



MOS FET
SK8603160L

SK8603160L Silicon N-channel MOS FET

For Load-switching / For DC-DC Converter

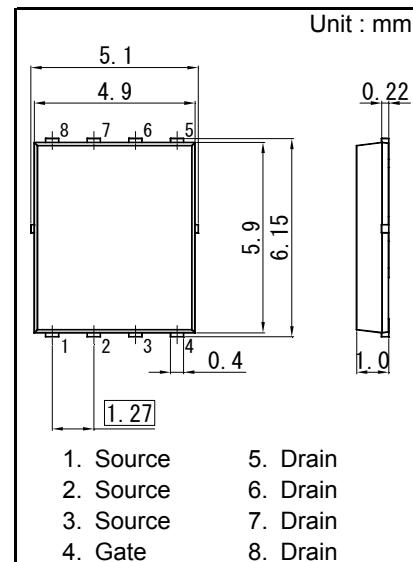
■ Features

- Low Drain-source On-state Resistance : $R_{DS(on)}$ typ = 3.3 mΩ (VGS = 4.5 V)
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : 16

■ Packaging

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



Panasonic	HS08-F4-B
JEITA	SC-111BC
Code	—

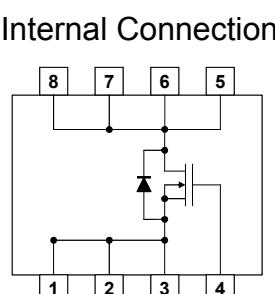
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	VDS	30	V
Gate to Source Voltage	VGS	± 20	
Drain Current	ID	34	A
		22	
		70	
		102	
Total Power Dissipation	PD	2.8	W
		28	
Thermal Resistance	Channel to Ambient	44	$^\circ\text{C} / \text{W}$
	Channel to Case	4.5	
Channel Temperature	Tch	150	$^\circ\text{C}$
Operating ambient temperature	Topr	-40 to +85	
Storage Temperature Range	Tstg	-55 to +150	
Avalanche Current (Single pulse) ³	IAR	17	A
Avalanche Energy (Single pulse) ³	EAR	36	mJ

Note *1 Device mounted on a glass-epoxy board in Figure 1

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

*3 VDD = 24 V, VGS = 10 to 0 V, L = 0.1 mH, Tch = 25 °C (initial)



Pin Name

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

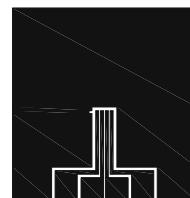


Figure 1 FR4 Glass-Epoxy Board
25.4 mm x 25.4 mm x 0.8 mm



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■ 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	30			V
Zero Gate Voltage Drain Current	IDSS	VDS = 30 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 = 3.35 mA, VDS = 10 V	1.3		3	V
Drain-source On-state Resistance	RDS(on)1	ID = 17 A, VGS = 10 V		2.5	3.3	$\text{m}\Omega$
	RDS(on)2	ID = 17 A, VGS = 4.5 V		3.3	4.3	

Dynamic Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input Capacitance	Ciss	VDS = 10 V, VGS = 0 V $f = 1 \text{ MHz}$		2 800	3 920	pF
Output Capacitance	Coss			330	462	
Reverse Transfer Capacitance	Crss			230	368	
Turn-on Delay Time ¹	td(on)	VDD = 15 V, VGS = 0 to 10 V		13		ns
Rise Time ¹	tr	ID = 17 A		12		
Turn-off Delay Time ¹	td(off)	VDD = 15 V, VGS = 10 to 0 V		52		ns
Fall Time ¹	tf	ID = 17 A		8		
Total Gate Charge	Qg	VDD = 15 V, VGS = 0 to 4.5 V ID = 17 A		22		nC
Gate to Source Charge	Qgs			7		
Gate to Drain Charge	Qgd			9		
Gate resistance	rg	$f = 5 \text{ MHz}$		1.2	3	Ω

