



型号: SLS4407

**-30VDS/±12VGS/-50A(ID)** P-Channel Enhancement Mode MOSFET

### 主要特性/Features

#### P-MOSFET

$V_{DS} = -30V$

$R_{DS(ON)} = 12m\Omega(max.) @ V_{GS} = -10V, I_D = -12A$

$R_{DS(ON)} = 17m\Omega(max.) @ V_{GS} = -4.5V, I_D = -7A$

Very Low On-resistance  $R_{DS(ON)}$

Low  $C_{rss}$

Fast switching

Improved  $dv/dt$  capability

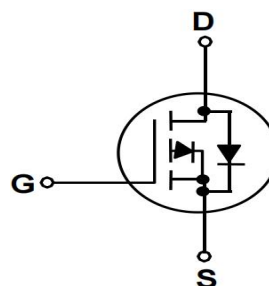
### 应用/Application

Power Management

Portable devices

Load switch

### 印字/MARKING 等效电路/Equivalent Circuit





极限参数/ **P-MOSFET** Absolute Maximum Ratings(TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
VDSS	Drain-Source Voltage	-30	V
ID	Drain Current - Continuous (TC = 25°C) - Continuous (TC = 100°C)	-50	A
		-33	A
IDM	Drain Current - Pulsed (Note 1)	-200	A
VGSS	Gate-Source Voltage	±20	V
EAS	Single Pulsed Avalanche Energy	225	mJ
PD	Power Dissipation (TC = 25°C)	3.5	W
RθJC	Thermal Resistance, Junction to Case	35.7	W/°C
TJ, TSTG	Operating and Storage Temperature Range	-55 to +150	°C
TL	Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	300	°C

\* Drain current limited by maximum junction temperature.



电性能参数/ P-MOSFET Electrical Characteristics (TA=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>Off Characteristics</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0 V, I <sub>D</sub> = -250 μA	-30	--	--	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = -30 V, V <sub>GS</sub> = 0 V	--	--	-1	μA
I <sub>GSSF</sub>	Gate-Body Leakage Current, Forward	V <sub>GS</sub> = 20V, V <sub>DS</sub> = 0 V	--	--	100	nA
I <sub>GSSR</sub>	Gate-Body Leakage Current, Reverse	V <sub>GS</sub> = -20V, V <sub>DS</sub> = 0 V	--	--	-100	nA
<b>On Characteristics</b>						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-1	-1.5	-2	V
R <sub>DS(on)</sub>	Static Drain-Source	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -12A	--	9.3	12	mΩ
	On-Resistance	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -7A	-	12.8	17	
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = -15 V, V <sub>GS</sub> = 0 V,	--	1770	-	pF
C <sub>oss</sub>	Output Capacitance	f = 1.0 MHz	--	231	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	216	-	pF
<b>Switching Characteristics</b>						
t <sub>d(on)</sub>	Turn-On Delay Time		--	13	--	ns
t <sub>r</sub>	Turn-On Rise Time	V <sub>GS</sub> = -10 V, V <sub>DS</sub> = -15V,	--	8.5	--	ns
t <sub>d(off)</sub>	Turn-Off Delay Time	R <sub>G</sub> = 3 Ω, I <sub>D</sub> = -25A	--	26	--	ns
t <sub>f</sub>	Turn-Off Fall Time		--	12	--	ns
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -25A,	--	32	--	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>GS</sub> = -10V	--	6	--	nC
Q <sub>gd</sub>	Gate-Drain Charge		--	10	--	nC
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
I <sub>S</sub>	Maximum Continuous Drain-Source Diode Forward Current		--	--	-50	A
I <sub>SM</sub>	Maximum Pulsed Drain-Source Diode Forward Current		--	--	-200	A
V <sub>SD</sub>	Drain to Source Diode Forward Voltage, V <sub>GS</sub> = 0V, I <sub>SD</sub> = -10A, T <sub>J</sub> = 25°C		--	--	-1.2	V
t <sub>rr</sub>	Reverse Recovery Time T <sub>J</sub> = 25°C, I <sub>F</sub> = -25A, di/dt = 100A/μs		--	32	-	nS
Q <sub>rr</sub>	Reverse Recovery Charge T <sub>J</sub> = 25°C, I <sub>F</sub> = -25A, di/dt = 100A/μs		--	21	-	nC

**Notes:**

- 1.Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
- 2.EAS condition: T<sub>J</sub> = 25°C, V<sub>DD</sub> = -20V, V<sub>G</sub> = -10V, L = 0.5mH.
- 3.Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 0.5%



