

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

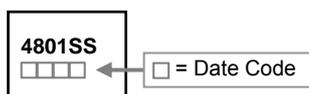
DESCRIPTION

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 form a bidirectional blocking switch.

FEATURES

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

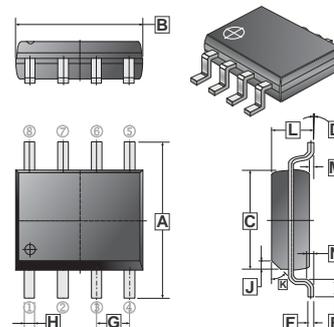
MARKING



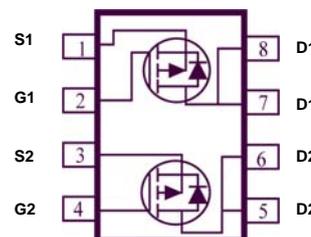
PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOP-8	2.5K	13' inch

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.				



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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	I_D	$T_A = 25^\circ\text{C}$	-5
		$T_A = 70^\circ\text{C}$	-4.2
Pulsed Drain Current ²	I_{DM}	-30	A
Total Power Dissipation ¹	P_D	2	W
Linear Derating Factor		0.016	W / $^\circ\text{C}$
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55 ~ 150	$^\circ\text{C}$
Thermal Resistance Ratings			
Thermal Resistance Junction-ambient ¹ (Max.)	$R_{\theta JA}$	62.5	$^\circ\text{C} / \text{W}$

Notes :

1. Surface Mounted on FR4 Board, $t \leq 10\text{sec.}$
2. Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test condition	
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	$V_{GS}=0V, I_D = -250\mu A$	
Gate Threshold Voltage	$V_{GS(th)}$	-0.5	-	-1.0	V	$V_{DS}=V_{GS}, I_D = -250\mu A$	
Forward Transconductance ²	g_{fs}	-	11	-	S	$V_{DS} = -5V, I_D = -5A$	
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS} = \pm 12V$	
Drain-Source Leakage Current	$T_J=25^\circ\text{C}$	I_{DSS}	-	-	-1	μA	$V_{DS} = -24V, V_{GS}=0V$
	$T_J=55^\circ\text{C}$		-	-	-5	μA	$V_{DS} = -24V, V_{GS}=0V$
Static Drain-Source On-Resistance ²	$R_{DS(ON)}$	-	-	50	m Ω	$V_{GS} = -10V, I_D = -5A$	
		-	-	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 Charge	Q_{gs}	-	2.0	-			
Gate-Drain ("Miller") Charge	Q_{gd}	-	3.1	-			
Turn-on Delay Time ²	$T_{d(ON)}$	-	12	-	nS	$V_{DS} = -15V, V_{GS} = -10V$ $R_L=3\Omega, R_G=6\Omega$	
Rise Time	T_r	-	4	-			
Turn-off Delay Time	$T_{d(OFF)}$	-	37	-			
Fall Time	T_f	-	12	-			
Input Capacitance	C_{ISS}	-	952	-	pF	$V_{DS} = -15V$ $V_{GS}=0V$ $f=1.0\text{MHz}$	
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 :

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2. Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$

