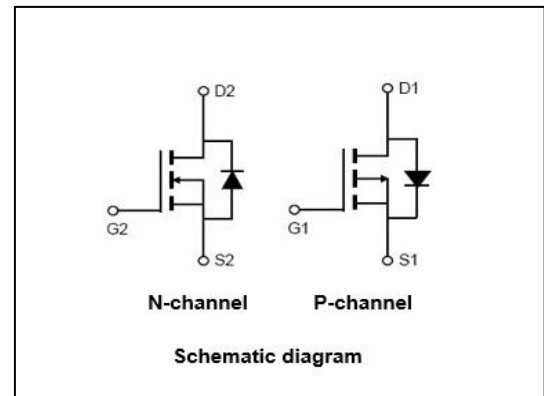
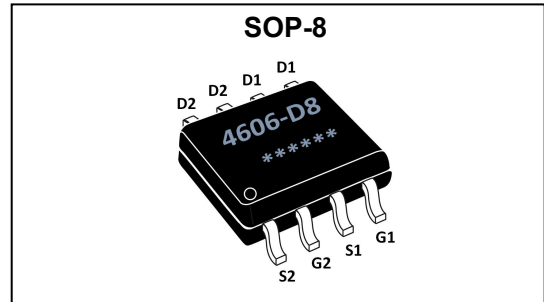


General Description

The GL4606-D8 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications. The package form is SOP-8, which accords with the RoHS standard.

Features

- N-Channel
 - $V_{DS} = 30V, I_D = 8A$
 - $R_{DS(ON)} < 20m\Omega @ V_{GS}=10V$
 - $R_{DS(ON)} < 30m\Omega @ V_{GS}=4.5V$
 - $R_{DS(ON)} < 40m\Omega @ V_{GS}=2.5V$
- P-Channel
 - $V_{DS} = -30V, I_D = -8.0A$
 - $R_{DS(ON)} < 30m\Omega @ V_{GS}=-10V$
 - $R_{DS(ON)} < 50m\Omega @ V_{GS}=-4.5V$
 - $R_{DS(ON)} < 65m\Omega @ V_{GS}=-2.5V$
- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage



Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage		V_{DS}	30	-30	V
Gate-Source Voltage		V_{GS}	± 12	± 12	V
Continuous Drain Current	$T_A=25^\circ C$	I_D	8	-8	A
	$T_A=70^\circ C$		7.2	-7.2	
Pulsed Drain Current (Note 1)		I_{DM}	32	-32	A
Maximum Power Dissipation	$T_A=25^\circ C$	P_D	2.0	2.0	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 To 150	-55 To 150	$^\circ C$

Thermal Characteristic

Thermal Resistance, Junction-to-Ambient (Note2)	$R_{\theta JA}$	N-Ch	62.5	$^\circ C/W$
Thermal Resistance, Junction-to-Ambient (Note2)	$R_{\theta JA}$	P-Ch	62.5	$^\circ C/W$



GL4606-D8

GL Silicon N+P Channel Power MOSFET

N-CH Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	30	33	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V,V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V,V _{DS} =0V	-	-	±1	μA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	0.6	1.0	2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =6A	-	14	20	mΩ
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =5A	-	21	30	mΩ
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =2.5V, I _D =4A	-	30	40	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V,I _D =8A	15	-	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{ISS}	V _{DS} =15V,V _{GS} =0V, F=1.0MHz	-	320	-	PF
Output Capacitance	C _{OSS}		-	54	-	PF
Reverse Transfer Capacitance	C _{rss}		-	41	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V, R _L =2.5Ω V _{GS} =10V,R _{GEN} =3Ω	-	5.5	-	nS
Turn-on Rise Time	t _r		-	3.0	-	nS
Turn-Off Delay Time	t _{d(off)}		-	16.5	-	nS
Turn-Off Fall Time	t _f		-	4.5	-	nS
Total Gate Charge	Q _g	V _{DS} =15V,I _D =8A, V _{GS} =10V	-	15	-	nC
Gate-Source Charge	Q _{gs}		-	6.5	-	nC
Gate-Drain Charge	Q _{gd}		-	4.5	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V,I _S =8A	-	0.8	1.2	V



GL4606-D8

GL Silicon N+P Channel Power MOSFET

P-CH Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250μA	-30	-33	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V,V _{GS} =0V	-	-	-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V,V _{DS} =0V	-	-	-1	μA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =-250μA	-0.6	-1.0	-2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-6.0 A	-	22	30	mΩ
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-5.0A	-	30	50	mΩ
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-2.5V, I _D =-4.0A	-	45	60	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-5V,I _D =-8A	10	-	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{ISS}	V _{DS} =-15V,V _{GS} =0V, F=1.0MHz	-	630	-	PF
Output Capacitance	C _{OSS}		-	110	-	PF
Reverse Transfer Capacitance	C _{rss}		-	76	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-15V, R _L =2.3Ω V _{GS} =-10V,R _{GEN} =6Ω	-	8.5	-	nS
Turn-on Rise Time	t _r		-	6.5	-	nS
Turn-Off Delay Time	t _{d(off)}		-	21	-	nS
Turn-Off Fall Time	t _f		-	8.5	-	nS
Total Gate Charge	Q _g	V _{DS} =-15V,I _D =-8A V _{GS} =-10V	-	10.2	-	nC
Gate-Source Charge	Q _{gs}		-	1.9	-	nC
Gate-Drain Charge	Q _{gd}		-	2.4	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V,I _S =-8A	-	-	-1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

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