

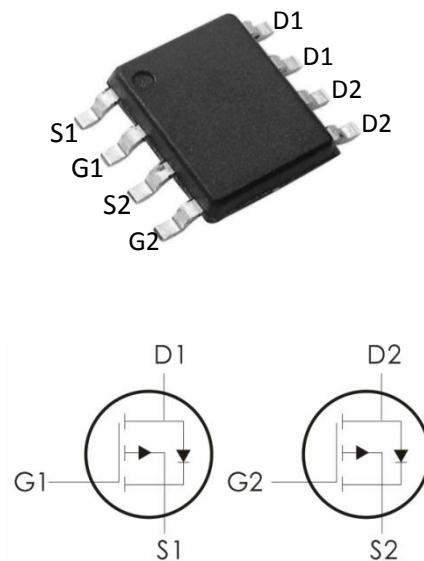
Description:

This Dual P-Channel MOSFET 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.

Features:

- 1) $V_{DS}=-30V, I_D=-8A, R_{DS(on)}<16m\Omega @V_{GS}=10V$ (typ:13m Ω)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Package Marking and Ordering Information:

Part NO.	Marking	Package	Quantity
DO4813	4813	SOP-8D	3000 pcs/Reel

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

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-8	A
	Continuous Drain Current- $T_A=100^{\circ}C^1$	-5.8	
I_{DM}	Pulsed Drain Current ¹	-35	A
E_{AS}	Single Pulse Avalanche Energy ²	29	mJ
P_D	Power Dissipation	2.5	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^{\circ}C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	50	$^{\circ}C/W$

Electrical Characteristics: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Sourctce Breakdown Voltage	V _{GS} =-0V, I _D =250 μ A	-30	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-30V	---	---	-1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	Gate -Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	-1	-1.65	-2.5	V
R _{DS(ON)}	Drain-Source On Resistance ³	V _{GS} =-10V, I _D =-8A	---	13	16	m Ω
		V _{GS} =-4.5V, I _D =-5.6A	---	18	25	
Dynamic Characteristics						
C _{iss}	Input Capacitance ⁴	V _{DS} =-15V, V _{GS} =0V, f=1MHz	---	1229	---	pF
C _{Oss}	Output Capacitance ⁴		---	204	---	
C _{rss}	Reverse Transfer Capacitance ⁴		---	154	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time ⁴	V _{DD} =-15V, I _D =-1A, R _{GEN} =6 Ω .V _{GS} =-10V	---	8.7	---	ns
t _r	Rise Time ⁴		---	10.3	---	ns
t _{d(off)}	Turn-Off Delay Time ⁴		---	35.1	---	ns
t _f	Fall Time ⁴		---	46.7	---	ns
Q _g	Total Gate Charge ⁴	V _{GS} =-10V, V _{DS} =-15V, I _D =-8A	---	26	---	nC
Q _{gs}	Gate-Source Charge ⁴		---	9	---	nC
Q _{gd}	Gate-Drain “Miller” Charge ⁴		---	5.6	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode Forward Voltage ³	V _{GS} =0V, I _S =-1A	---	---	-1.2	V
I _S	Continuous Source Current	V _D =V _G =0V	---	---	-8	A
I _{SM}	Pulsed Source Current	V _D =V _G =0V	---	---	-5.8	A
T _{rr}	Reverse Recovery Time ⁴	I _{SD} =-8A, dI _{SD} /dt=100A/μs	---	16.3	---	NS
Q _{rr}	Reverse Recovery Charge ⁴		---	5.9	---	NC

Notes:

1. Pulse width is limited by maximum junction temperature.
2. UIS tested and pulse width are limited by maximum junction temperature 150°C (initial temperature $T_J=25^\circ\text{C}$).
3. Pulse test; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Typical Characteristics: ($T_A=25^\circ\text{C}$ unless otherwise noted)

