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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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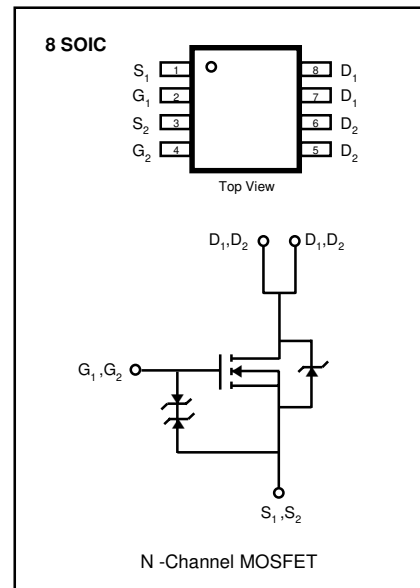


FEATURES

- ❑ Lower $R_{DS(on)}$
- ❑ Improved Inductive Ruggedness
- ❑ Fast Switching Times
- ❑ Low Input Capacitance
- ❑ Extended Safe Operating Area
- ❑ Improved High Temperature Reliability

Product Summary

Part Number	BV_{DSS}	$R_{DS(on)}$	I_D
SSD2009	50V	0.13 Ω	3.0A



Absolute Maximum Ratings

Symbol	Characteristic	Value	Units
V_{DSS}	Drain-to-Source Voltage	50	V
I_D	Continuous Drain Current $T_A=25^\circ\text{C}$	3.0	A
	Continuous Drain Current $T_A=70^\circ\text{C}$	2.3	
I_{DM}	Drain Current-Pulsed ^①	10.0	A
V_{GS}	Gate-to-Source Voltage	± 20	V
P_D	Total Power Dissipation ($T_A=25^\circ\text{C}$)	2.0	W
	($T_A=70^\circ\text{C}$)	1.3	
T_J, T_{STG}	Operating and Junction Storage Temperature Range	- 55 to +150	$^\circ\text{C}$


Thermal Resistance

Symbol	Characteristic	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient	--	62.5	$^\circ\text{C}/\text{W}$

Electrical Characteristics (T_C=25°C unless otherwise specified)

Symbol	Characteristic	Min.	Typ.	Max.	Units	Test Condition
BV _{DSS}	Drain-Source Breakdown Voltage	50	--	--	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	Gate Threshold Voltage	1.0	--	3.0	V	V _{DS} =5V, I _D =250μA
I _{GSS}	Gate-Source Leakage, Forward	--	--	100	nA	V _{GS} =20V
	Gate-Source Leakage, Reverse	--	--	-100	nA	V _{GS} =-20V
I _{DSS}	Drain-to-Source Leakage Current	--	--	2.0	μA	V _{DS} =40V
		--	--	25		V _{DS} =40V, T _C =55°C
I _{DON}	On-State Drain-Source Current	10	--	--	A	V _{DS} =5V, V _{GS} =10V
R _{DS(on)}	Static Drain-Source	--	0.065	0.13	Ω	V _{GS} =10V, I _D =3.0A
	On-State Resistance ②	--	0.084	0.2		V _{GS} =4.5V, I _D =1.5A
g _{fs}	Forward Transconductance ②	--	7.0	--	S	V _{DS} =15V, I _D =3.0A
t _{d(on)}	Turn-On Delay Time	--	16	20	ns	V _{DD} =25V, I _D =1.0A, R _θ =6.0Ω, ②③
t _r	Rise Time	--	16	20		
t _{d(off)}	Turn-Off Delay Time	--	40	70		
t _f	Fall Time	--	23	50		
Q _g	Total Gate Charge	--	17	25	nC	V _{DS} =25V, V _{GS} =10V, I _D =2.0A ②③
Q _{gs}	Gate-Source Charge	--	1.8	--		
Q _{gd}	Gate-Drain ("Miller") Charge	--	3.9	--		

