

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

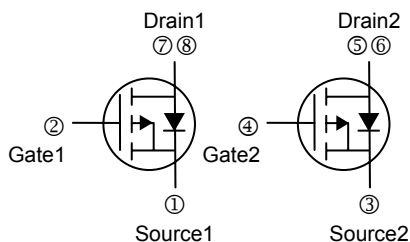
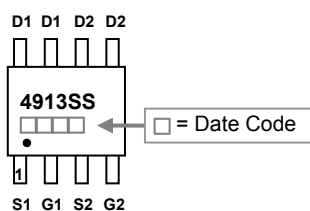
### DESCRIPTIONS & FEATURES

- The SSG4913 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.
- The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.
- Simple Drive Requirement
- Lower On-resistance
- Fast Switching Performance

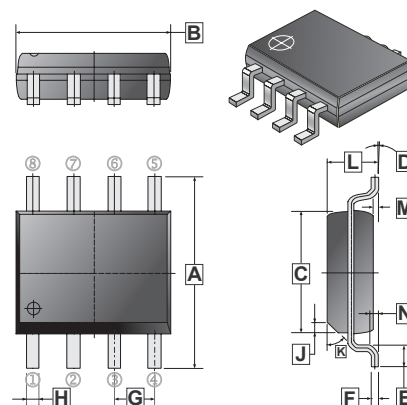
### PACKAGE INFORMATION

Weight: 0.07936g

### MARKING CODE



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.				

### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current <sup>3</sup>	$I_D @ T_A=25^\circ C$	-3.5	A
Continuous Drain Current <sup>3</sup>	$I_D @ T_A=70^\circ C$	-2.8	A
Pulsed Drain Current <sup>1,2</sup>	$I_{DM}$	-18	A
Total Power Dissipation	$P_D @ T_A=25^\circ C$	2	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 ~ +150	$^\circ C$
Linear Derating Factor		0.02	W/ $^\circ C$

### THERMAL DATA

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient <sup>3</sup> Max	$R_{\theta J-AMB}$	62.5	$^\circ C/W$

**ELECTRICAL CHARACTERISTICS (T<sub>j</sub> = 25°C unless otherwise specified)**

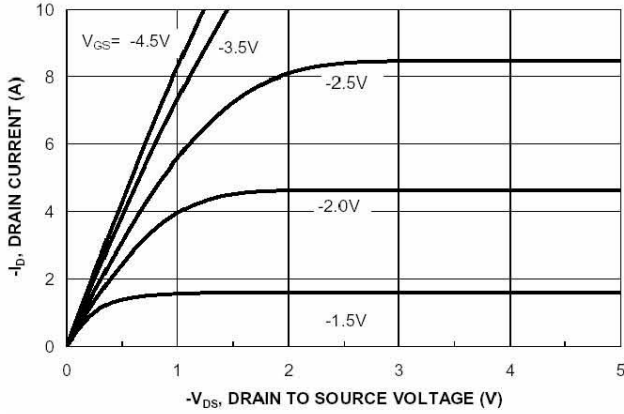
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-20	-	-	V	V <sub>GS</sub> = 0, I <sub>D</sub> = -250 μA
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	-	-0.028	-	V / °C	Reference to 25°C, I <sub>D</sub> = -250 μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	-0.4	-	-1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA
Forward Transconductance	g <sub>fs</sub>	-	6.5	-	S	V <sub>DS</sub> = -5 V, I <sub>D</sub> = -3.5 A
Gate-Source Leakage Current	I <sub>GSS</sub>	-	-	±100	nA	V <sub>GS</sub> = ±8 V
Drain-Source Leakage Current(T <sub>j</sub> =25°C)	I <sub>DSS</sub>	-	-	-1	μA	V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0
Drain-Source Leakage Current(T <sub>j</sub> =70°C)		-	-	-25	μA	V <sub>DS</sub> = -12 V, V <sub>GS</sub> = 0
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	-	-	130	mΩ	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -3.5 A
		-	-	180		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -3.0 A
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	-	6	8.5	nC	I <sub>D</sub> = -3.5 A V <sub>DS</sub> = -5 V V <sub>GS</sub> = -4.5 V
Gate-Source Charge	Q <sub>gs</sub>	-	0.8	-		
Gate-Drain ("Miller") Charge	Q <sub>gd</sub>	-	1.3	-		
Turn-on Delay Time <sup>2</sup>	T <sub>d(on)</sub>	-	6.5	-	ns	V <sub>DD</sub> = -5 V I <sub>D</sub> = -1 A V <sub>GS</sub> = -4.5 V R <sub>G</sub> = 6 Ω
Rise Time	T <sub>r</sub>	-	20	-		
Turn-off Delay Time	T <sub>d(off)</sub>	-	31	-		
Fall Time	T <sub>f</sub>	-	21	-		
Input Capacitance	C <sub>iss</sub>	-	405	-	pF	V <sub>GS</sub> = 0 V V <sub>DS</sub> = -10 V f = 1.0 MHz
Output Capacitance	C <sub>oss</sub>	-	170	-		
Reverse Transfer Capacitance	C <sub>rss</sub>	-	45	-		