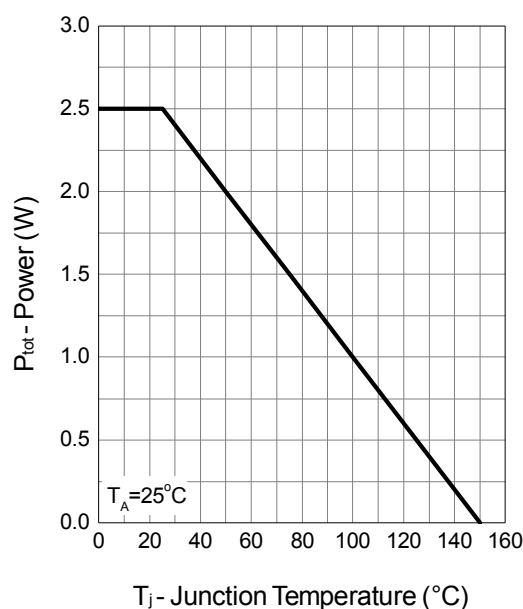


Fig1. Power Dissipation

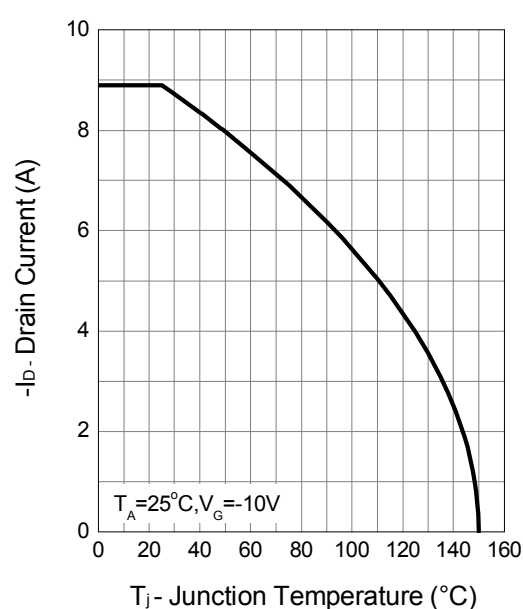


Fig2. Drain Current

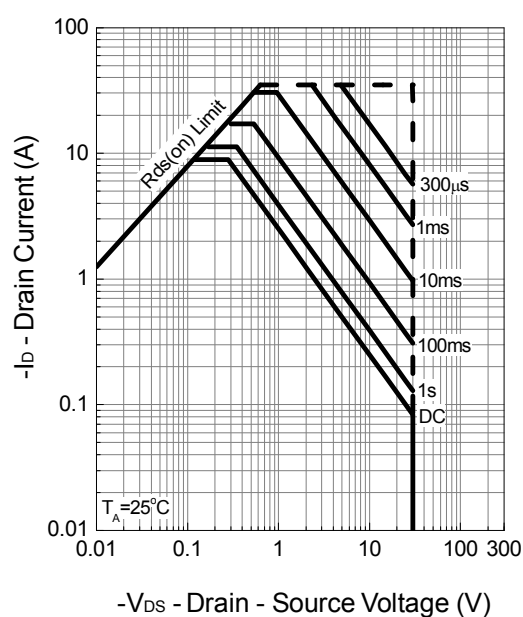


Fig3. Safe Operation Area

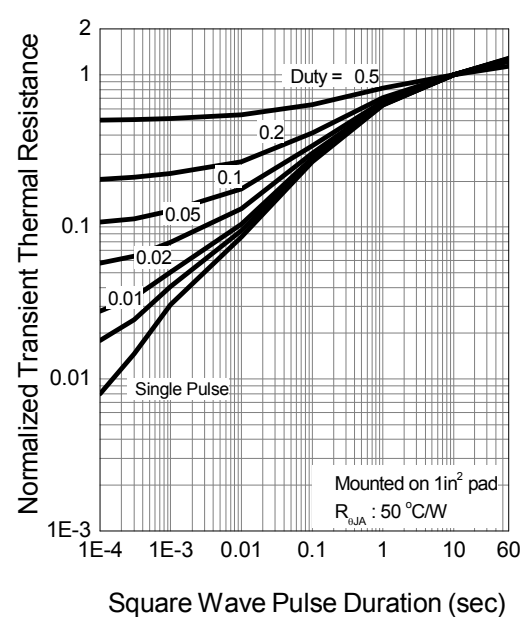


Fig4. Thermal Transient Impedance

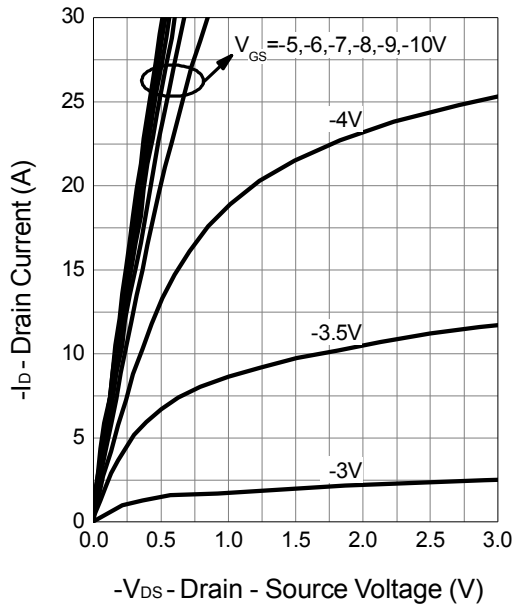


Fig5. Output Characteristics

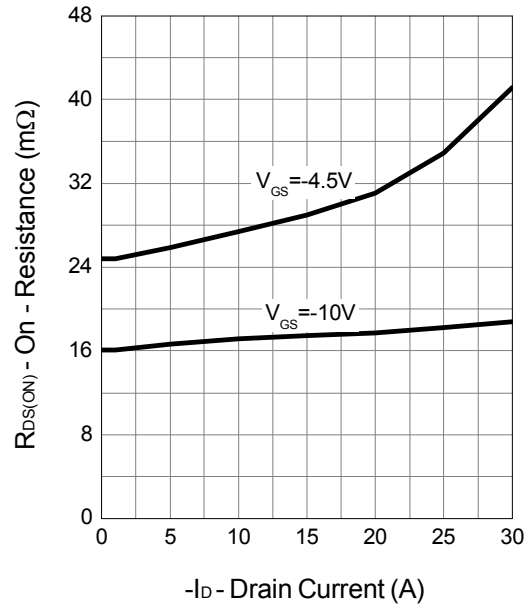


