

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

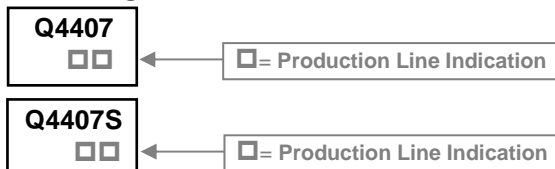
## DESCRIPTION

The SSG4407J-C combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ . This device is ideal for load switch and battery protection applications

## FEATURES

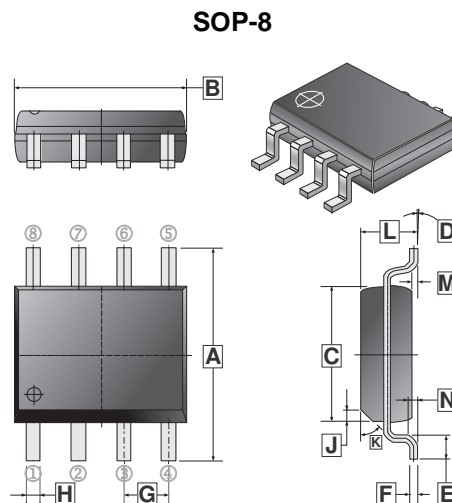
- Simple Drive Requirement
- Lower On-Resistance
- Low Gate Charge

## MARKING



## PACKAGE INFORMATION

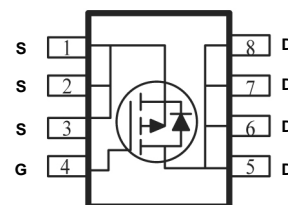
Package	MPQ	Leader Size
SOP-8	4K	13 inch



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.79	6.20	H	0.33	0.51
B	4.70	5.11	J	0.375 REF.	
C	3.80	4.00	K	45° REF.	
D	0°	8°	L	1.3	1.752
E	0.40	1.27	M	0	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				

## ORDER INFORMATION

Part Number	Type
SSG4407J-C	Lead (Pb)-free and Halogen-free



## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V <sub>DS</sub>	-30	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current <sup>1</sup>	I <sub>D</sub>	-11	A
Pulsed Drain Current <sup>2</sup>	I <sub>DM</sub>	-42	A
Single Pulse Avalanche Energy <sup>3</sup>	E <sub>AS</sub>	107	mJ
Total Power Dissipation <sup>1</sup>	P <sub>D</sub>	3	W
Thermal Resistance Junction-Ambient <sup>5</sup>	R <sub>θJA</sub>	41.7	°C/W
Operating Junction & Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Drain-Source Breakdown Voltage	$BV_{DSS}$	-30	-	-	V	$V_{GS}=0, I_D = -250\mu\text{A}$
Drain-Source Leakage Current	$I_{DSS}$	$T_J=25^\circ\text{C}$	-	-1	$\mu\text{A}$	$V_{DS} = -24\text{V}, V_{GS}=0$
		$T_J=125^\circ\text{C}$	-	-200		
Gate-Body Leakage Current	$I_{GSS}$	-	-	$\pm 100$	nA	$V_{DS}=0, V_{GS} = \pm 20\text{V}$
Gate-Threshold Voltage <sup>4</sup>	$V_{GS(th)}$	-1	-	-2.2	V	$V_{DS}=V_{GS}, I_D = -250\mu\text{A}$
Drain-Source On-Resistance <sup>4</sup>	$R_{DS(ON)}$	-	9	15	m $\Omega$	$V_{GS} = -10\text{V}, I_D = -10\text{A}$
		-	10.6	20		$V_{GS} = -6\text{V}, I_D = -8\text{A}$
Forward Transfer Conductance <sup>4</sup>	$g_{fs}$	-	25	-	S	$V_{DS} = -5\text{V}, I_D = -10\text{A}$
Total Gate Charge	$Q_g$	-	48	-	nC	$I_D = -10\text{A}$ $V_{DS} = -15\text{V}$ $V_{GS} = -10\text{V}$
Gate-Source Charge	$Q_{gs}$	-	12	-		
Gate-Drain ("Miller") Charge	$Q_{gd}$	-	14	-		
Turn-on Delay Time	$T_{d(on)}$	-	16	-	nS	$V_{DS} = -15\text{V}$ $V_{GS} = -10\text{V}$ $R_G = 3\Omega$ $R_L = 1.25\Omega$
Rise Time	$T_r$	-	12	-		
Turn-off Delay Time	$T_{d(off)}$	-	45	-		
Fall Time	$T_f$	-	21	-		
Input Capacitance	$C_{iss}$	-	2885	-	pF	$V_{GS}=0$ $V_{DS} = -15\text{V}$ $f=1\text{MHz}$
Output Capacitance	$C_{oss}$	-	341	-		
Reverse Transfer Capacitance	$C_{rss}$	-	305	-		
<b>Source-Drain Diode Characteristics</b>						
Forward on Voltage <sup>4</sup>	$V_{SD}$	-	-	-1.2	V	$I_S = -2\text{A}, V_{GS}=0$
Continuous Source Current <sup>1</sup>	$I_S$	-	-	-11	A	
Pulsed Source Current <sup>2</sup>	$I_{SM}$	-	-	-42		

Notes:

- $T_C=25^\circ\text{C}$  Limited only by maximum temperature allowed.
- Pulse Test: Pulse Width  $\leq 10\mu\text{s}$ , duty cycle  $\leq 1\%$ .
- $E_{AS}$  condition:  $V_{DD} = -20\text{V}, V_{GS} = -10\text{V}, L=0.5\text{mH}, R_g=25\Omega$ , Starting  $T_J=25^\circ\text{C}$ .
- Pulse Test: Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .
- The value of  $R_{\theta JA}$  is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with  $T_A=25^\circ\text{C}$ .

**CHARACTERISTICS CURVE**