CHARACTERISTIC CURVES

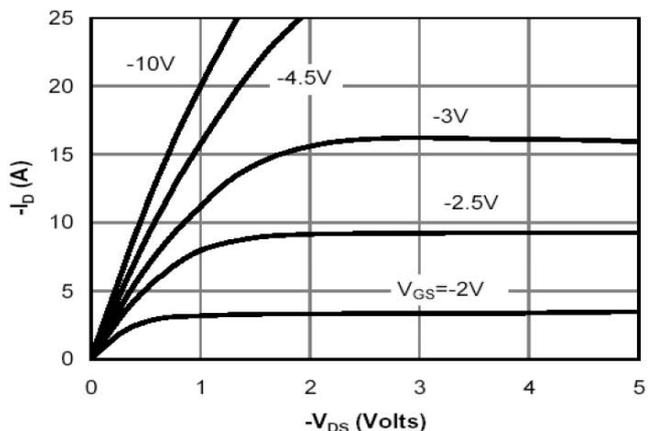


Fig 1. Typical Output Characteristics

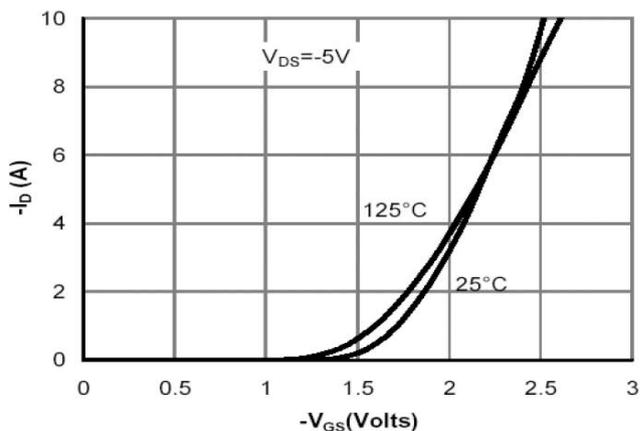


Fig 2. Transfer Characteristics

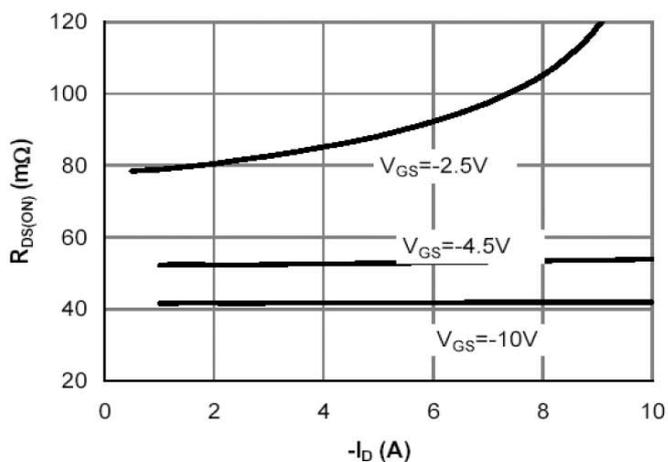


Fig 3. On-Resistance vs. Drain Current and Gate Voltage

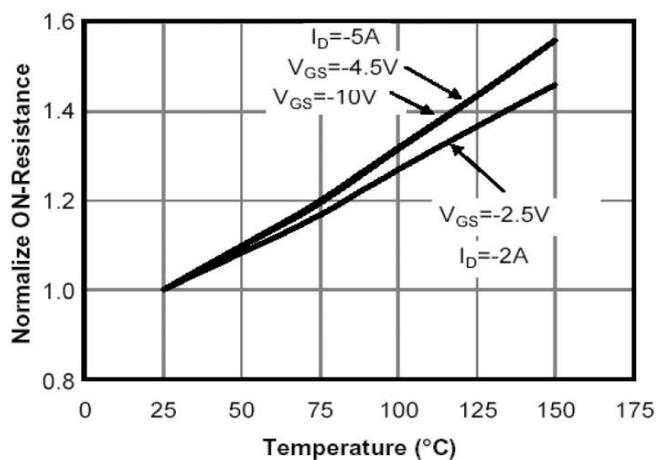