Source-Drain Diode Ratings and Characteristics

Symbol	Characteristic	Min.	Typ.	Max.	Units	Test Condition
I _S	Continuous Source Current (Body Diode)	--	--	2.0	A	Modified MOSFET Symbol Showing the Integral Reverse P-N Junction Rectifier 
V _{SD}	Diode Forward Voltage ②	--	--	1.2	V	T _A =25°C, I _S =1.5A, V _{GS} =0V
t _{rr}	Reverse Recovery Time ②	--	100	--	ns	T _A =25°C, I _F =1.5A, di _F /dt=100A/μs

Notes ;

- ① Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature
- ② Pulse Test : Pulse Width = 250μs, Duty Cycle ≤ 2%
- ③ Essentially Independent of Operating Temperature

Fig 1. Output Characteristics

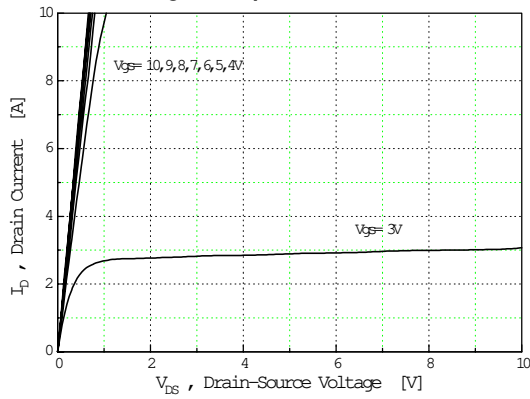


Fig 2. Transfer Characteristics

