

FC8J33040L

Dual N-channel MOSFET

For switching

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 48 mΩ (VGS = 4.5V)
- High-speed switching : Q_g = 2.8 nC
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL:Level 1 compliant)

■ Marking Symbol: 7A

■ Basic Part Number

Dual Nch MOS 33V (Individual)

■ Packaging

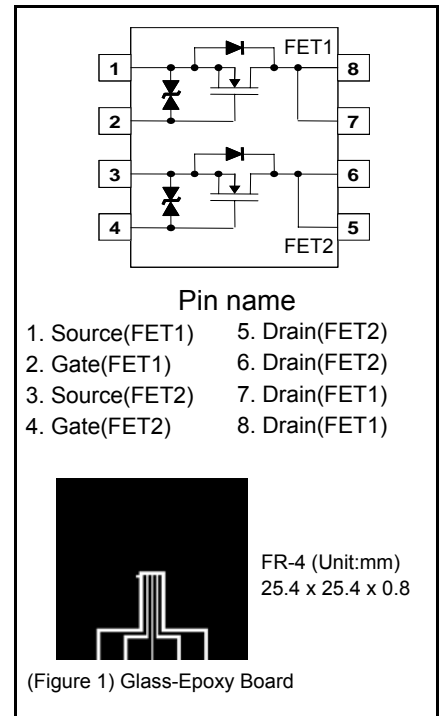
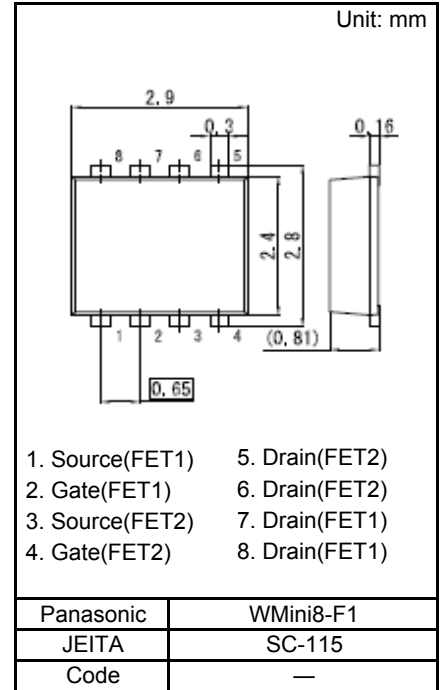
FC8J33040L Embossed type (Thermo-compression sealing):
3 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25°C

Parameter		Symbol	Rating	Unit	
FET1 FET2	Drain-source Voltage	VDS	33	V	
	Gate-source Voltage	VGS	±20	V	
	Drain Current (Steady State) ^{*1}	ID	5	A	
	Drain Current (t=10s) ^{*1}		5.5		
	Drain Current (Pulsed) ^{*1,2}	IDp	20		
	Source Current (Pulsed)	ISp	5		
(Body Diode) ^{*1,2}	(BD)	5			
Overall	Power Dissipation (Steady State) ^{*1}	PD	1		W
	Power Dissipation (t=10s) ^{*1}		1.3		
	Channel Temperature	Tch	150	°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



■ Electrical Characteristics Ta = 25°C±3°C FET1, FET2

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			1	μA
Gate-source Leakage Current	IGSS	VGS = ±16 V, VDS = 0 V			±10	μA
Gate-source Threshold Voltage	Vth	ID = 0.26 mA, VDS = 10 V	1		2.5	V
Drain-source On-state Resistance *1	RDS(on)	ID = 2.5 A, VGS = 10 V		32	38	mΩ
		ID = 2.5 A, VGS = 4.5 V		48	68	