典型特性曲线图/Typical Characteristics

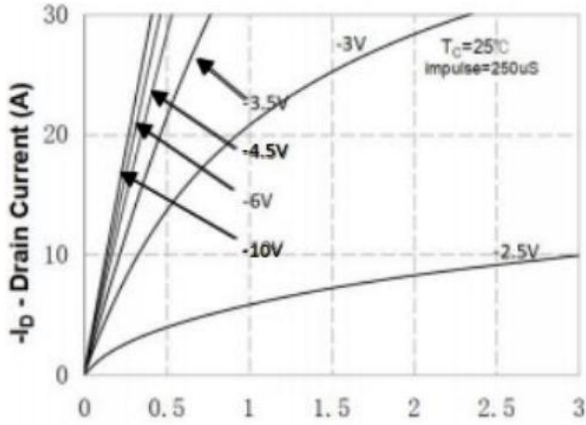


Figure 1. On-Region Characteristics

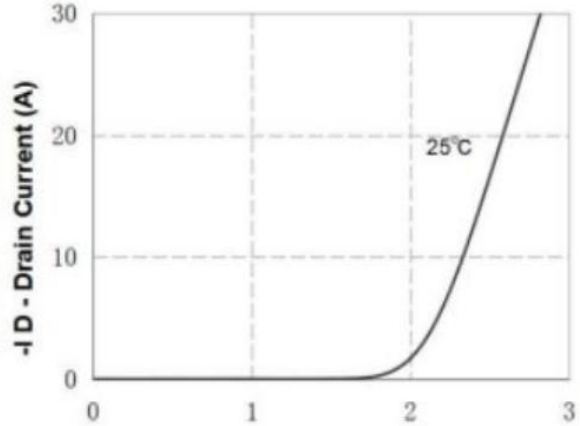


Figure 2. Transfer Characteristics

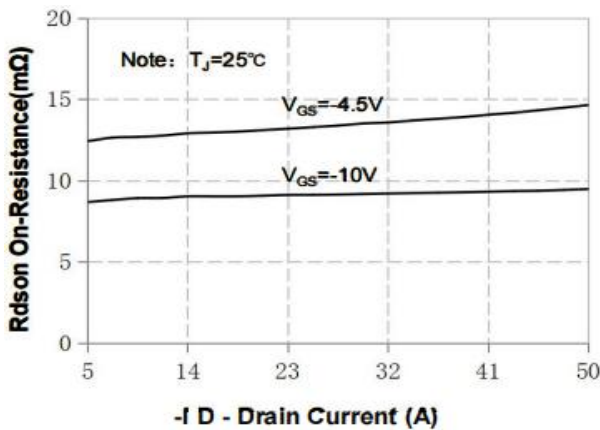


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

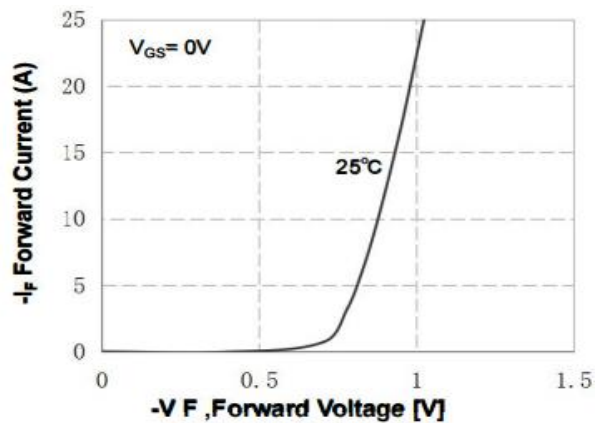


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

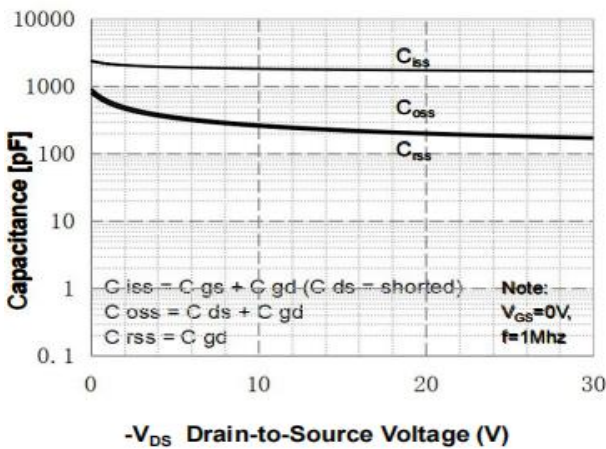


Figure 5. Capacitance Characteristics

