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Data Sheet

4V Drive Pch+Pch MOSFET

SH8J66

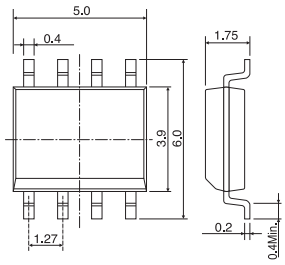
●Structure
Silicon P-channel MOSFET

●Features
1) Low On-resistance.
2) Built-in G-S Protection Diode.
3) Small Surface Mount Package (SOP8).

●Applications
Switching

●Dimensions (Unit : mm)

SOP8

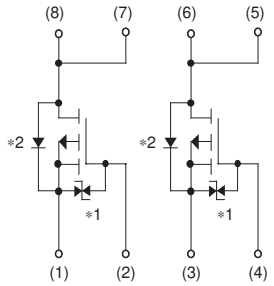


Each lead has same dimensions

●Packaging specifications

Type	Package	Taping
	Code	TB
	Basic ordering unit (pieces)	2500
SH8J66		◯

●Inner circuit



*1 ESD PROTECTION DIODE
*2 BODY DIODE

(1) Tr1 Source
(2) Tr1 Gate
(3) Tr2 Source
(4) Tr2 Gate
(5) Tr2 Drain
(6) Tr2 Drain
(7) Tr1 Drain
(8) Tr1 Drain

●Absolute maximum ratings (Ta=25°C)
<It is the same ratings for Tr1 and Tr2.>

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	−30	V
Gate-source voltage		V_{GSS}	±20	V
Drain current	Continuous	I_D	±9	A
	Pulsed	I_{DP} *1	±36	A
Source current (Body diode)	Continuous	I_S	−1.6	A
	Pulsed	I_{SP} *1	−36	A
Total power dissipation		P_D *2	2.0	W / TOTAL
			1.4	W / ELEMENT
Channel temperature		Tch	150	°C
Range of Storage temperature		Tstg	−55 to +150	°C

*1 Pw≤10μs, Duty cycle≤1%
*2 Mounted on a ceramic board

●**Electrical characteristics** (Ta=25°C)

<It is the same characteristics for Tr1 and Tr2.>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	–	–	±10	μA	V_{GS}=±20V, V_{DS}=0V
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	–30	–	–	V	I_D= –1mA, V_{GS}=0V
Zero gate voltage drain current	I_{DSS}	–	–	–1	μA	V_{DS}= –30V, V_{GS}=0V
Gate threshold voltage	$V_{GS\ (th)}$	–1.0	–	–2.5	V	V_{DS}= –10V, I_D= –1mA
Static drain-source on-state resistance	$R_{DS\ (on)}$ *	–	13.5	18.5	mΩ	I_D= –9A, V_{GS}= –10V
		–	17.5	23.6	mΩ	I_D= –4.5A, V_{GS}= –4.5V
		–	19.0	24.7	mΩ	I_D= –4.5A, V_{GS}= –4.0V
Forward transfer admittance	$\|Y_{fs}\|$ *	11	–	–	S	V_{DS}= –10V, I_D= –9A
Input capacitance	C_{iss}	–	3000	–	pF	V_{DS}= –10V
Output capacitance	C_{oss}	–	400	–	pF	V_{GS}=0V
Reverse transfer capacitance	C_{rss}	–	400	–	pF	f=1MHz
Turn-on delay time	$t_{d\ (on)}$ *	–	20	–	ns	V_{DD}≒ –15V I_D= –4.5A V_{GS}= –10V R_L=3.3Ω R_G=10Ω
Rise time	t_r *	–	60	–	ns	
Turn-off delay time	$t_{d\ (off)}$ *	–	170	–	ns	
Fall time	t_f *	–	100	–	ns	
Total gate charge	Q_g *	–	35	–	nC	V_{DD}≒ –15V I_D= –9A V_{GS}= –5V R_L=1.7Ω / R_G=10Ω
Gate-source charge	Q_{gs} *	–	9	–	nC	
Gate-drain charge	Q_{gd} *	–	12	–	nC	

*Pulsed

●**Body diode characteristics** (Source-drain) (Ta=25°C)

<It is the same characteristics for Tr1 and Tr2.>

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD} *	–	–	–1.2	V	I_S= –9A, V_{GS}=0V