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

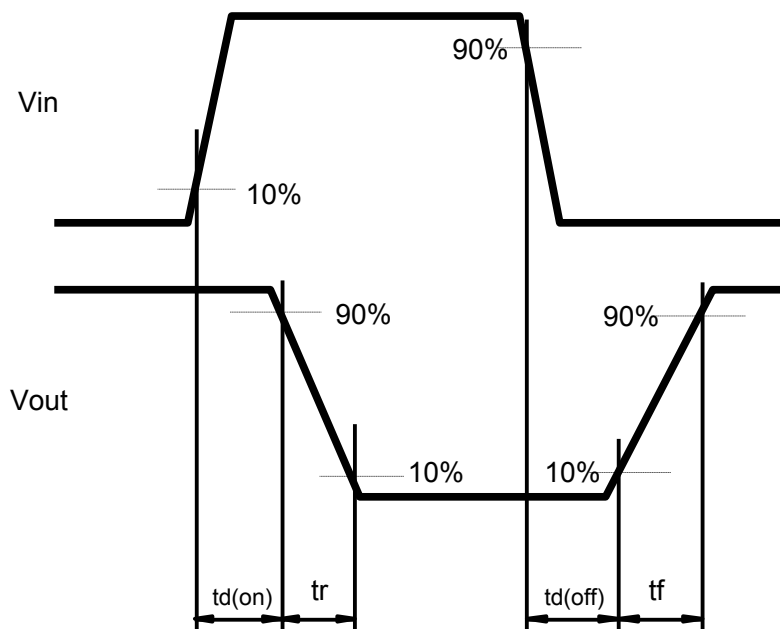
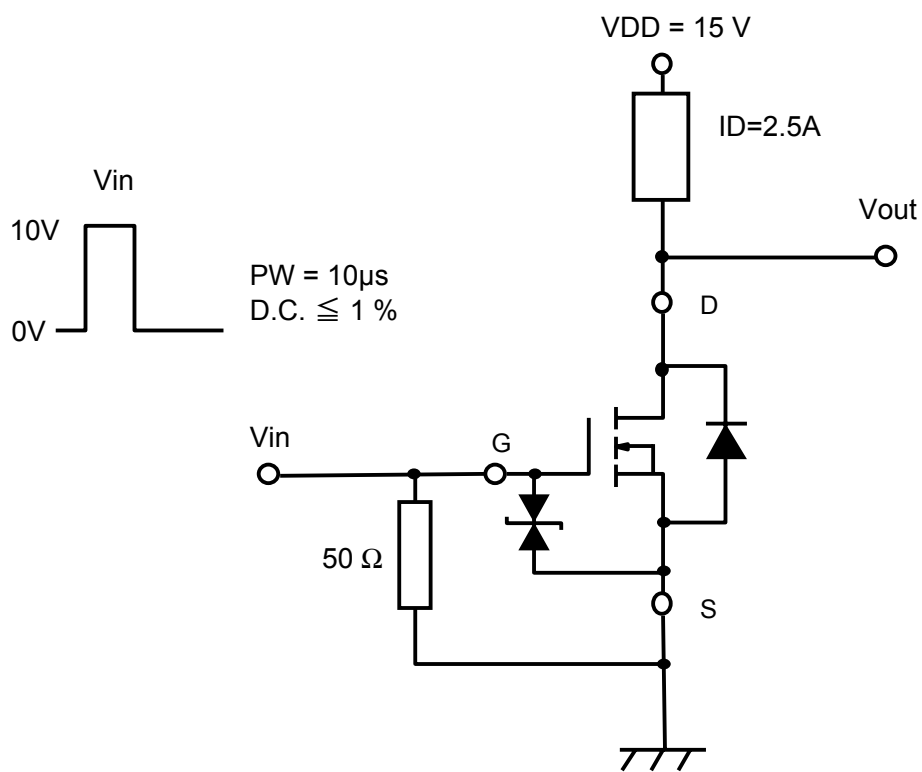
Dynamic Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Capacitance	Ciss	VDS = 10 V, VGS = 0 V, f = 1 MHz		220		pF
Output Capacitance	Coss			40		
Reverse Transfer Capacitance	Crss			35		
Turn-On Delay Time	td(on)	VDD = 15 V, VGS = 0 to 10 V		7		ns
Rise Time	tr	ID = 2.5 A (See Figure 2)		3		
Turn-Off Delay Time	td(off)	VDD = 15 V, VGS = 10 to 0 V		15		
Fall Time	tf	ID = 2.5 A (See Figure 2)		9		
Total Gate Charge	Qg	VDD = 15 V, VGS = 0 to 4.5 V, ID = 5 A		2.8		nC
Gate to Source Charge	Qgs			1.1		
Gate to Drain Charge	Qgd			1.2		

