Elektronische Bauelemente

SSG4801

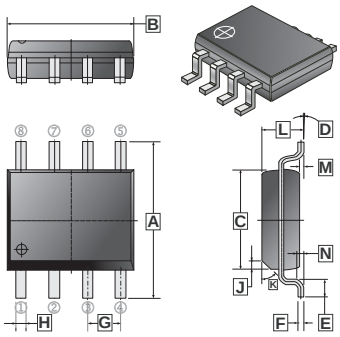
-5 A, -30 V, $R_{DS(ON)}$ 50 mΩ
Dual-P Enhancement Mode Power MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSG4801 uses advanced trench technology to provide excellent on-resistance, low gate charge and operation with gate voltages as low as 2.5V. The device is suitable for use as a load switch or in PWM applications. It may be used in a common drain arrangement to from a bidirectional blocking switch.

SOP-8

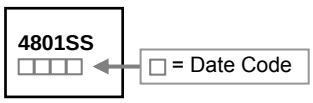


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.35	0.49
B	4.80	5.00	J	0.375 REF.	
C	3.80	4.00	K	45°	
D	0°	8°	L	1.35	1.75
E	0.40	0.90	M	0.10	0.25
F	0.19	0.25	N	0.25 REF.	
G	1.27 TYP.				

FEATURES

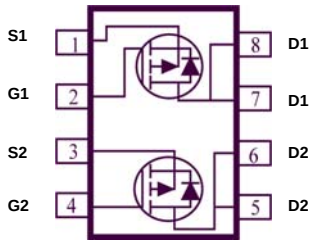
- Simple Drive Requirement
- Lower On-resistance
- Low Gate Charge

MARKING



PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOP-8	2.5K	13' inch



MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1]	T_A = 25°C	I_D	-5	A
	T_A = 70°C		-4.2	
Pulsed Drain Current [2]		I_{DM}	-30	A
Total Power Dissipation [1]	T_A = 25°C	P_D	2	W
Linear Derating Factor			0.016	W / °C
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 ~ 150	°C
Thermal Resistance Ratings				
Thermal Resistance Junction-ambient [1] (Max.)		$R_{\theta JA}$	62.5	°C / W

Notes :
1. Surface Mounted on FR4 Board, t ≦ 10sec.
2. Pulse width ≦ 300 μs, duty cycle ≦ 2%

ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise specified)

Parameter		Symbol	Min	Typ	Max	Unit	Test condition
Drain-Source Breakdown Voltage		BV_{DSS}	-30	-	-	V	V_{GS}=0V, I_D = -250uA
Gate Threshold Voltage		$V_{GS(th)}$	-0.5	-	-1.0	V	V_{DS}=V_{GS}, I_D = -250uA
Forward Transconductance [2]		g_{fs}	-	11	-	S	V_{DS}= -5V, I_D = -5A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±12V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	-1	μA	V_{DS}= -24V, V_{GS}=0V
	T_J=55°C		-	-	-5	μA	V_{DS}= -24V, V_{GS}=0V
Static Drain-Source On-Resistance [2]		$R_{DS(ON)}$	-	-	50	mΩ	V_{GS}= -10V, I_D= -5A
			-	-	65		V_{GS}= -4.5V, I_D= -4A
			-	-	120		V_{GS}= -2.5V, I_D= -1A
Total Gate Charge [2]		Q_g	-	9.5	-	nC	V_{DS}= -15V, I_D = -5A, V_{GS}= -4.5V
Gate-Source Chagre		Q_{gs}	-	2.0	-		
Gate-Drain ("Miller") Change		Q_{gd}	-	3.1	-		
Turn-on Delay Time [2]		$T_{d(ON)}$	-	12	-	nS	V_{DS}= -15V, V_{GS}= -10V R_L=3Ω, R_G=6Ω
Rise Time		T_r	-	4	-		
Turn-off Delay Time		$T_{d(OFF)}$	-	37	-		
Fall Time		T_f	-	12	-		
Input Capacitance		C_{ISS}	-	952	-	pF	V_{DS}= -15V V_{GS}=0V f=1.0MHz
Output Capacitance		C_{OSS}	-	103	-		
Reverse Transfer Capacitance		C_{RSS}	-	77	-		
Source-Drain Diode							
Forward On Voltage [2]		V_{SD}	-	-	-1.2	V	I_S= -1.7A, V_{GS}=0V