Fig 4. On-Resistance vs. Junction Temperature

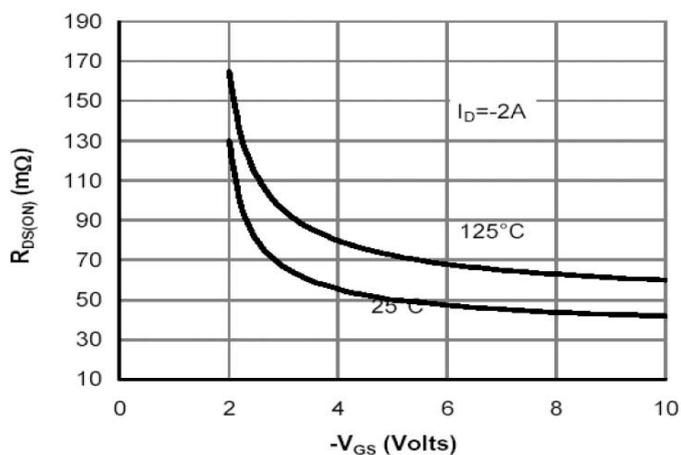


Fig 5. On-Resistance vs. Gate-Source Voltage

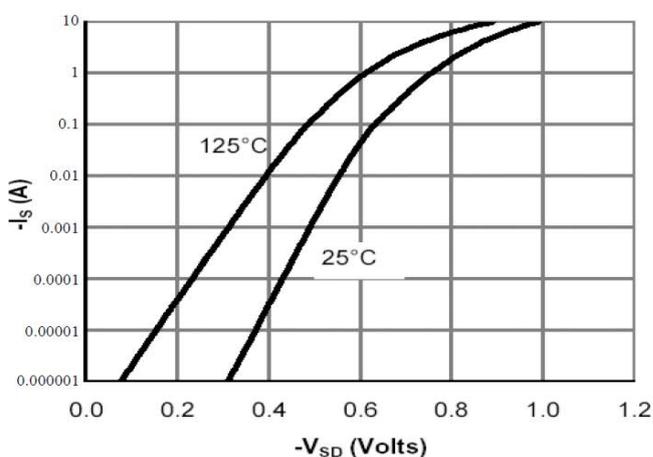


Fig 6. Body Diode Characteristics

CHARACTERISTIC CURVES

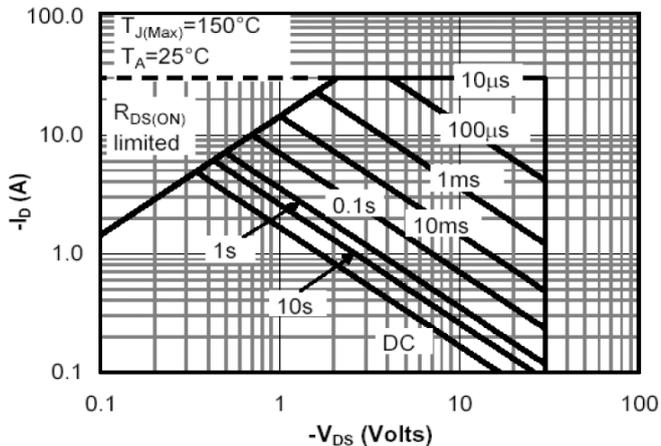


Fig 7. Maximum Safe Operating Area

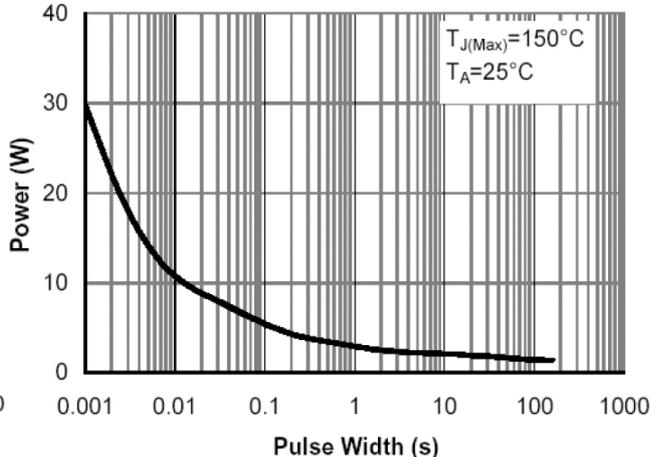