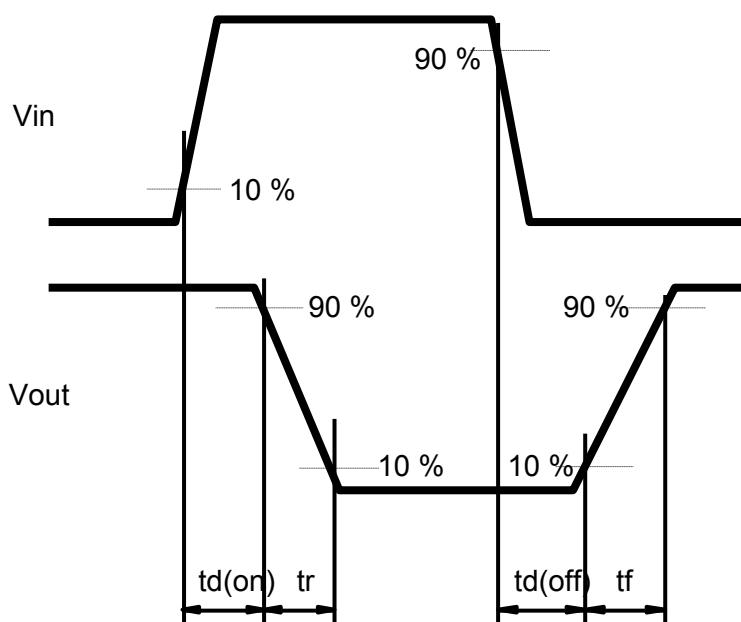
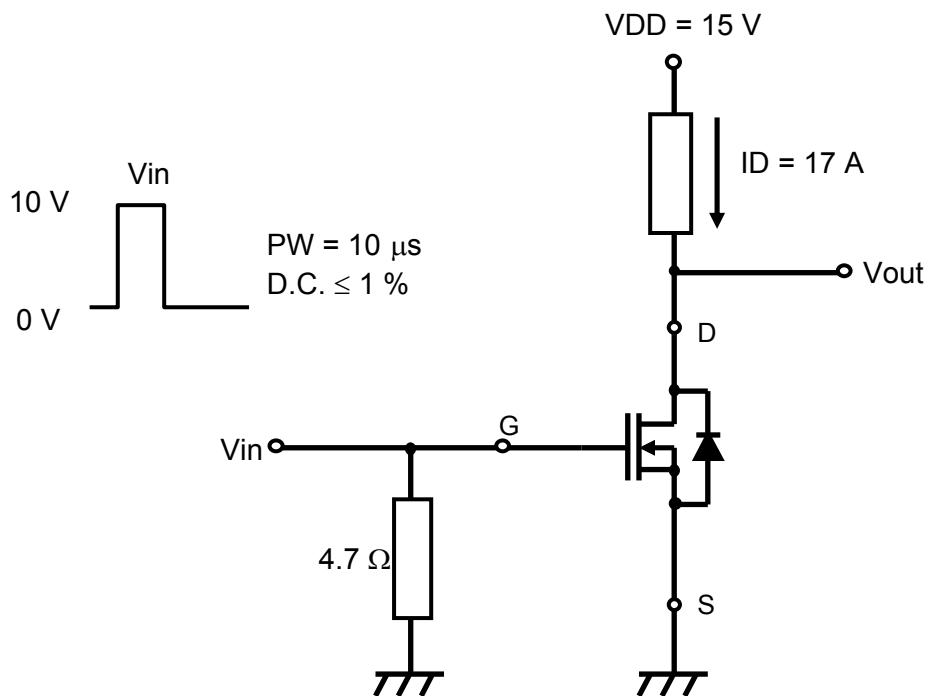
Body Diode Characteristic

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode Forward Voltage	VSD	IS = 17 A, VGS = 0 V		0.8	1.2	V