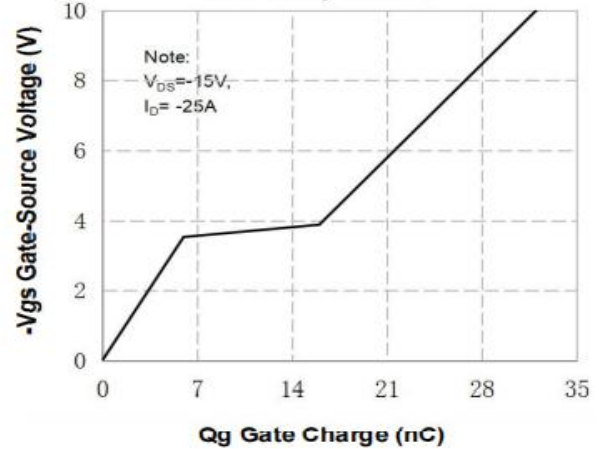


Figure 6. Gate Charge Characteristics

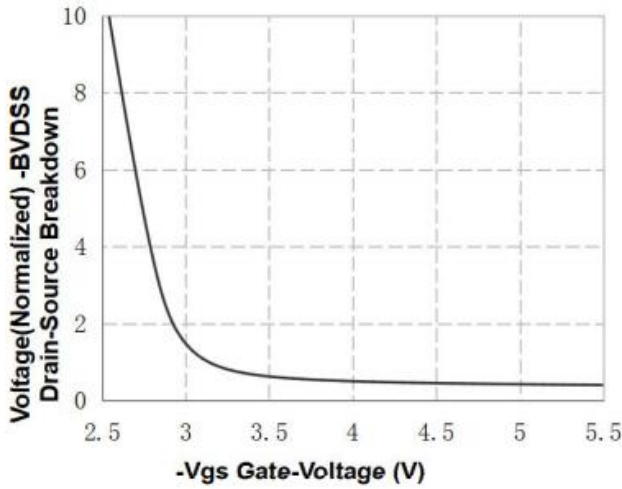


Figure 7. Breakdown Voltage Variation vs Gate-Voltage

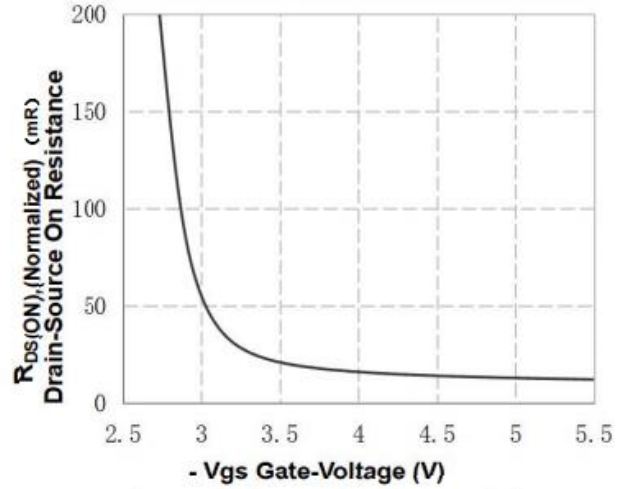


Figure 8. On-Resistance Variation vs Gate Voltage

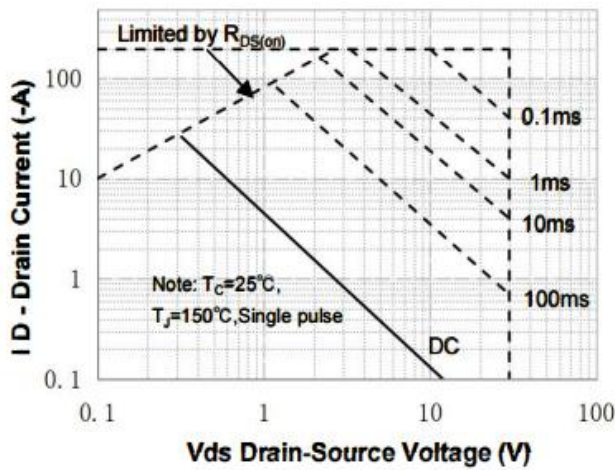


Figure 9. Maximum Safe Operating Area

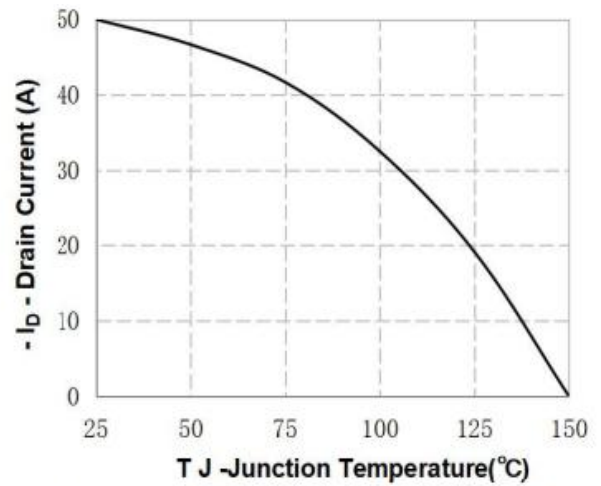
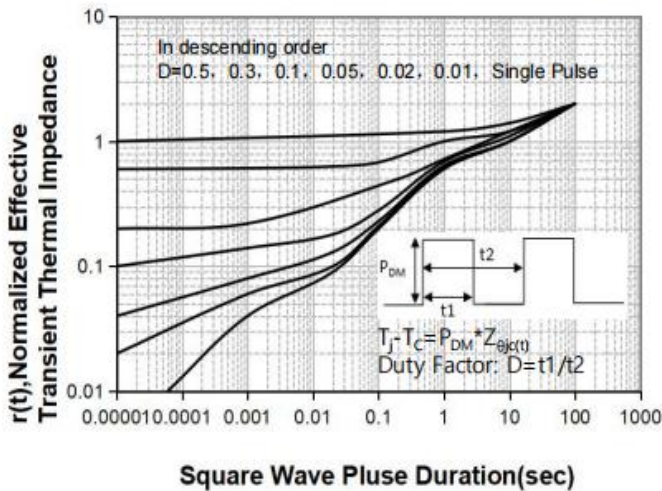