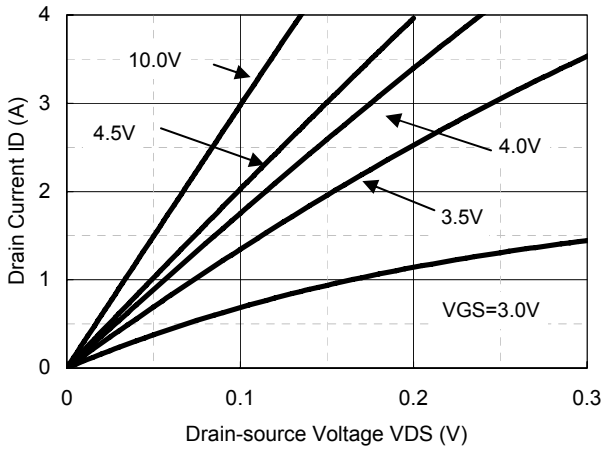
Body Diode Characteristic

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Diode Forward Voltage *1	VSD	IS = 2.5 A, VGS = 0 V		0.8	1.2	V

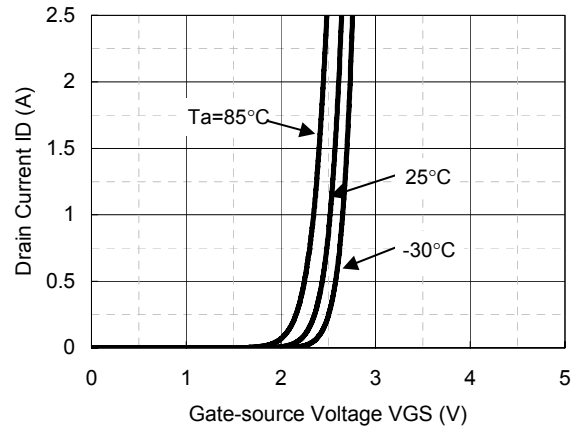
Note *1 Pulse test: Ensure that the channel temperature does not exceed 150 °C



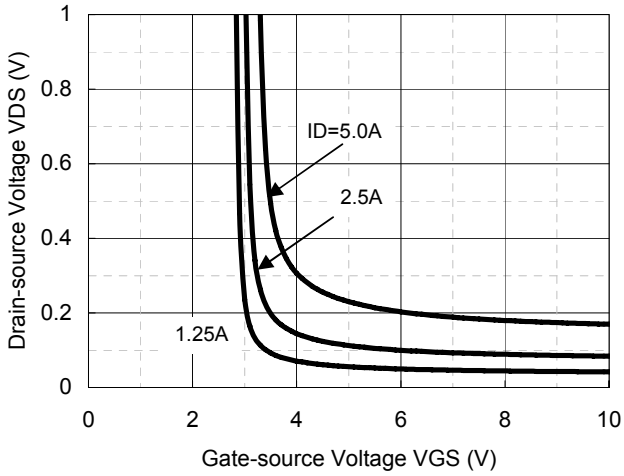
(Figure 2) Measurement circuit for Turn-On Delay Time/Rise Time/Turn-Off Delay Time/Fall Time