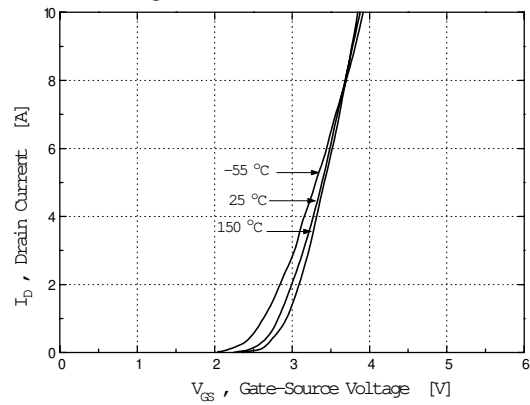


Fig 3. On-Resistance vs. Drain Current

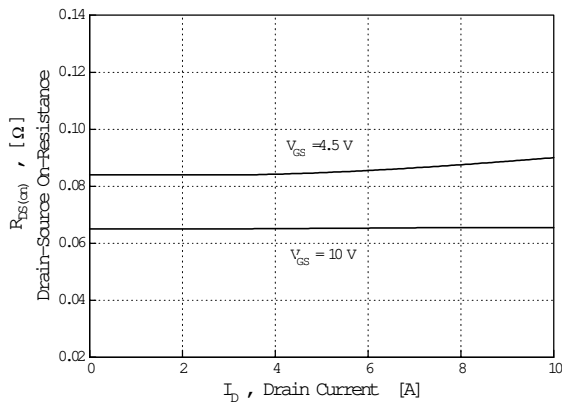


Fig 4. Source-Drain Forward Voltage

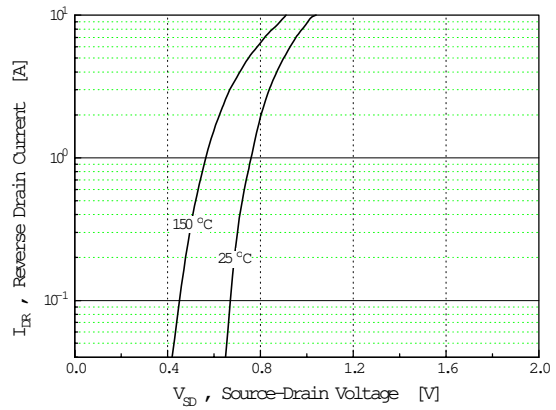


Fig 5. Capacitance vs. Drain-Source Voltage

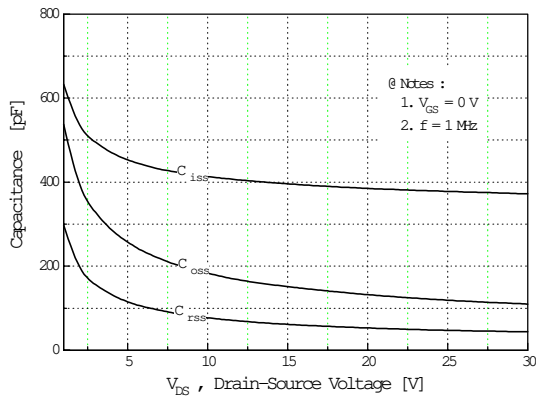


Fig 6. Gate Charge vs. Gate-Source Voltage

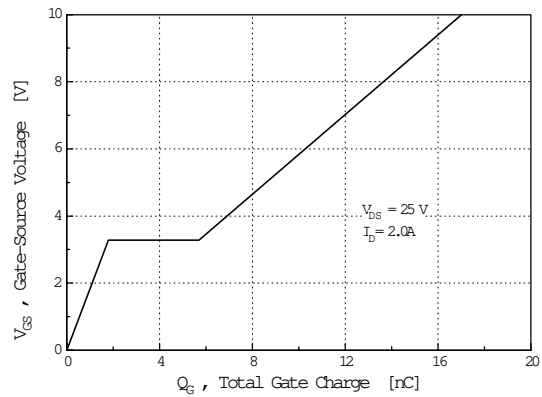


Fig 7. Breakdown Voltage vs. Temperature

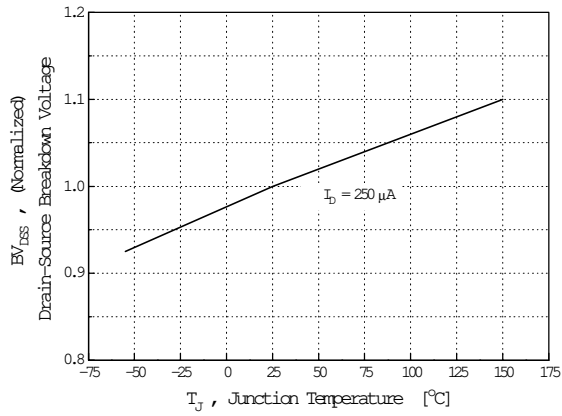


Fig 8. On-Resistance vs. Temperature

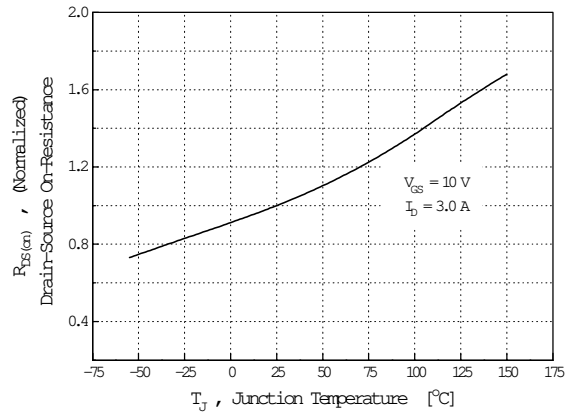
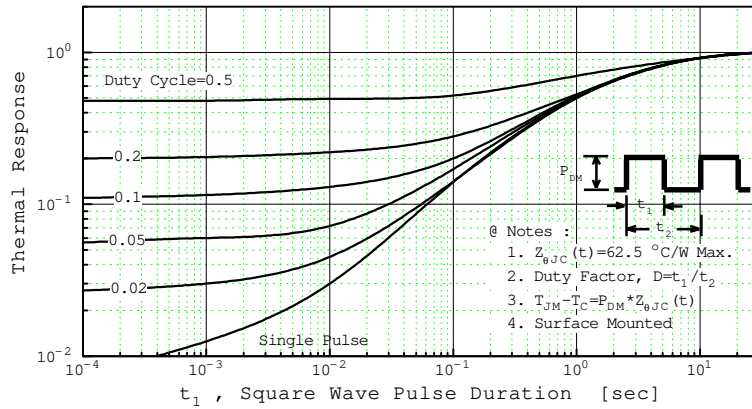


Fig 9. Normalized Effective Transient Thermal Impedance, Junction-to-Ambient



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