* Pulsed

●Electrical characteristic curves

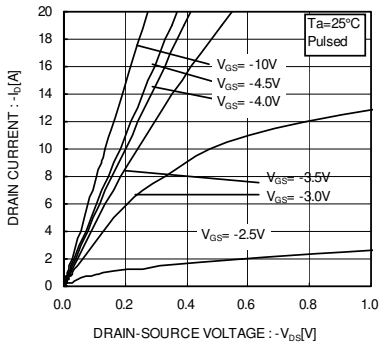


Fig.1 Typical output characteristics(Ⅰ)

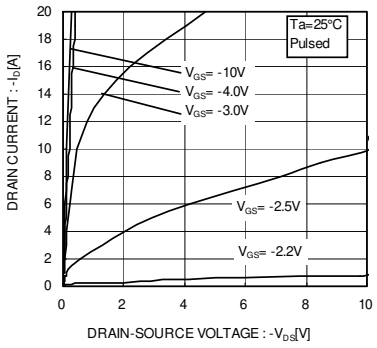


Fig.2 Typical output characteristics(Ⅱ)

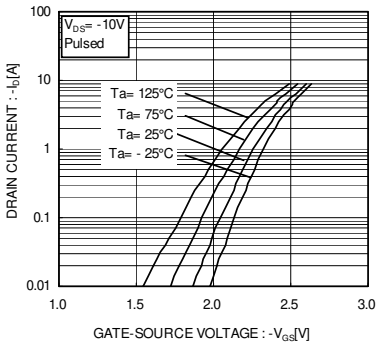


Fig.3 Typical Transfer Characteristics

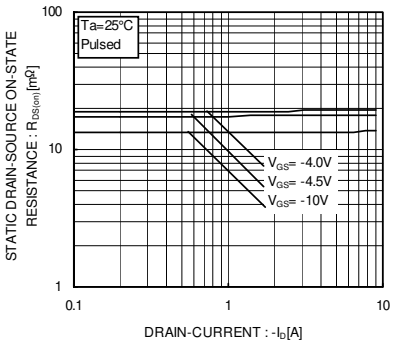


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current(I)

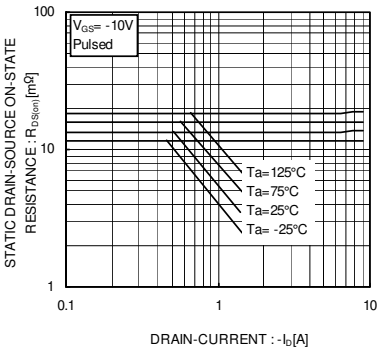


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current(Ⅱ)

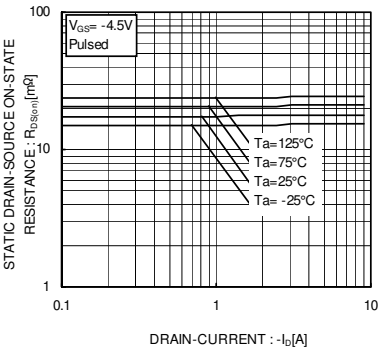


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current(Ⅲ)

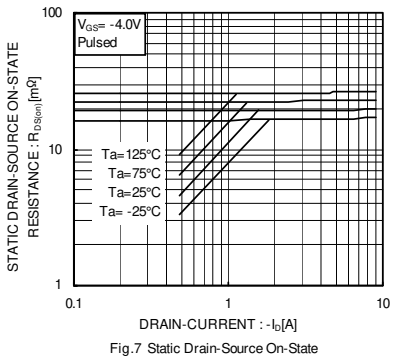


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current(Ⅳ)