Notes :

1 Surface Mounted on FR4 Board, t ≦ 10sec.

2. Pulse width ≦ 300 μs, duty cycle ≦ 2%

CHARACTERISTIC CURVES

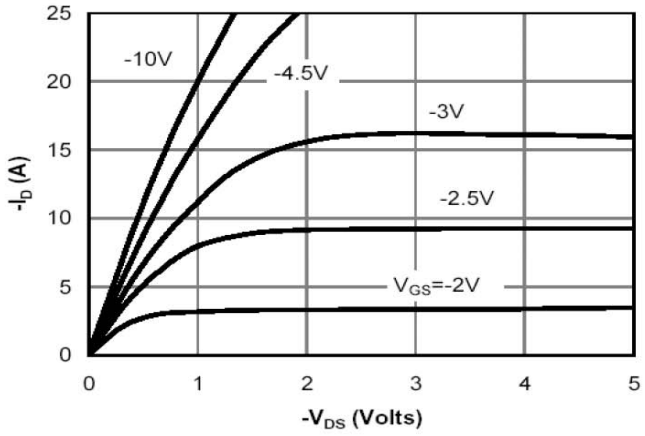


Fig 1. Typical Output Characteristics

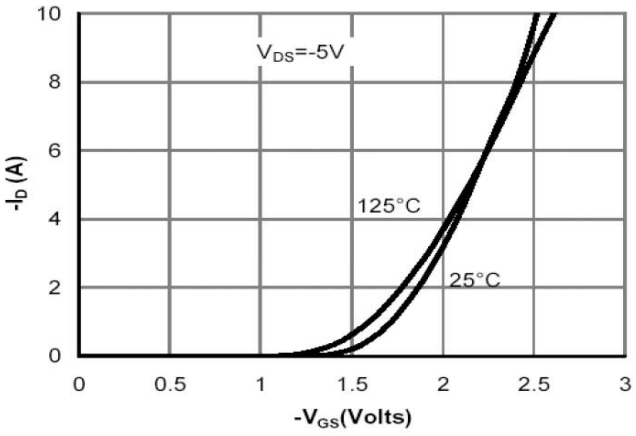


Fig 2. Transfer Characteristics

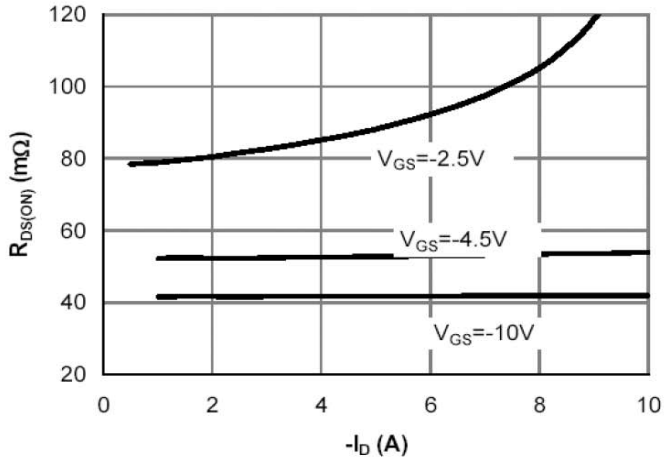


Fig 3. On-Resistance vs. Drain Current and Gate Voltage

