General Description

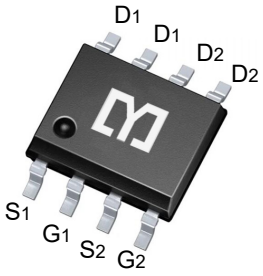
The MY4800 is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent R_{DSON} and gate charge for most of the small power switching and load switch applications.

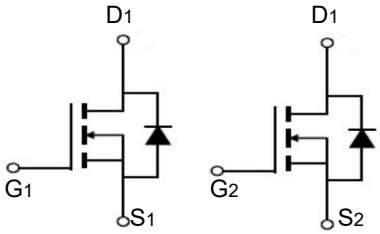
Features

V_{DSS}	30	V
I_D	8	A
$R_{DS(ON)}$(atV_{GS}=10V)	< 18	mΩ
$R_{DS(ON)}$(atV_{GS}=4.5V)	< 24	mΩ

Application

- Battery protection
- Load switch
- Uninterruptible power supply





Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY4800	SOP-8	4800	3000

Absolute Maximum Ratings (T_C=25℃unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Drain Current – Continuous (T_C=25°C	8	A
	Drain Current – Continuous (T_C=100°C)	6.3	A
I_{DM}	Drain Current – Pulsed[1]	30	A
EAS	Single Pulse Avalanche Energy[2]	14	mJ
IAS	Single Pulse Avalanched Current[2]	17	A
P_D	Power Dissipation (T_C=25°C)	2.1	W
	Power Dissipation – Derate above 25°C	0.017	W/°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction to ambient	---	60	℃/W

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	30	---	---	V
$\triangle BV_{DSS}/\triangle T_J$	BV_{DSS} Temperature Coefficient	Reference to 25℃ , I_D=1mA	---	0.04	---	V/℃
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V , V_{GS}=0V , T_J=25℃	---	---	1	uA
		V_{DS}=24V , V_{GS}=0V , T_J=125℃	---	---	10	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
$R_{DS(ON)}$	Static Drain-Source On-Resistance[3]	V_{GS}=10V , I_D=6A	---	15	18	mΩ
		V_{GS}=4.5V , I_D=3A	---	17	24	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1.2	1.5	2.5	V
$\triangle V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	-4	---	mV/℃
gfs	Forward Transconductance	V_{DS}=10V , I_D=6A	---	13	---	S
Q_g	Total Gate Charge[3,4]	V_{DS}=15V , V_{GS}=4.5V , I_D=5A	---	4.1	8	nC
Q_{gs}	Gate-Source Charge[3,4]		---	1	2	
Q_{gd}	Gate-Drain Charge[3,4]		---	2.1	4	
$T_{d(on)}$	Turn-On Delay Time[3,4]	V_{DD}=15V , V_{GS}=10V , R_G=6 I_D=1A	---	2.6	5	ns
T_r	Rise Time[3,4]		---	7.2	14	
$T_{d(off)}$	Turn-Off Delay Time[3,4]		---	15.8	30	
T_f	Fall Time[3,4]		---	4.6	9	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , F=1MHz	---	345	500	pF
C_{oss}	Output Capacitance		---	55	80	
C_{rss}	Reverse Transfer Capacitance		---	32	55	
Rg	Gate resistance	V_{GS}=0V, V_{DS}=0V, f=1MHz	---	3.2	6.4	Ω
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	7.5	A
I_{SM}	Pulsed Source Current[3]		---	---	30	A
V_{SD}	Diode Forward Voltage[3]	V_{GS}=0V , I_S=1A , T_J=25℃	---	---	1	V
t_{rr}	Reverse Recovery Time	V_{GS}=0V,I_S=1A , di/dt=100A/μs T_J=25℃	---	---	---	ns
Q_{rr}	Reverse Recovery Charge		---	---	---	nC

Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. VThe data tested by pulsed , pulse width DD=25V,VGS=10V,L=0.1mH,IAS=17A.,RG≦=25 300us , duty cycle ,Starting TJ=25≦℃. 2%.
3. Essentially independent of operating temperature.