Fig 8. Single Pulse Power Rating Junction-to-Ambient

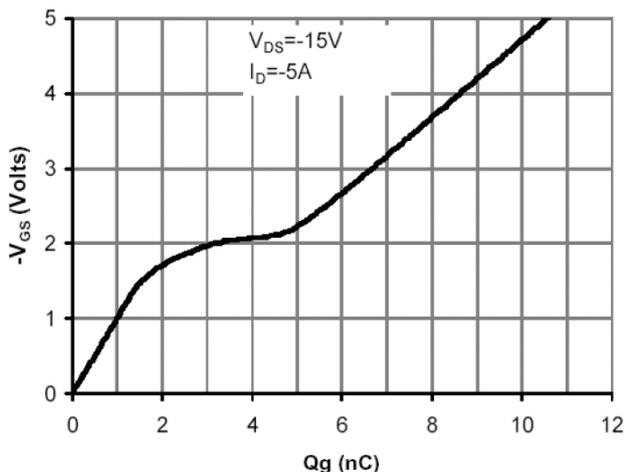


Fig 9. Gate Charge Characteristics

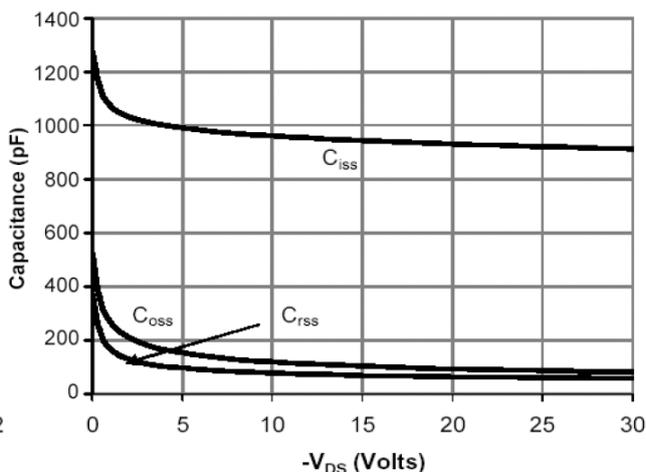


Fig 10. Typical Capacitance Characteristics

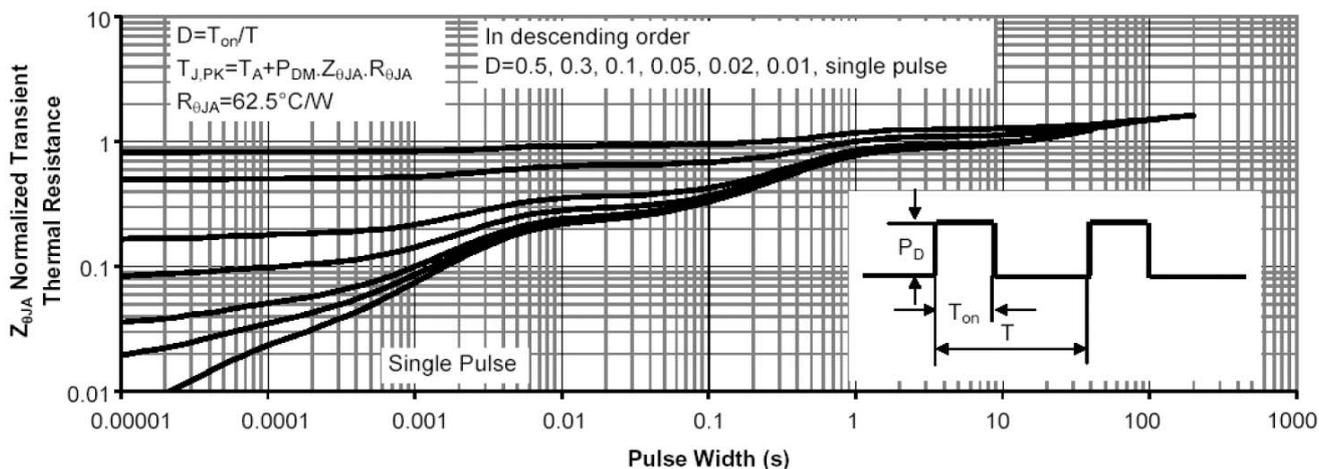


Fig 11. Normalized Maximum Transient Thermal Impedance