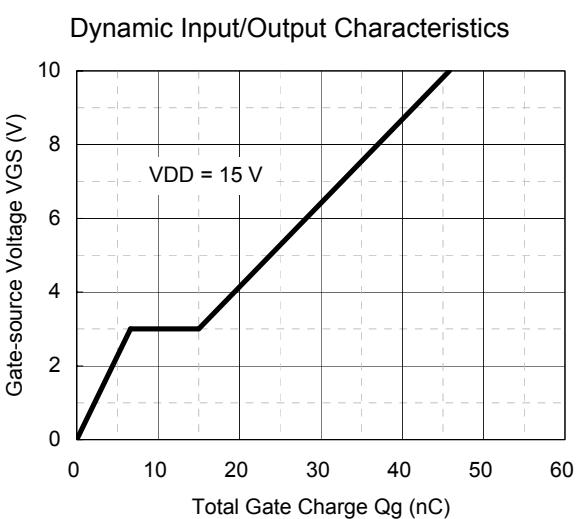
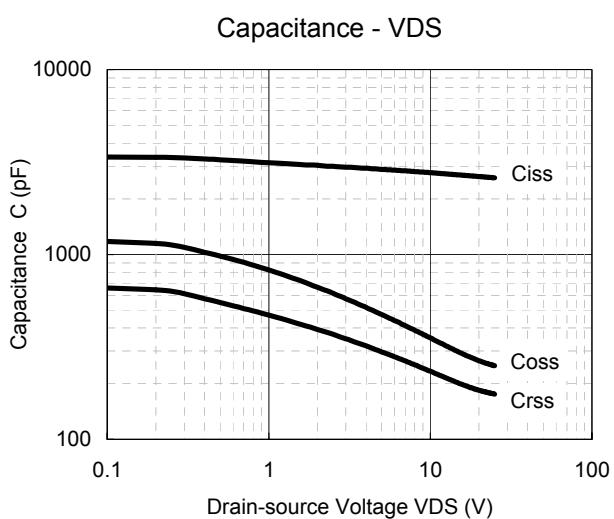
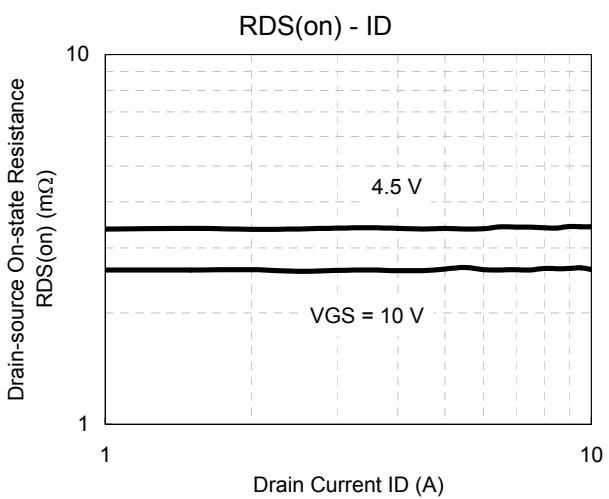
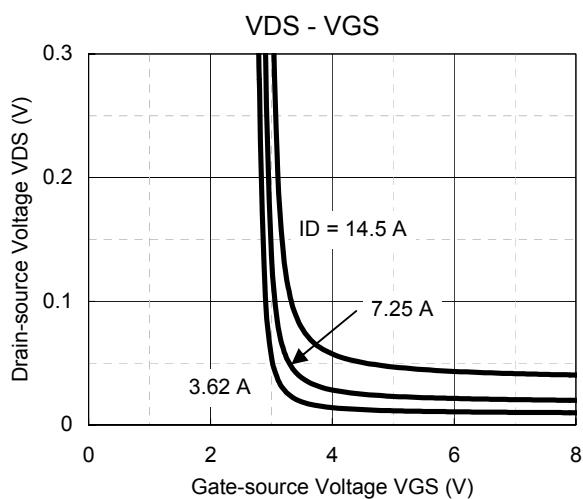
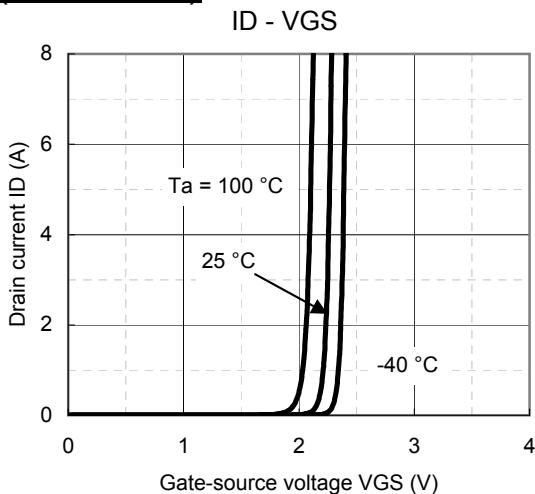
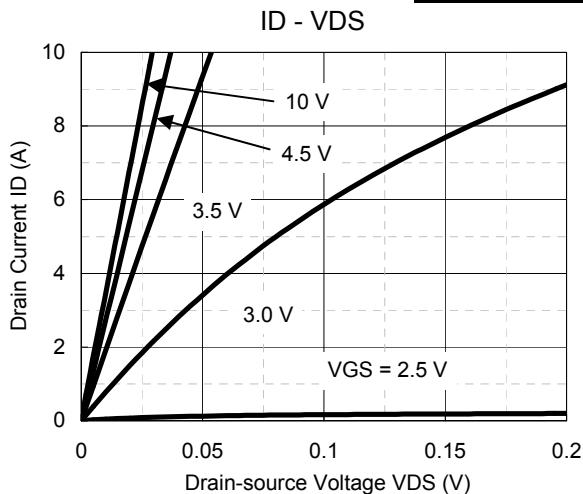
Note : 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

