

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

DESCRIPTION

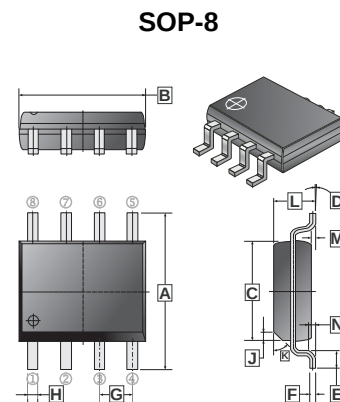
These miniature surface mount MOSFETs utilize a high cell density process to provide Low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe SOP-8 saves board space.
- Fast switching speed.
- High performance trench technology.

PRODUCT SUMMARY

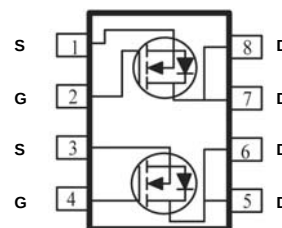
SSG4902N		
$V_{DS}(V)$	$R_{DS(on)} (m\Omega)$	$I_D(A)$
60	35@ $V_{GS}=10V$	± 6.4
	45@ $V_{GS}=4.5V$	± 5.6



REF.	Min.	Max.	REF.	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.			

PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOP-8	2.5K	13' inch



MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	V _{DS}	60	V	
Gate-Source Voltage	V _{GS}	±20	V	
Continuous Drain Current ¹	I _D @ T _A = 25°C	±6.4	A	
	I _D @ T _A = 70°C	±5.2	A	
Pulsed Drain Current ²	I _{DM}	±40	A	
Continuous Source Current (Diode Conduction) ¹	I _S	2	A	
Total Power Dissipation ¹	P _D @ T _A = 25°C	2.1	W	
	P _D @ T _A = 70°C	1.3	W	
Operating Junction & Storage Temperature Range	T _J , T _{STG}	-55 ~ 150	°C	
THERMAL RESISTANCE RATINGS				
Thermal Resistance Junction-Ambient (Max.) ¹	t ≤ 10 sec	R _{θJA}	62.5	°C / W
	Steady State		110	°C / W

Notes

- 1 Surface Mounted on 1" x 1" FR4 Board.
- 2 Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
STATIC						
Gate Threshold Voltage	V _{GS(th)}	1	-	-	V	V _{DS} = V _{GS} , I _D = 250μA
Gate-Body Leakage Current	I _{GSS}	-	-	±100	nA	V _{DS} = 0V, V _{GS} = ±20V
Zero Gate Voltage Drain Current	I _{DSS}	-	-	1	μA	V _{DS} = 60V, V _{GS} = 0V
		-	-	10	μA	V _{DS} = 60V, V _{GS} = 0V, T _J = 55°C
On-State Drain Current ¹	I _{D(on)}	20	-	-	A	V _{DS} = 5V, V _{GS} = 10V
Drain-Source On-Resistance ¹	R _{DS(ON)}	-	-	35	mΩ	V _{GS} = 10V, I _D = 6.4A
		-	-	45		V _{GS} = 4.5V, I _D = 5.6A
Forward Transconductance ¹	g _{fs}	-	11	-	S	V _{DS} = 15V, I _D = 6.4A
Diode Forward Voltage	V _{SD}	-	-	1.2	V	I _S = 2.0A, V _{GS} = 0V
DYNAMIC ²						
Total Gate Charge	Q _g	-	12.5	-	nC	I _D = 6.4A
Gate-Source Charge	Q _{gs}	-	2.4	-		V _{DS} = 30V
Gate-Drain Charge	Q _{gd}	-	2.6	-		V _{GS} = 4.5V
SWITCHING						
Turn-On Delay Time	T _{d(on)}	-	11	-	nS	V _{DD} = 30V
Rise Time	T _r	-	8	-		I _D = 1A
Turn-Off Delay Time	T _{d(off)}	-	19	-		V _{GEN} = 10V
Fall Time	T _f	-	6	-		R _L = 30Ω

Notes

- Pulse test : $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.