

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

●Packaging specifications

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

●Absolute maximum ratings (Ta=25°C)

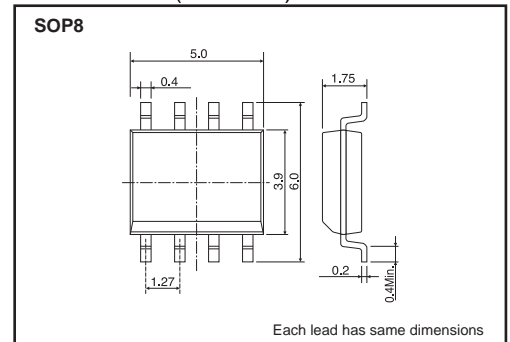
<It is the same ratings for Tr1 and Tr2.>

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	T_{ch}	150	°C	
Range of Storage temperature	T_{stg}	-55 to +150	°C	

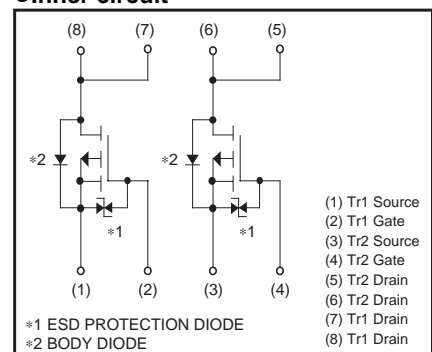
*1 $P_w \leq 10 \mu s$, Duty cycle $\leq 1\%$

*2 Mounted on a ceramic board

●Dimensions (Unit : mm)



●Inner circuit



●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
Rise time	t _r *	-	60	-	ns	I _D =-4.5A
Turn-off delay time	t _{d(off)} *	-	170	-	ns	V _{GS} =-10V
Fall time	t _f *	-	100	-	ns	R _L =3.3Ω
Total gate charge	Q _g *	-	35	-	nC	R _G =10Ω
Gate-source charge	Q _{gs} *	-	9	-	nC	V _{DD} =-15V
Gate-drain charge	Q _{gd} *	-	12	-	nC	I _D =-9A
						V _{GS} =-5V
						R _L =1.7Ω / R _G =10Ω

*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

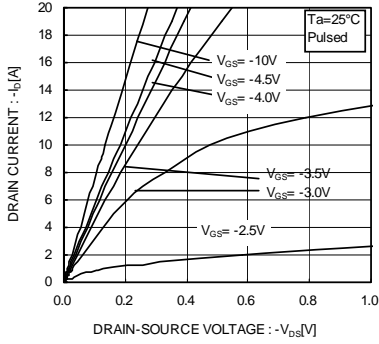


Fig.1 Typical output characteristics(I)

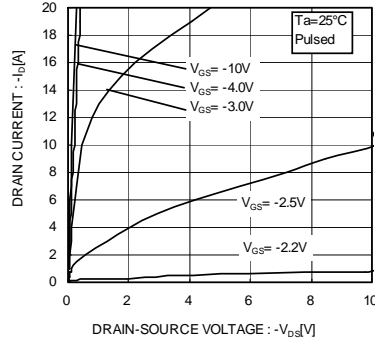


Fig.2 Typical output characteristics(II)

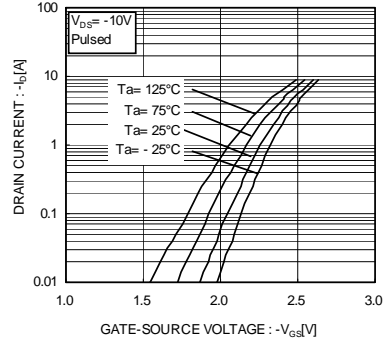


Fig.3 Typical Transfer Characteristics

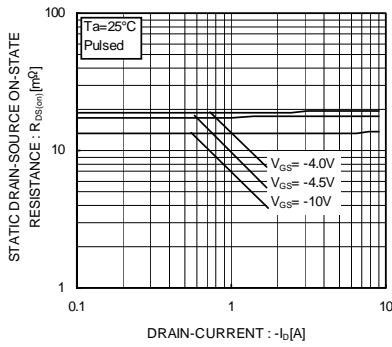


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current(I)

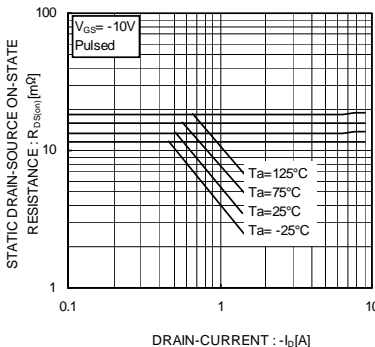


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current(II)

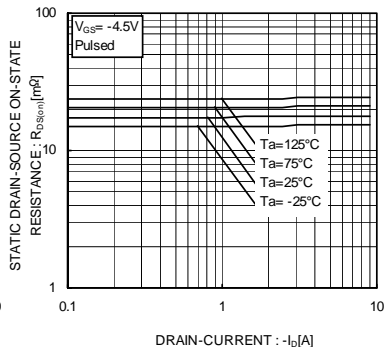


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current(III)

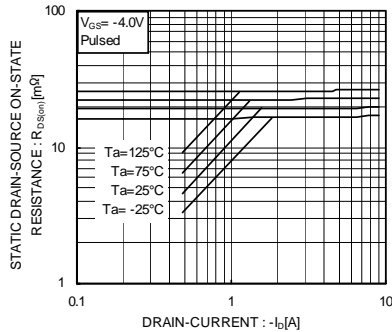


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current(IV)