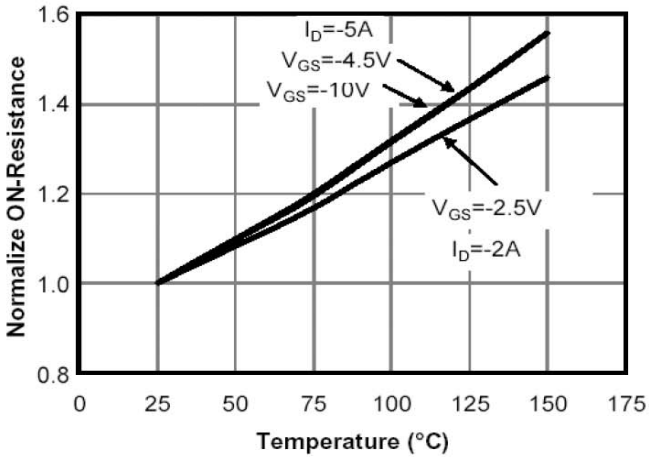


Fig 4. On-Resistance vs. Junction Temperature

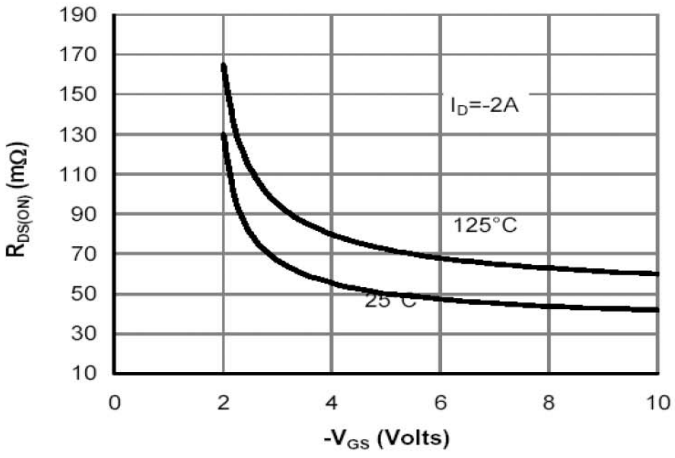


Fig 5. On-Resistance vs. Gate-Source Voltage

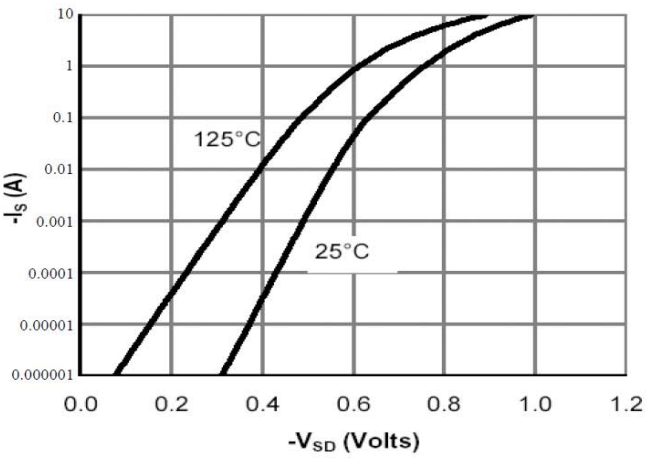


Fig 6. Body Diode Characteristics

CHARACTERISTIC CURVES

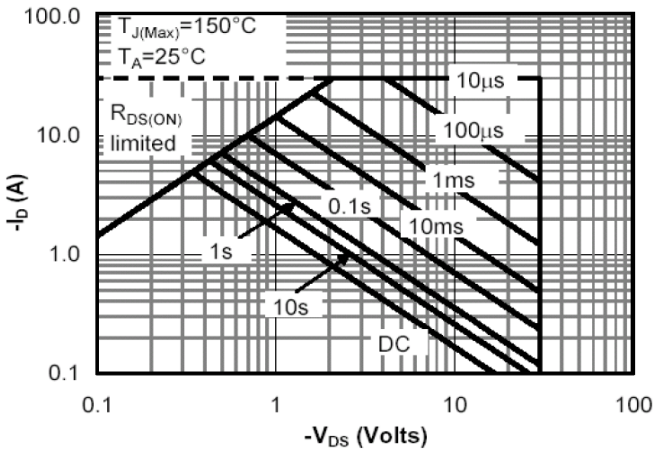


Fig 7. Maximum Safe Operating Area