**SOURCE-DRAIN DIODE**

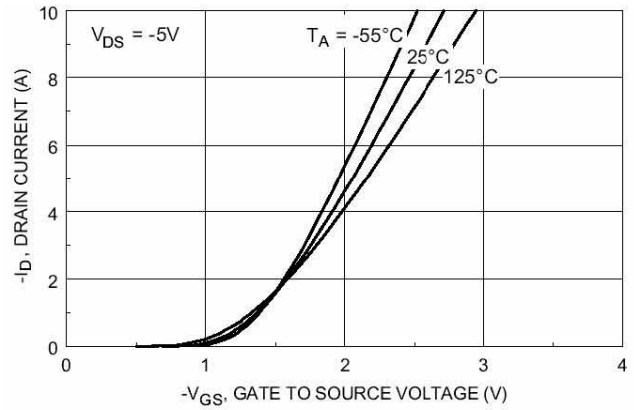
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage <sup>2</sup>	V <sub>SD</sub>	-	-	-1.2	V	I <sub>S</sub> = -2.1 A, V <sub>GS</sub> = 0V
Continuous Source Current (Body Diode)	I <sub>S</sub>	-	-	-2.1	A	V <sub>D</sub> = V <sub>G</sub> = 0 V, V <sub>S</sub> = -1.2 V

Notes: 1. Pulse width limited by Max. junction temperature.  
2. Pulse width ≤ 300us, duty cycle ≤ 2%.

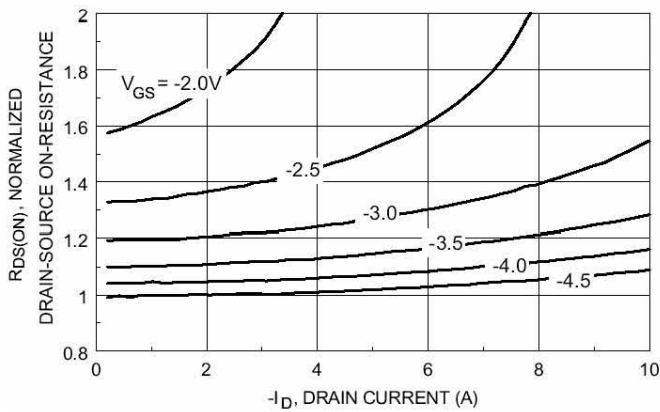
**CHARACTERISTIC CURVE**



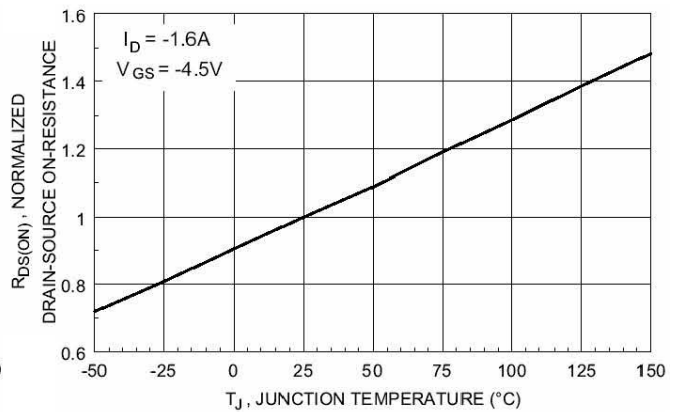
**Fig 1. Typical Output Characteristics**