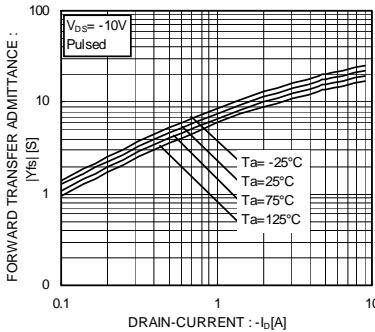


Fig.8 Forward Transfer Admittance vs. Drain Current

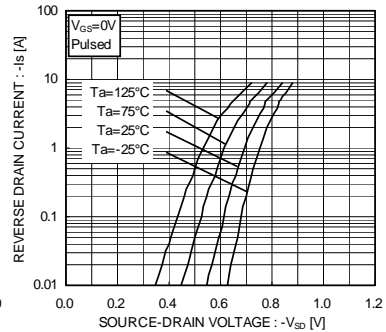


Fig.9 Reverse Drain Current vs. Source-Drain Voltage

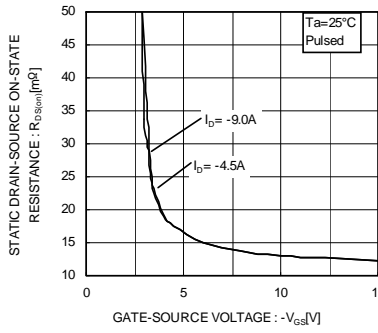


Fig.10 Static Drain-Source On-State Resistance vs. Gate Source Voltage

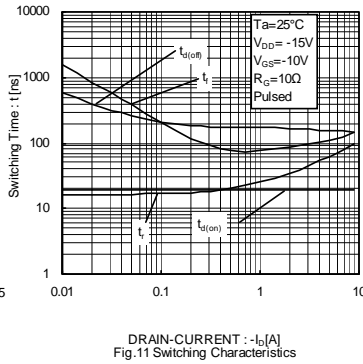


Fig.11 Switching Characteristics

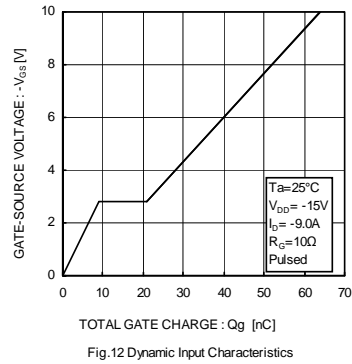


Fig.12 Dynamic Input Characteristics

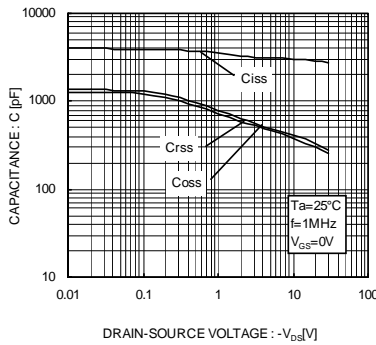


Fig.13 Typical Capacitance vs. Drain-Source Voltage

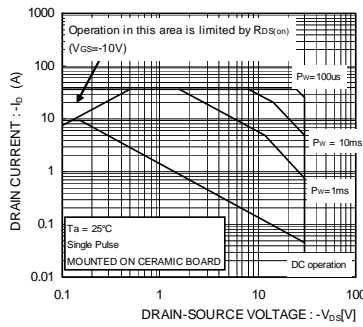


Fig.14 Maximum Safe Operating Area

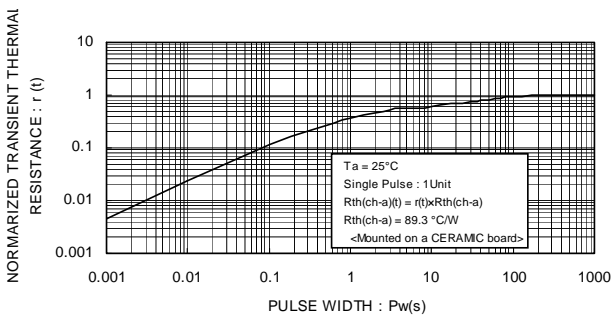


Fig.15 Normalized Transient Thermal Resistance vs. Pulse Width

●Measurement circuits

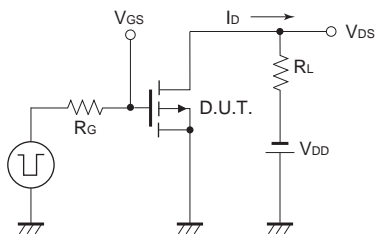


Fig.1-1 Switching Time Test Circuit

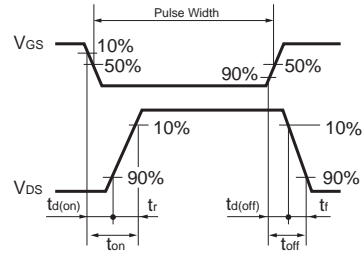


Fig.1-2 Switching Time Waveforms

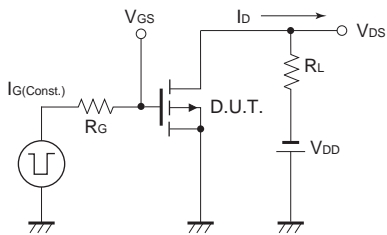


Fig.2-1 Gate Charge Test Circuit

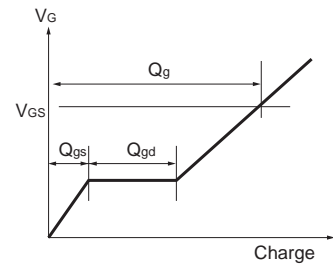


Fig.2-2 Gate Charge Waveform

Notes

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