2. *1 Measurement circuit for Turn-on Delay Time / Rise Time / Turn-off Delay Time / Fall Time

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

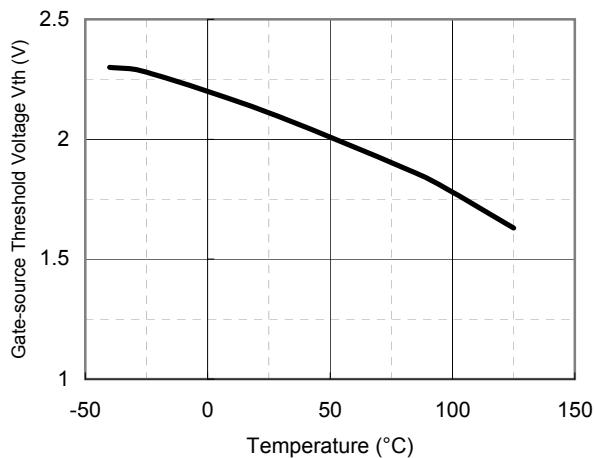


Technical Data (reference)

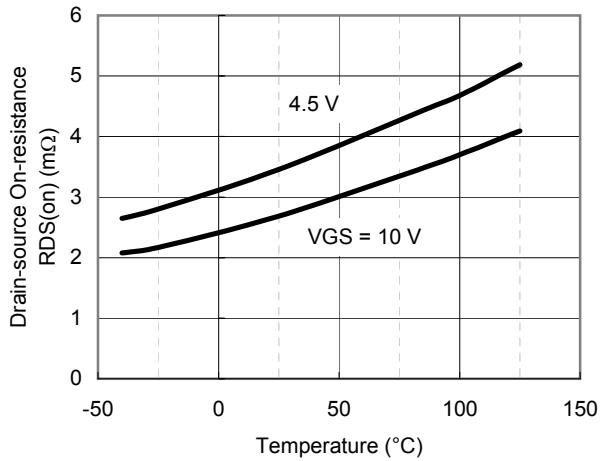


Technical Data (reference)

