SOP8 Plastic-EncapsulateMOSFET

型号：SLS4614A

N-MOSFETandP-MOSFET

主要特性/Features

N-MOSFET

V_{DS}=40V

$R_{DS(ON)}$=32mΩ(max.)@V_{GS}=10V,I_D=6A

$R_{DS(ON)}$=55mΩ(max.)@V_{GS}=4.5V,I_D=4A

P-MOSFET

V_{DS}=-20V

$R_{DS(ON)}$=45mΩ(max.)@V_{GS}=-10V,I_D=-6A

$R_{DS(ON)}$=70mΩ(max.)@V_{GS}=-4.5V,I_D=-4A

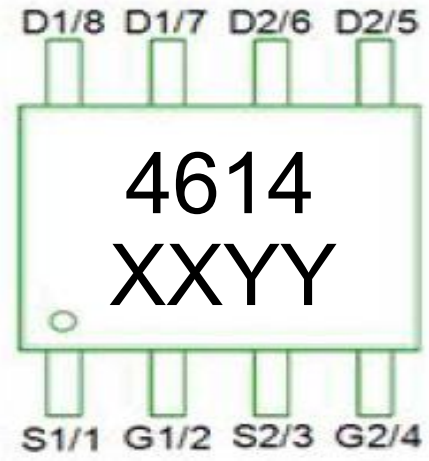
应用/Application

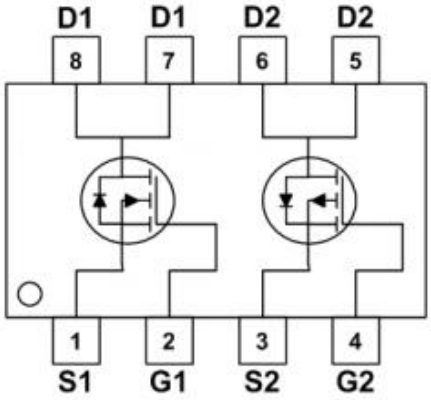
HighSideLoadSwitch

BatterySwitch

OptimizedforPowerManagementApplicationsforPortableProducts,suchaswirelesscharger,MediaTablets,PMP,DSC,GPS,andOthers

印字/MARKING等效电路/EquivalentCircuit





极限参数/N-MOSFETAbsoluteMaximumRatings(TA=25℃unlessotherwised

参数/Parameter	符号/Symbol	数值/Value	单位/Unit
漏极-源极电压/Drain-SourceVoltage	V_{DS}	40	V
栅极-源极电压/Gate-SourceVoltage	V_{GS}	±20	V
漏极电流（持续）/ContinuousDrainCurrent	I_D	7.2	A
漏极电流（脉冲）/PulsedDrainCurrent	I_{DM}	14.5	A
耗散功率/PowerDissipation	P_D	2.5	W
热阻/ThermalResistanceJunctiontoAmbient	$R_{\theta JA}$	--	℃/mW
结温/JunctionTemperature	Tj	-55～150	℃
储存温度/StorageTemperature	Tstg	-55～150	℃

极限参数/P-MOSFETAbsoluteMaximumRatings(TA=25℃unlessotherwisenoted)

参数/Parameter	符号/Symbol	数值/Value	单位/Unit
漏极-源极电压/Drain-SourceVoltage	V_{DS}	-40	V
栅极-源极电压/Gate-SourceVoltage	V_{GS}	±20	V
漏极电流（持续）/ContinuousDrainCurrent	I_D	-6.5	A
漏极电流（脉冲）/PulsedDrainCurrent	I_{DM}	-13	A
耗散功率/PowerDissipation	P_D	3.1	W
热阻/ThermalResistanceJunctiontoAmbient	$R_{\theta JA}$	85	℃/mW
结温/JunctionTemperature	Tj	-55～150	℃
储存温度/StorageTemperature	Tstg	-55～150	℃

电性能参数/N-MOSFET ElectricalCharacteristics(TA=25℃unlessotherwisenoted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-SourceBreakdownVoltage	V_{GS}=0V,I_D=250uA	40	---	---	V
$\Delta BV_{DSS}/\Delta T_J$	BVDSSTemperatureCoefficient	Referenceto25℃,I_D=1mA	---	0.034	---	V/℃
$R_{DS(ON)}$	StaticDrain-SourceOn-Resistance[2]	V_{GS}=10V,I_D=6A	---	24	32	mΩ
		V_{GS}=4.5V,I_D=4A	---	35	55	
$V_{GS(th)}$	GateThresholdVoltage	V_{GS}=V_{DS},I_D=250uA	1.0	1.5	2.5	V
$\Delta V_{GS(th)}$	$V_{GS(th)}$TemperatureCoefficient		---	-4.56	---	mV/℃
I_{DSS}	Drain-SourceLeakageCurrent	V_{DS}=32V,V_{GS}=0V,T_J=25℃	---	---	1	uA
		V_{DS}=32V,V_{GS}=0V,T_J=55℃	---	---	5	
I_{GSS}	Gate-SourceLeakageCurrent	V_{GS}=±20V,V_{DS}=0V	---	---	±100	nA
gfs	ForwardTransconductance	V_{DS}=5V,I_D=12A	---	14	---	S
R_g	GateResistance	V_{DS}=0V,V_{GS}=0V,f=1MHz	---	2.6	5.2	Ω
Q_g	TotalGateCharge(4.5V)	V_{DS}=20V,V_{GS}=4.5V,I_D=6A	---	5.5	---	nC
Q_{gs}	Gate-SourceCharge		---	1.25	---	
Q_{gd}	Gate-DrainCharge		---	2.5	---	
$T_{d(on)}$	Turn-OnDelayTime	V_{DD}=20V,V_{GS}=10V, R_G=3.3Ω,I_D=1A	---	8.9	---	ns
T_r	RiseTime		---	2.2	---	
$T_{d(off)}$	Turn-OffDelayTime		---	41	---	
T_f	FallTime		---	2.7	---	
C_{iss}	InputCapacitance	V_{DS}=15V,V_{GS}=0V,f=1MHz	---	593	---	pF
C_{oss}	OutputCapacitance		---	76	---	
C_{rss}	ReverseTransferCapacitance		---	56	---	

DiodeCharacteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	ContinuousSourceCurrent[1,5]	V_G=V_D=0V,ForceCurrent	---	---	7.2	A
I_{SM}	PulsedSourceCurrent[2,5]		---	---	14.5	A
V_{SD}	DiodeForwardVoltage[2]	V_{GS}=0V,I_S=1A,T_J=25℃	---	---	1.2	V

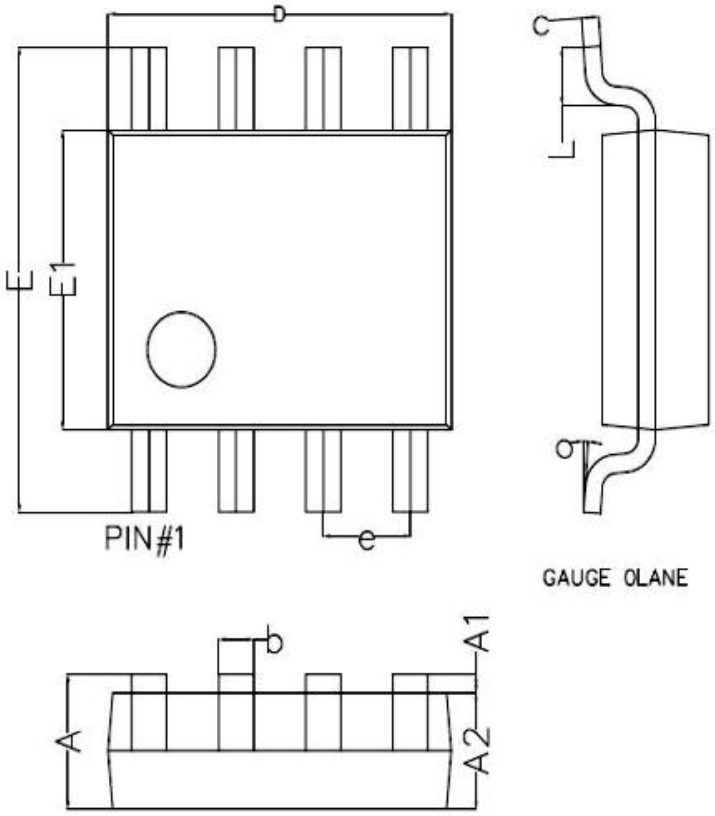
电性能参数/P-MOSFETElectricalCharacteristics(TA=25℃unlessotherwisenoted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-SourceBreakdownVoltage	V_{GS}=0V,I_D=-250uA	-40	---	---	V
$\Delta BV_{DSS}/\Delta T_J$	BV_{DSS}TemperatureCoefficient	Referenceto25℃,I_D=-1mA	---	-0.012	---	V/℃
$R_{DS(ON)}$	StaticDrain-SourceOn-Resistance2	V_{GS}=-10V,I_D=-6A	---	35	45	mΩ
		V_{GS}=-4.5V,I_D=-4A	---	48	70	
$V_{GS(th)}$	GateThresholdVoltage	V_{GS}=V_{DS},I_D=-250uA	-1.0	-1.6	-2.5	V
$\Delta V_{GS(th)}$	$V_{GS(th)}$TemperatureCoefficient		---	4.32	---	mV/℃
I_{DSS}	Drain-SourceLeakageCurrent	V_{DS}=-32V,V_{GS}=0V,T_J=25℃	---	---	1	uA
		V_{DS}=-32V,V_{GS}=0V,T_J=55℃	---	---	5	
I_{GSS}	Gate-SourceLeakageCurrent	V_{GS}=±20V,V_{DS}=0V	---	---	±100	nA
gfs	ForwardTransconductance	V_{DS}=-5V,I_D=-6A	---	12	---	S
R_g	GateResistance	V_{DS}=0V,V_{GS}=0V,f=1MHz	---	13	16	Ω
Q_g	TotalGateCharge(-4.5V)	V_{DS}=-20V,V_{GS}=-4.5V,I_D=-6A	---	9	---	nC
Q_{gs}	Gate-SourceCharge		---	2.54	---	
Q_{gd}	Gate-DrainCharge		---	3.1	---	
$T_{d(on)}$	Turn-OnDelayTime	V_{DD}=-15V,V_{GS}=-10V, R_G=3.3Ω,I_D=-1A	---	19.2	---	ns
T_r	RiseTime		---	12.8	---	
$T_{d(off)}$	Turn-OffDelayTime		---	48.6	---	
T_f	FallTime		---	4.6	---	
C_{iss}	InputCapacitance	V_{DS}=-15V,V_{GS}=0V,f=1MHz	---	1004	---	pF
C_{oss}	OutputCapacitance		---	108	---	
C_{rss}	ReverseTransferCapacitance		---	80	---	

DiodeCharacteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	ContinuousSourceCurrent1,5	V_G=V_D=0V,ForceCurrent	---	---	-6.5	A
I_{SM}	PulsedSourceCurrent2,5		---	---	-13	A
V_{SD}	DiodeForwardVoltage2	V_{GS}=0V,I_S=-1A,T_J=25℃	---	---	-1	V

成品外观尺寸/SOP8PackageInformation



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
θ	0°	4°	8°