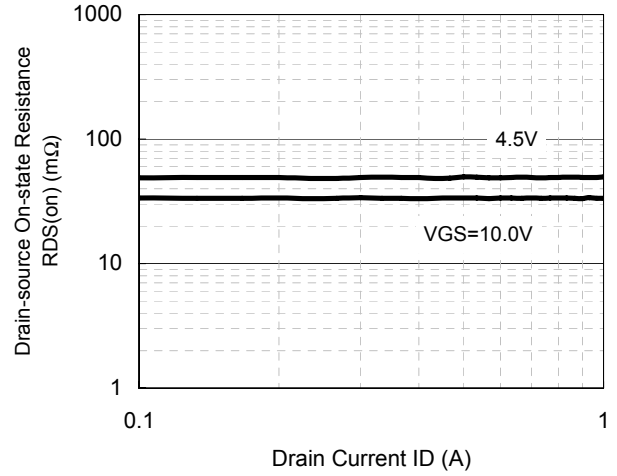
ID - VDS



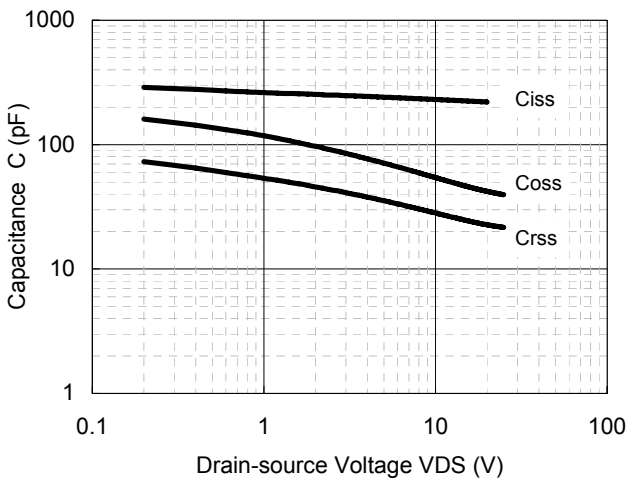
ID - VGS



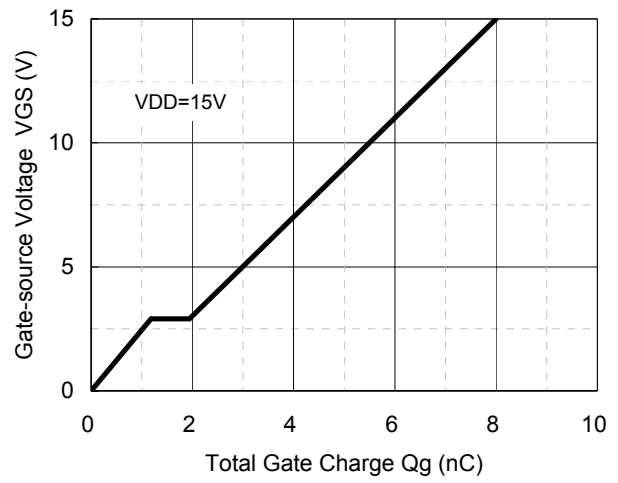
VDS - VGS



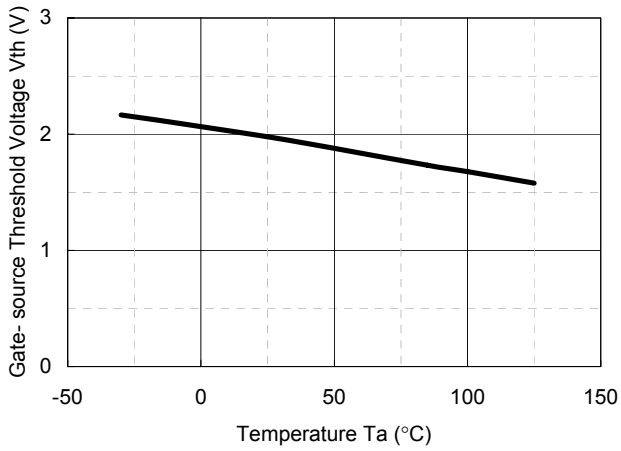
RDS(on) - ID



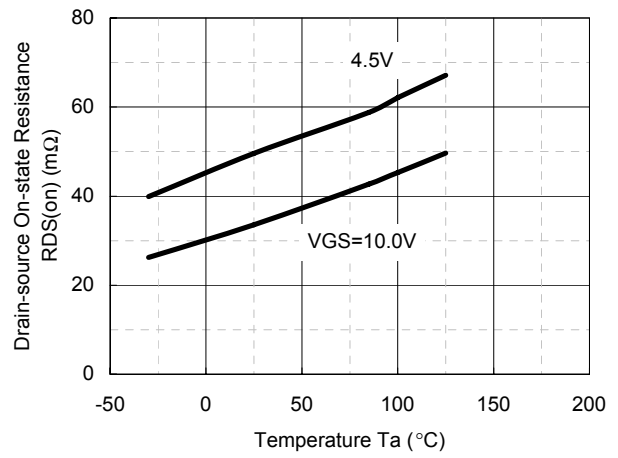