Typical Characteristics

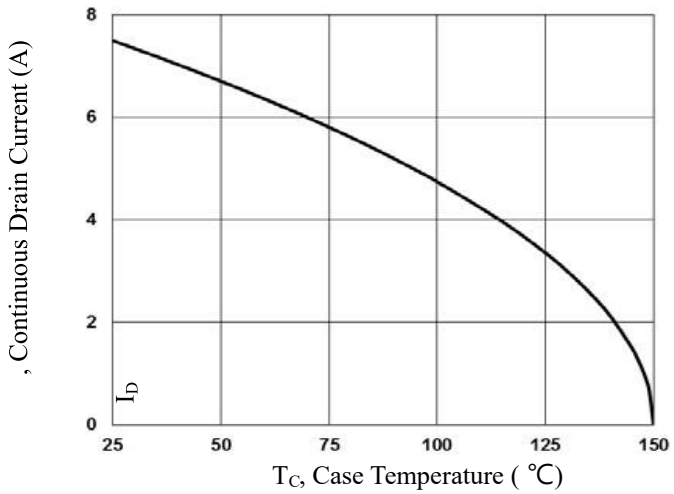


Fig.1 Continuous Drain Current vs. T_C

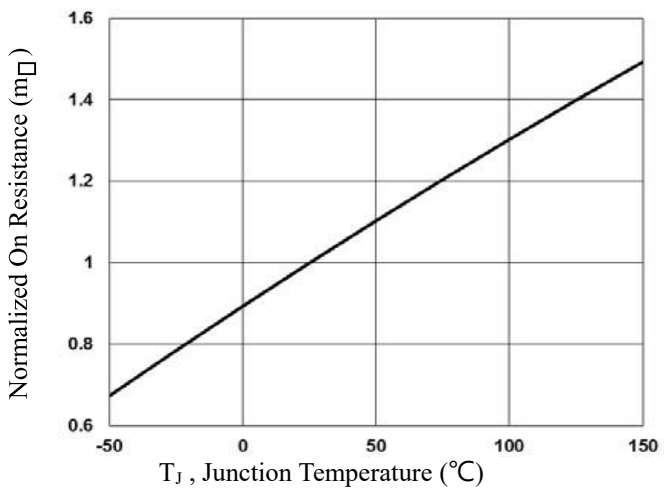


Fig.2 Normalized RDSON vs. T_J

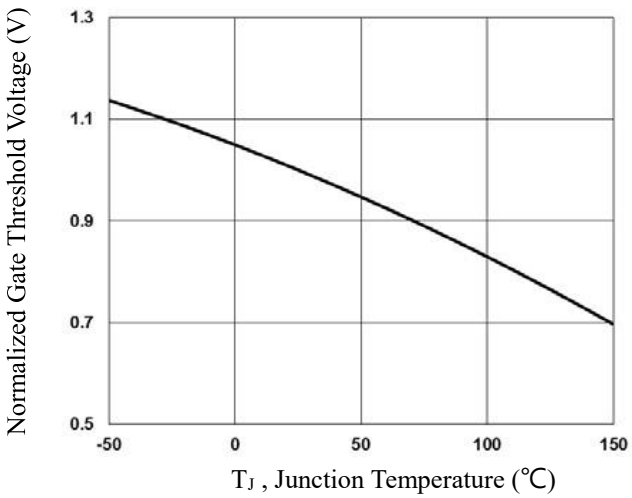


Fig.3 Normalized V_{th} vs. T_J

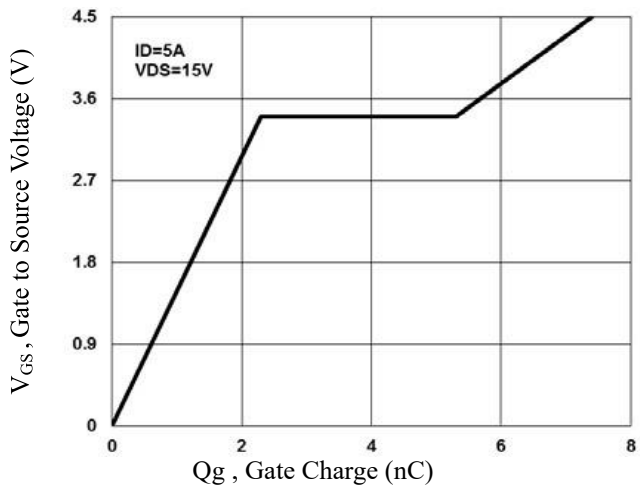


Fig.4 Gate Charge Waveform

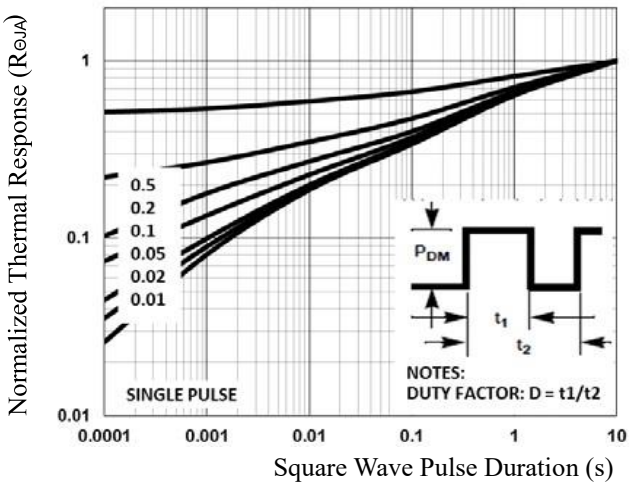


Fig.5 Normalized Transient Response

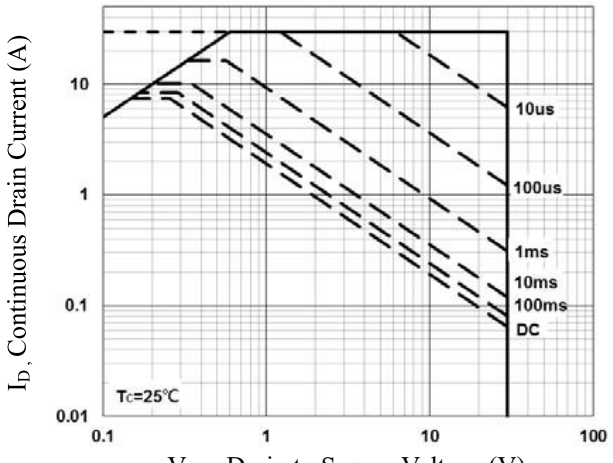