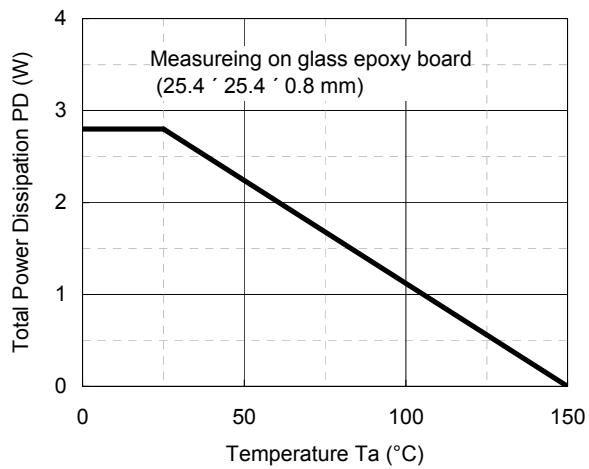
Vth - Ta



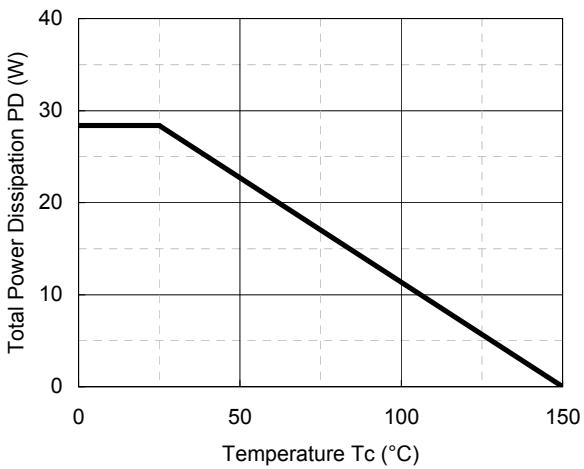
RDS(on) - Ta



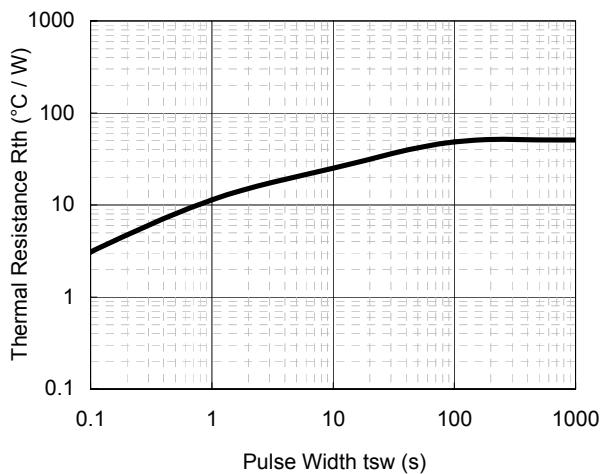
PD - Ta



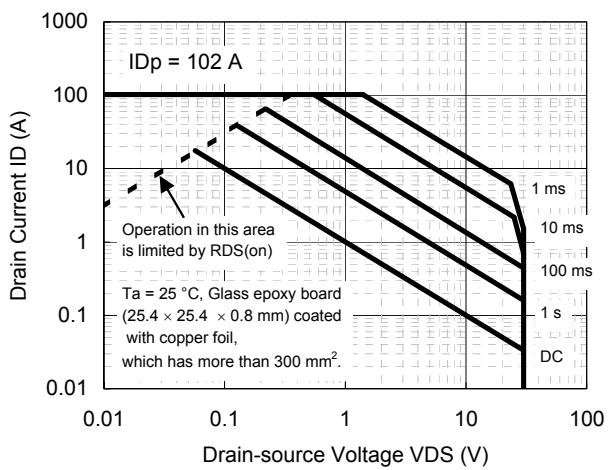