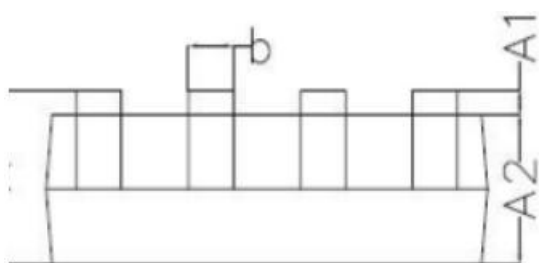
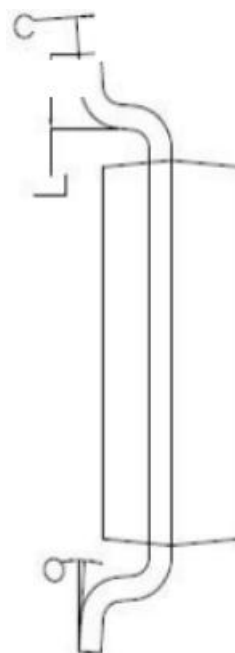
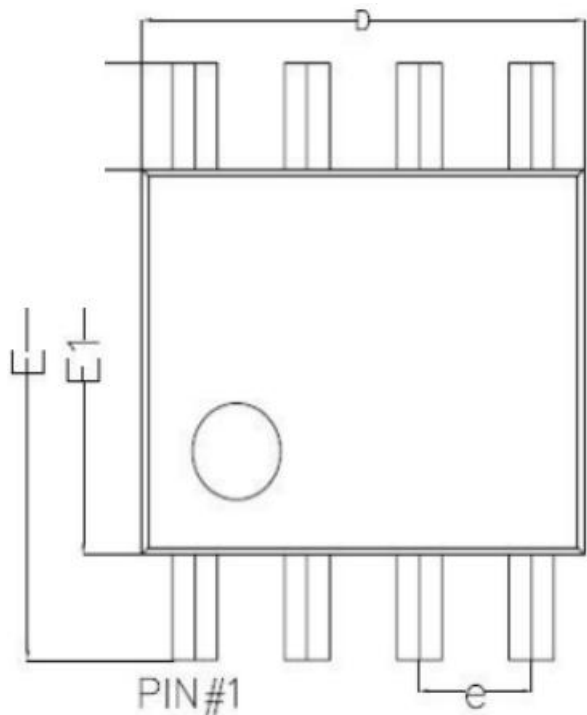


Figure 10. Maximum PContinuous Drain Current vs Case Temperature





成品外观尺寸/SOP8 Package Information



Symbol	Dim in mm		
	Min	Nor	Max
A	1.35	1.55	1.75
A1	0.02	0.065	0.10
A2	1.35	1.45	1.55
b	0.33	0.42	0.51
c	0.17	0.21	0.25
D	4.80	4.90	5.00
e	1.270 (BSC)		
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
L	0.4	0.835	1.27
$\theta$	0°	4°	8°