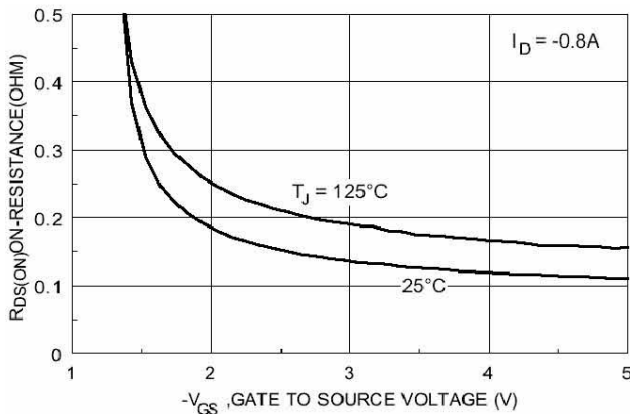
**Fig 2. Transfer Characteristics**



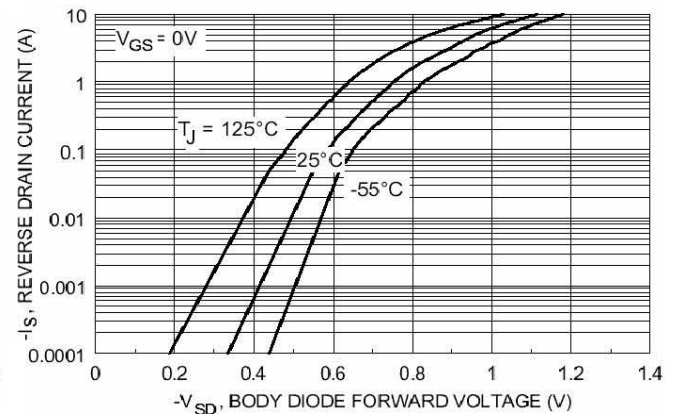
**Fig 3. On-Resistance v.s. Drain Current and Gate Voltage**