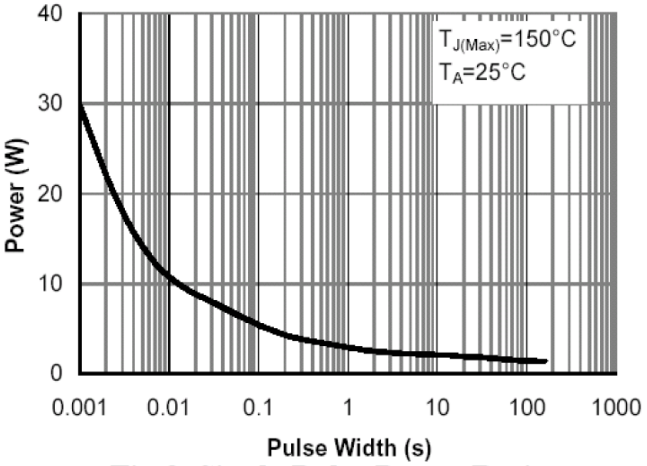


Fig 8. Single Pulse Power Rating Junction-to-Ambient

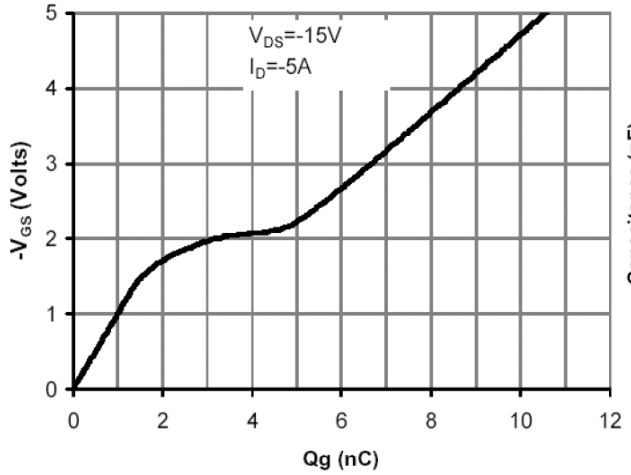


Fig 9. Gate Charge Characteristics

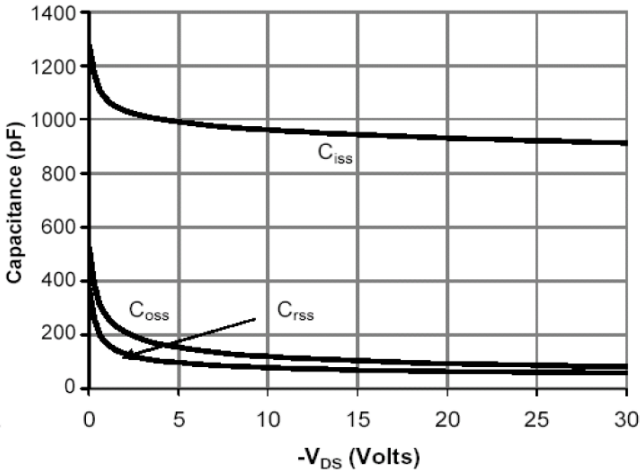


Fig 10. Typical Capacitance Characteristics

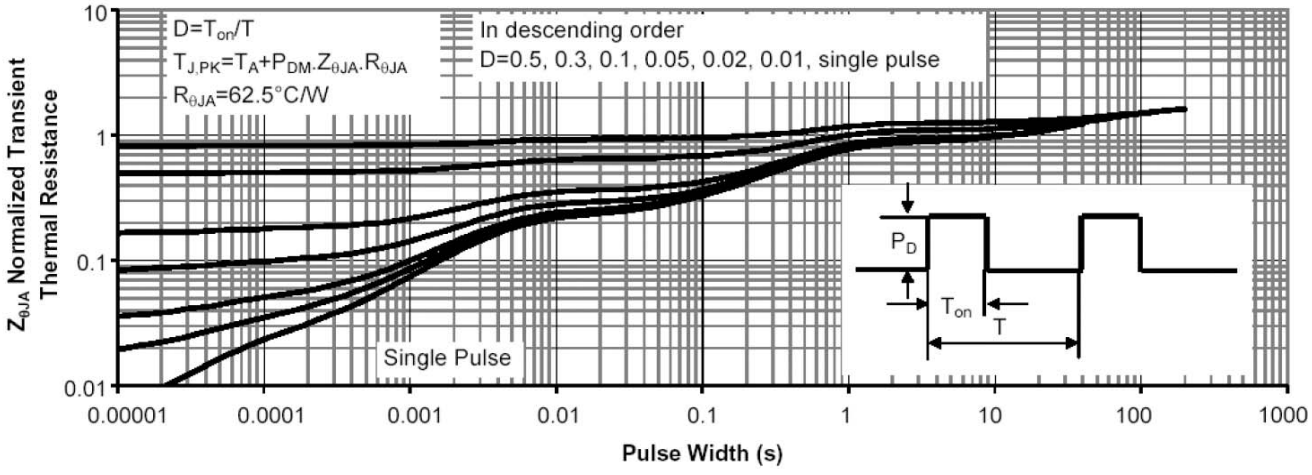


Fig 11. Normalized Maximum Transient Thermal Impedance