Fig6. Drain-Source On Resistance

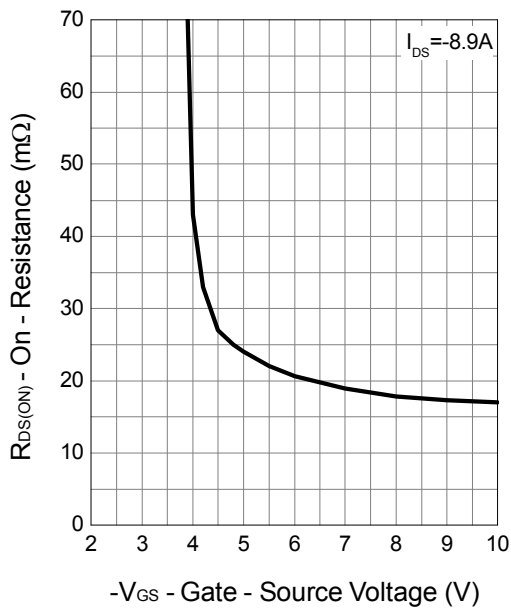


Fig7. Gate-Source On Resistance

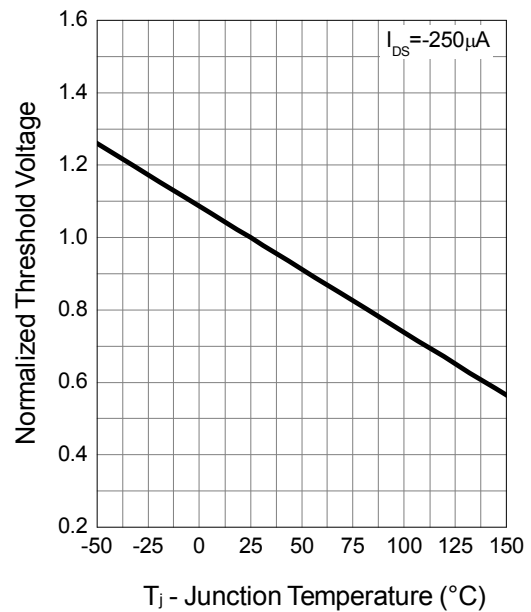


Fig8. Gate Threshold Voltage

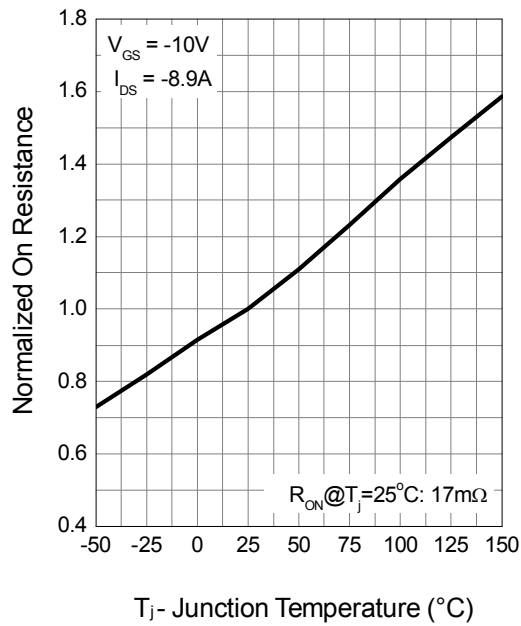


Fig9.Drain-Source On Resistance

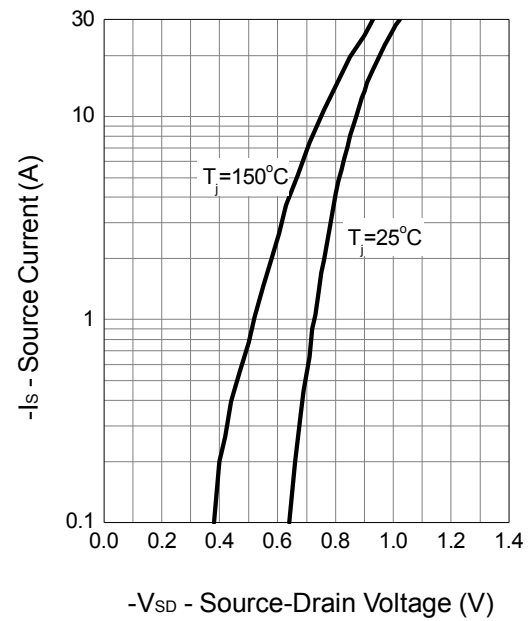


Fig10.Source-Drain Diode Forward

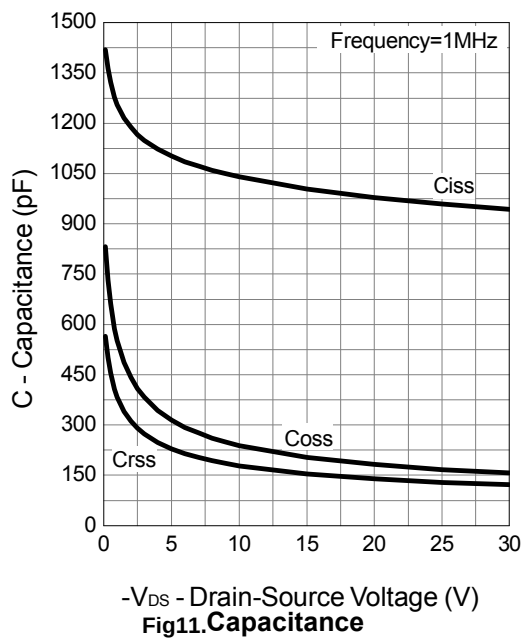


