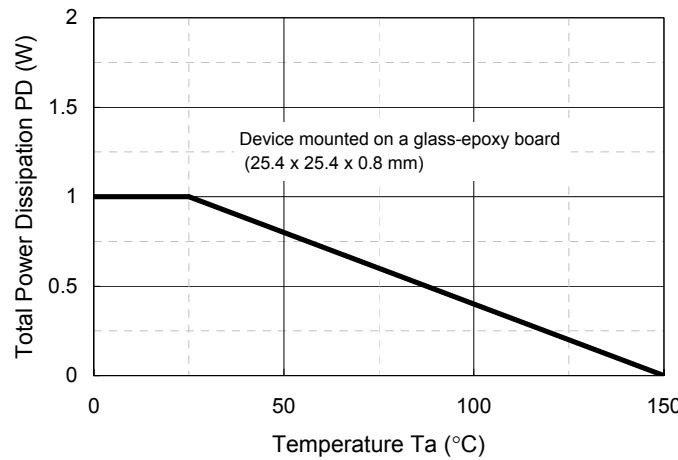
Dynamic Input/Output Characteristics



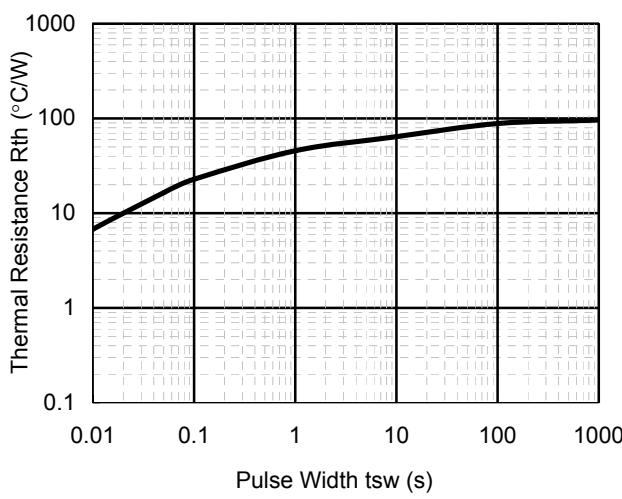
V_{th} - T_a



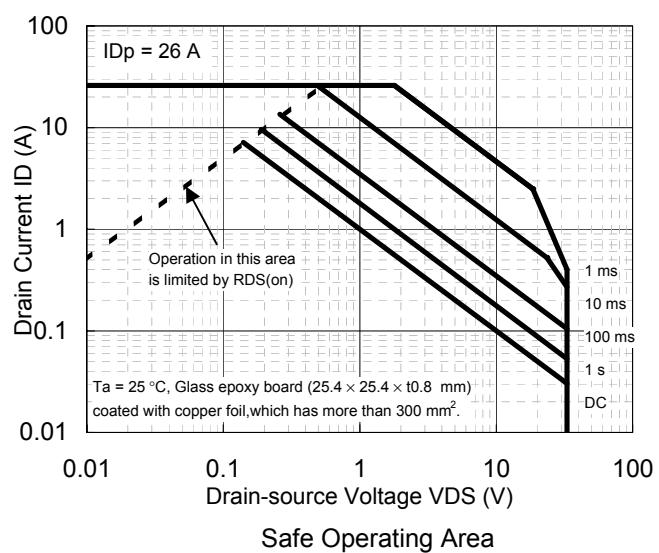
$R_{DS(on)}$ - T_a



PD - T_a



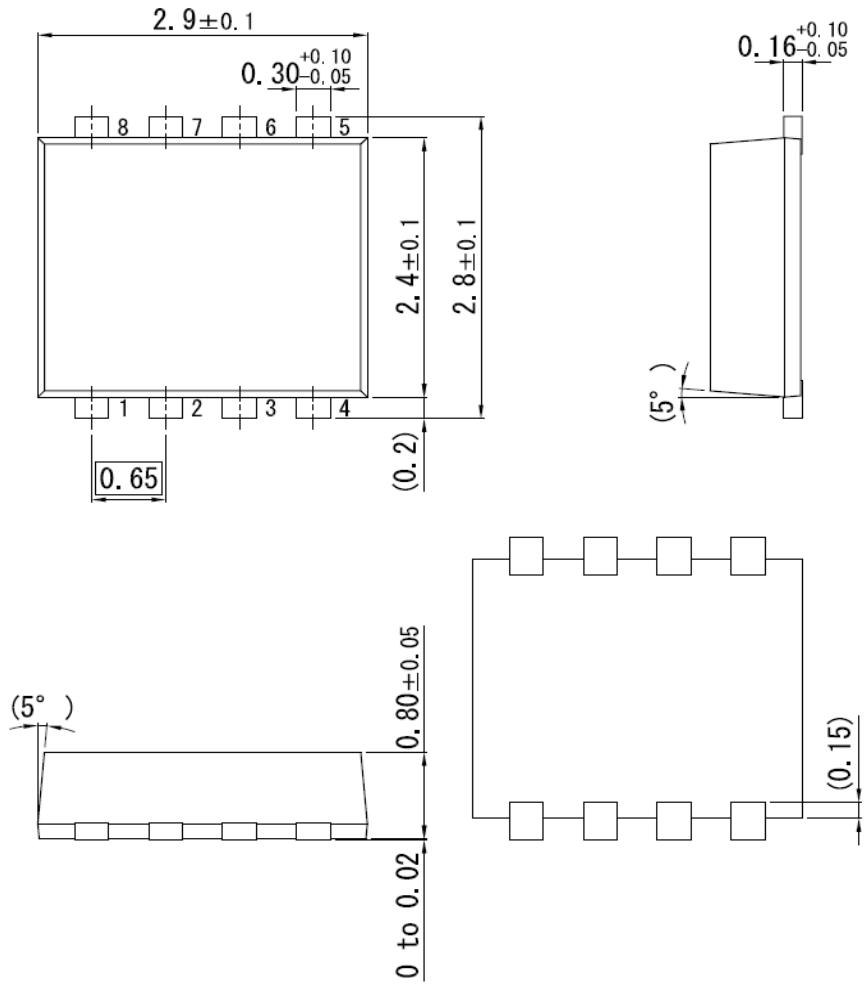
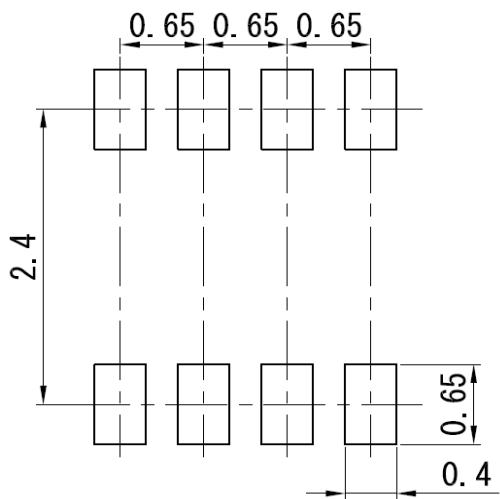
R_{th} - t_{sw}



Safe Operating Area

WMini8-F1

Unit: mm

**■ Land Pattern (Reference) (Unit: mm)**

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