Capacitance - VDS



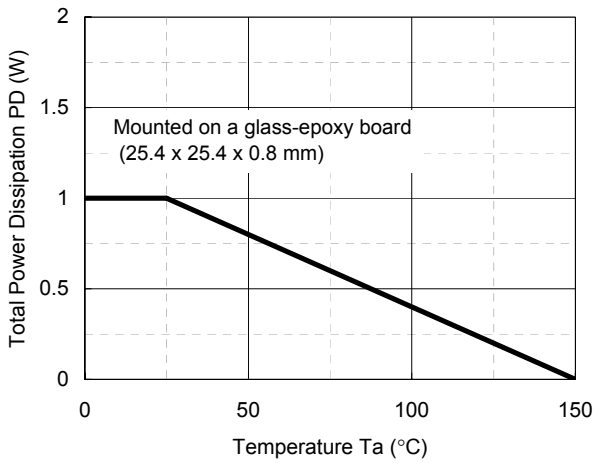
Dynamic Input/Output Characteristics



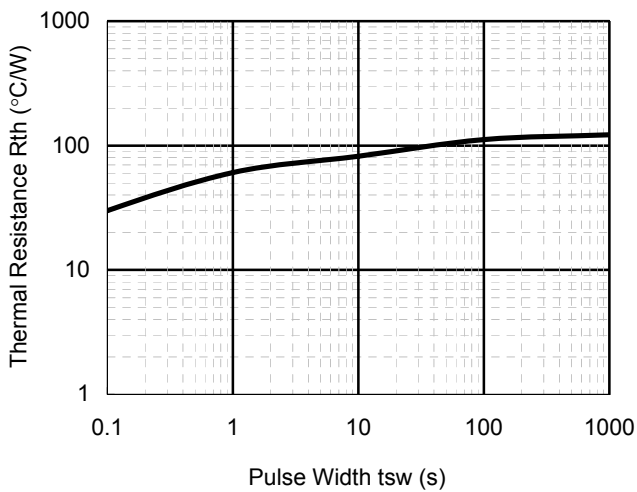
V_{th} - T_a



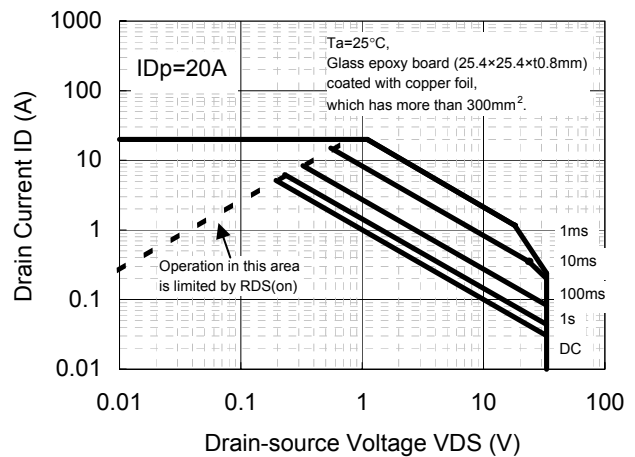
$R_{DS(on)}$ - T_a



P_D - T_a