**Fig 4. On-Resistance v.s. Junction Temperature**

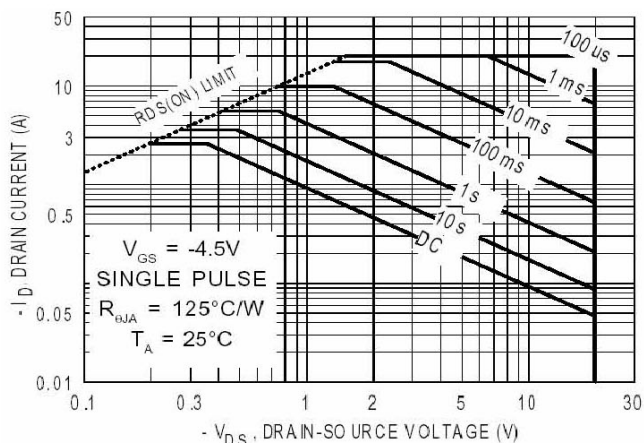


**Fig 5. On-Resistance v.s. Gate-Source Voltage**

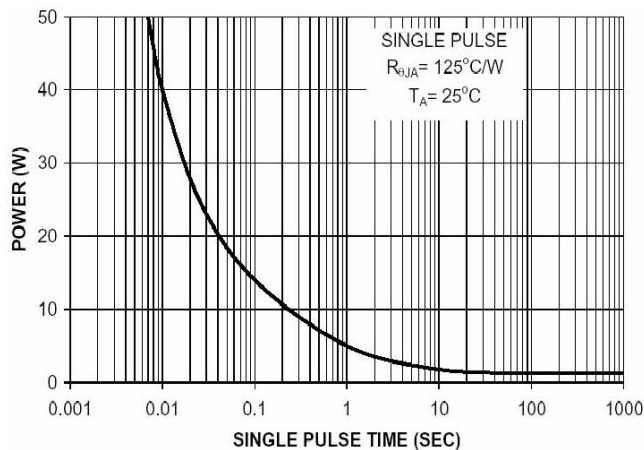


**Fig 6. Body Diode Characteristics**

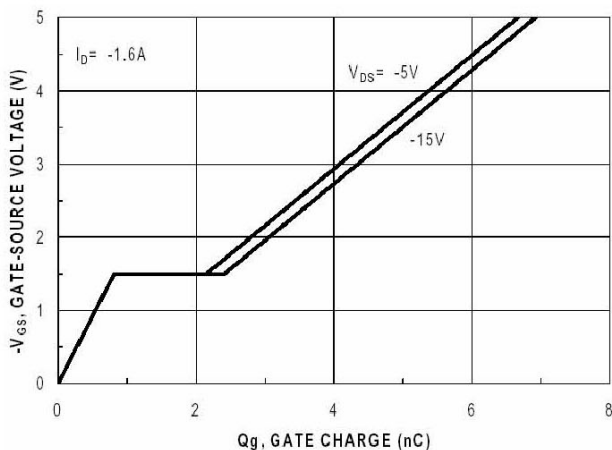
**CHARACTERISTIC CURVES (cont'd)**



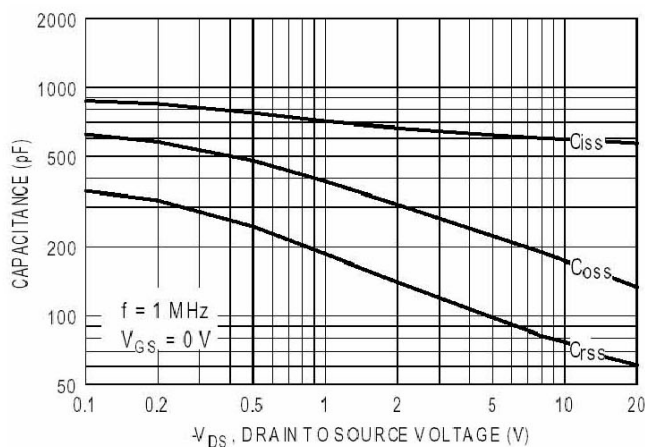
**Fig 7. Maximum Safe Operating Area**



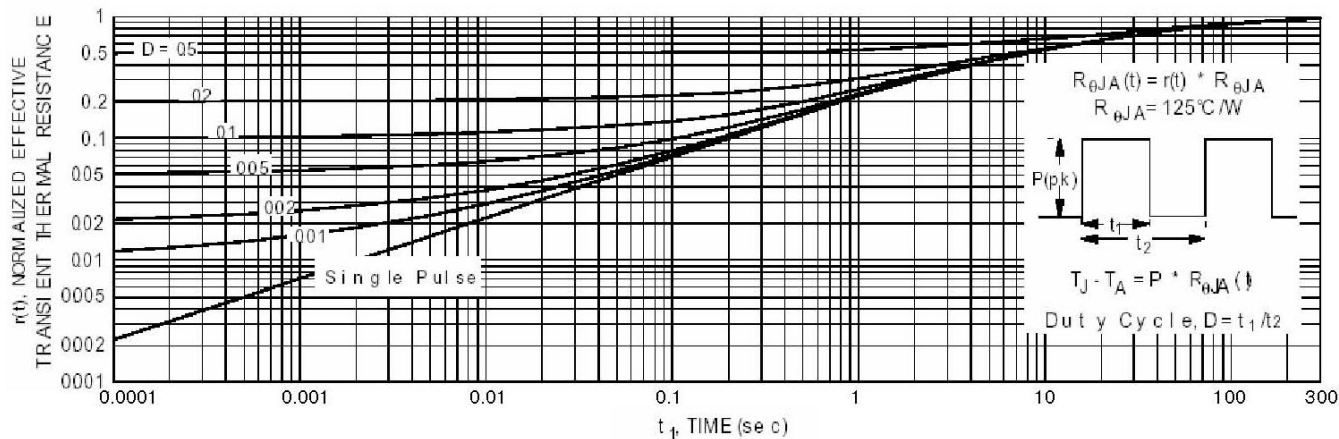
**Fig 8. Single Pulse Maximum Power Dissipation**



**Fig 9. Gate Charge Characteristics**



**Fig 10. Typical Capacitance Characteristics**



**Fig 11. Transient Thermal Response Curve**