PD - Tc



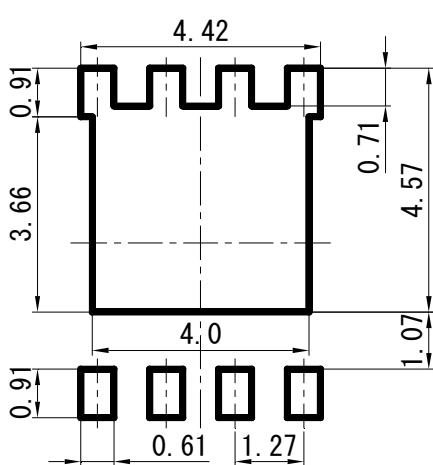
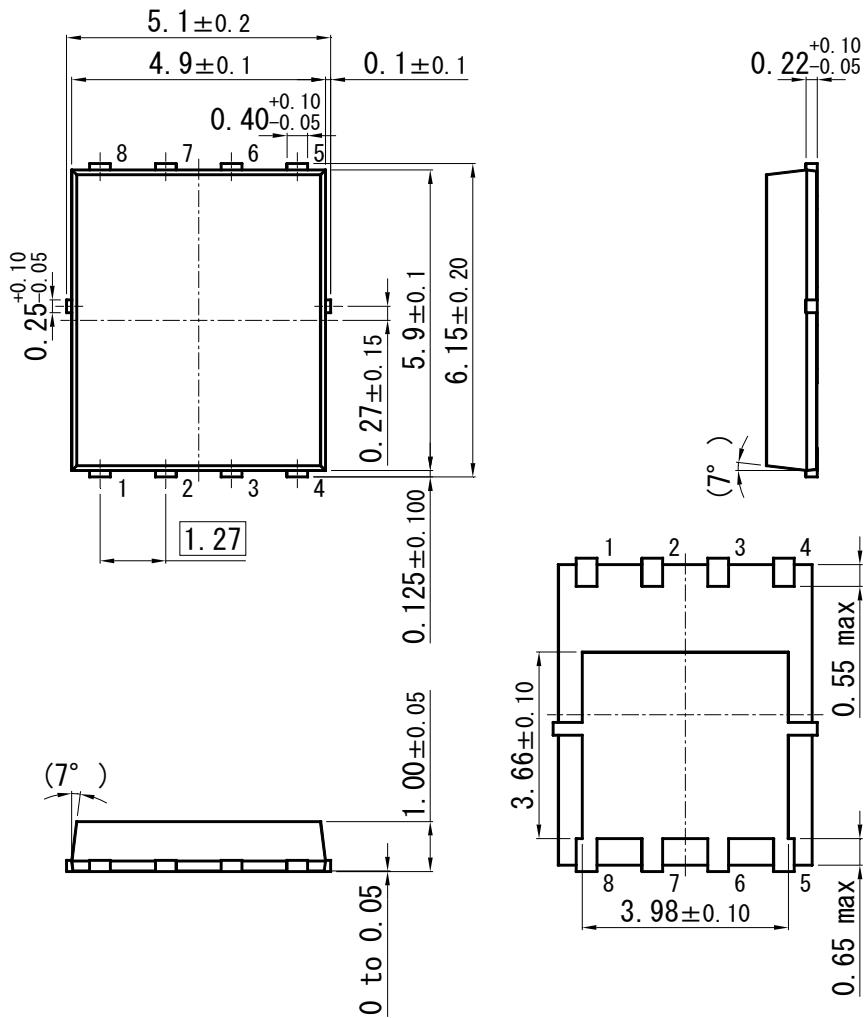
Rth - tsw



Safe Operating Area



HSO8-F4-B



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