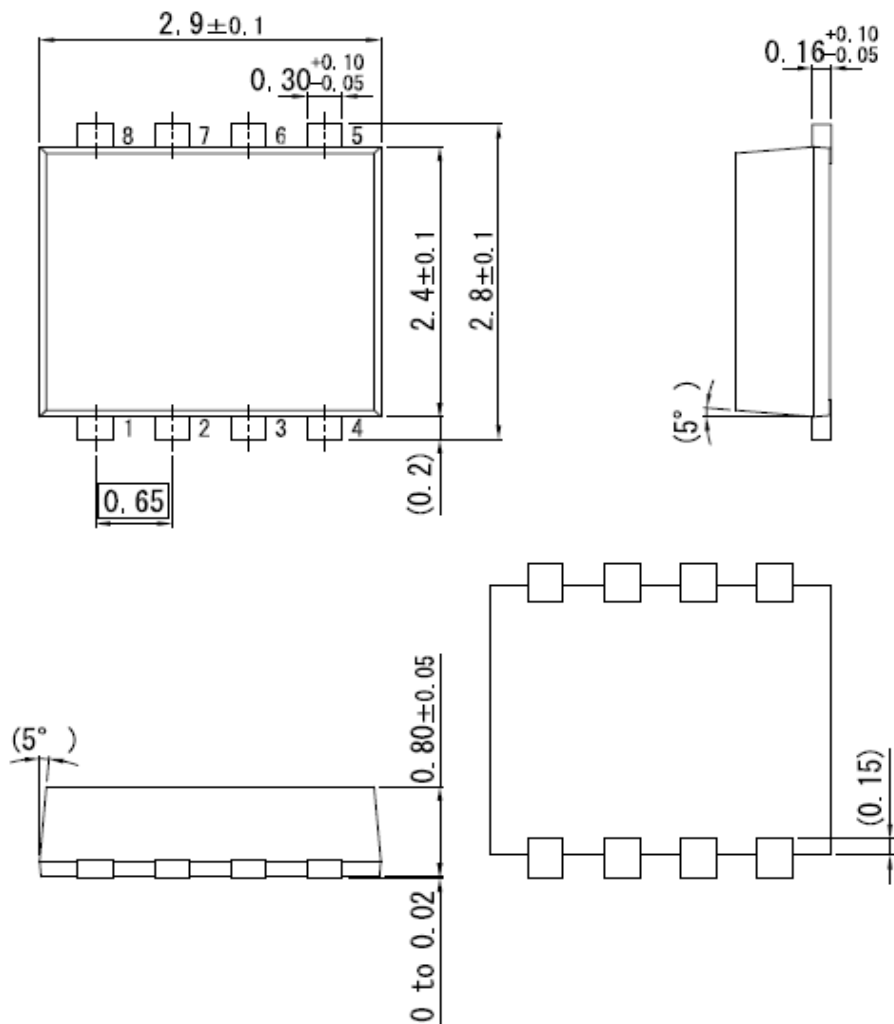
R_{th} - t_{sw}



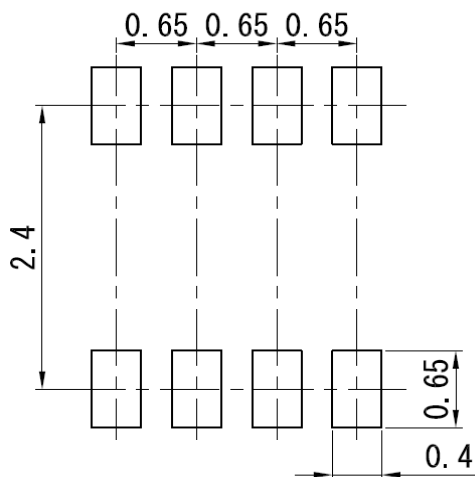
Safe Operating Area

WMini8-F1

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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