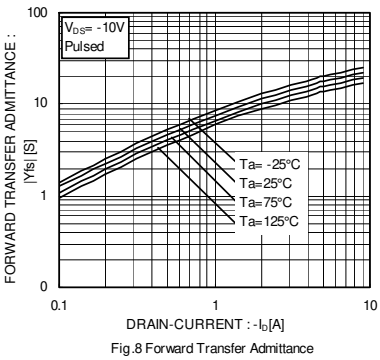


Fig.8 Forward Transfer Admittance vs. Drain Current

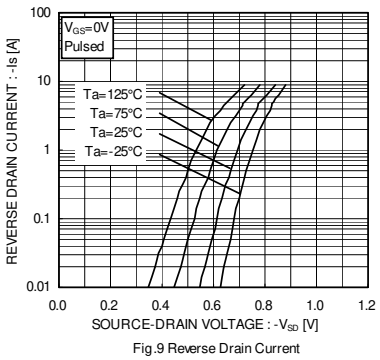


Fig.9 Reverse Drain Current vs. Sourse-Drain Voltage

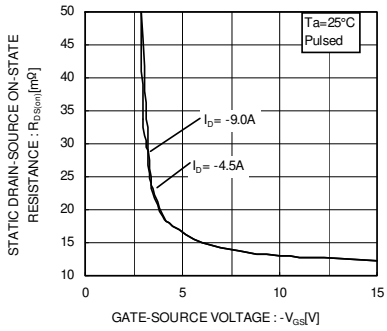


Fig.10 Static Drain-Source On-State Resistance vs. Gate Source Voltage

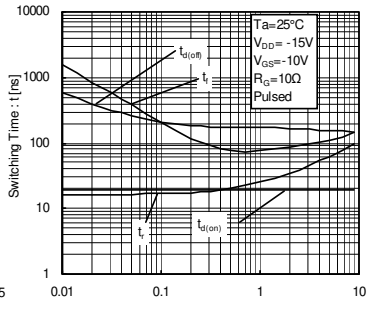


Fig.11 Switching Characteristics

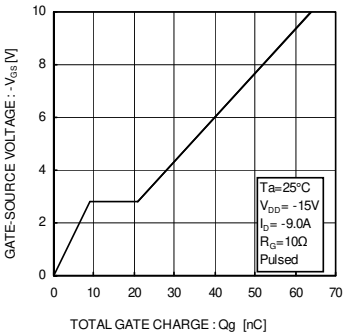


Fig.12 Dynamic Input Characteristics

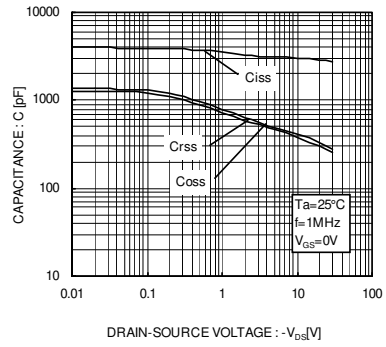


Fig.13 Typical Capacitance vs. Drain-Source Voltage

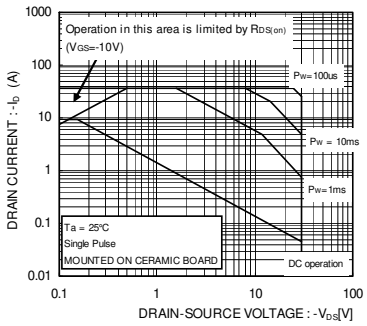


Fig.14 Maximum Safe Operating Aera

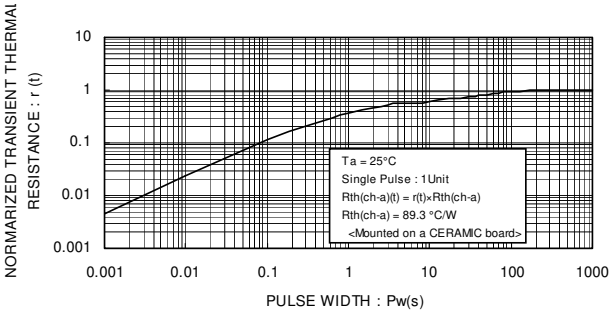


Fig.15 Normalized Transient Thermal Resistance vs. Pulse Width

●**Measurement circuits**

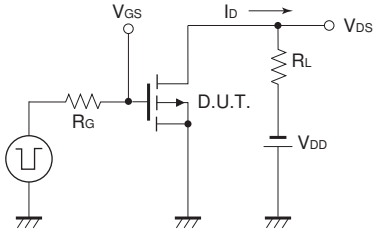


Fig.1-1 Switching Time Test Circuit

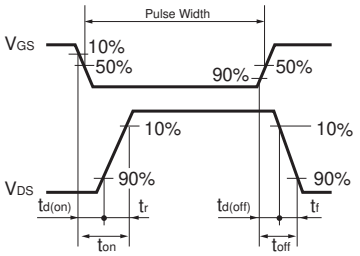


Fig.1-2 Switching Time Waveforms

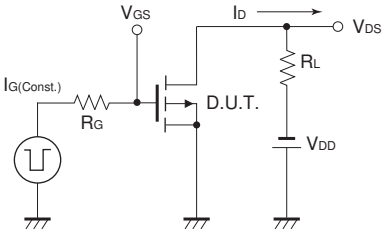


Fig.2-1 Gate Charge Test Circuit

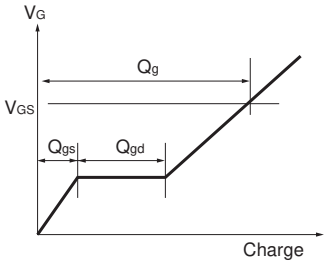


Fig.2-2 Gate Charge Waveform

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