Fig11.Capacitance

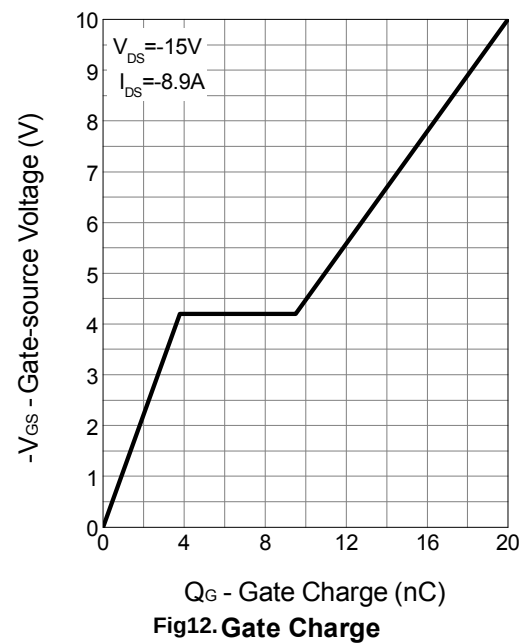
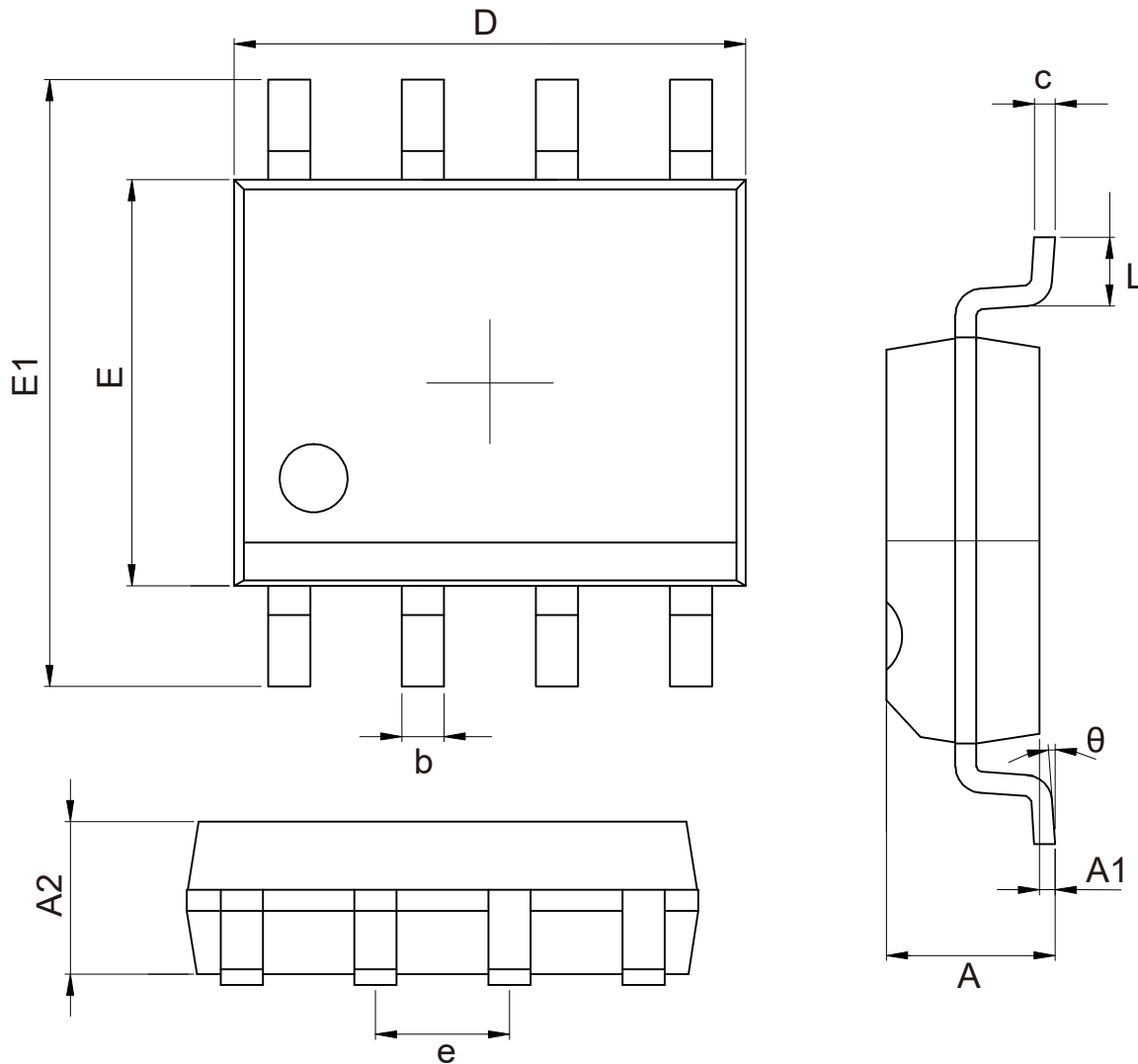


Fig12.Gate Charge

SOP-8DPackage Information:



COMMON DIMENSIONS			
CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	1.350	—	1.750
A1	0.100	—	0.250
A2	1.350	—	1.550
b	0.330	—	0.510
c	0.170	—	0.250
D	4.700	—	5.100
E	3.800	3.900	4.000
E1	5.800	—	6.200
e	1.270BSC		
L	0.400	—	1.270
θ	0°	—	8°

Unit:mm

Marking Information:

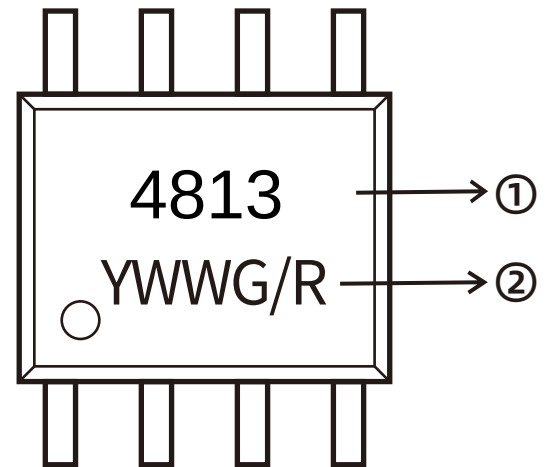
①: Part NO.

②: Date Code (YWWG / R)

Y: Year Code , last digit of the year

WW : Week Code (01-53)

G/R: G(Green) /R(Lead Free)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.0	2024-06-06	Release of final version

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