Fig.6 Maximum Safe Operation Area

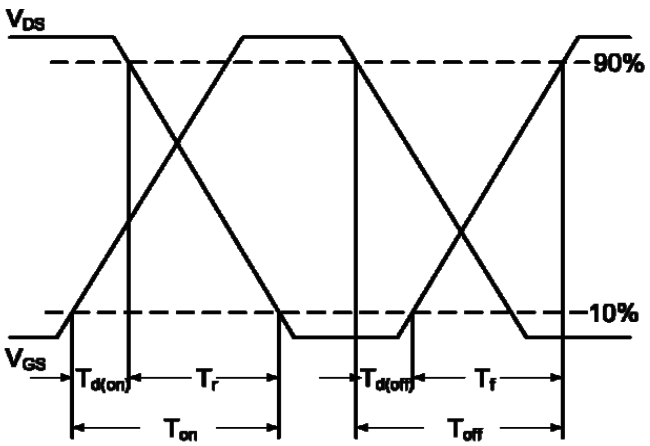


Fig.7 Switching Time Waveform

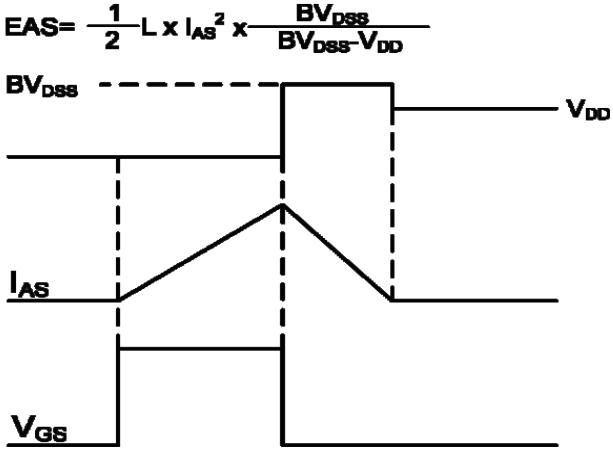
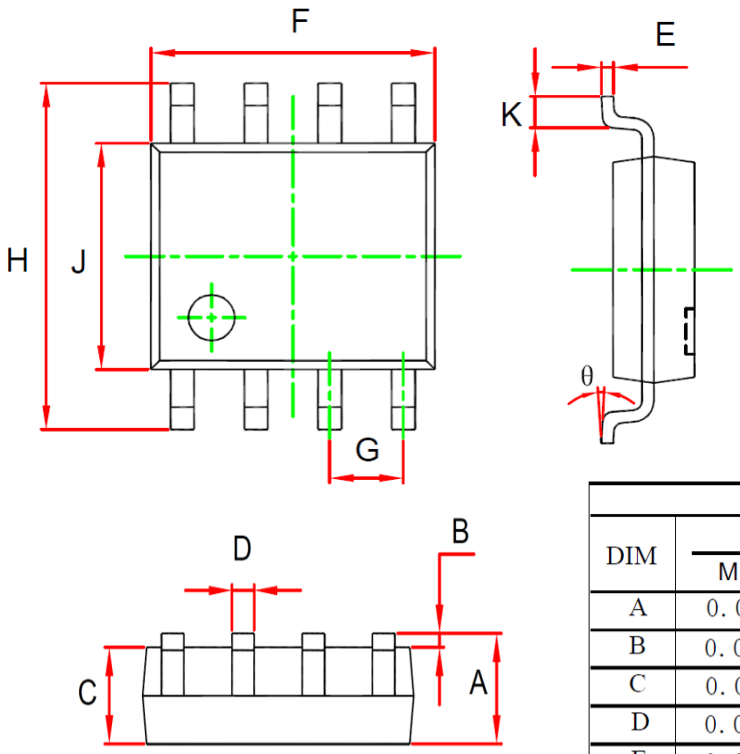


Fig.8 EAS waveform

Package Mechanical Data-SOP-8



DIMENSIONS					
DIM	INCHES		MM		
	MIN	MAX	MIN	MAX	NOTE
A	0.053	0.069	1.350	1.750	
B	0.004	0.010	0.100	0.250	
C	0.053	0.061	1.350	1.550	
D	0.013	0.020	0.330	0.510	
E	0.007	0.010	0.170	0.250	
F	0.189	0.197	4.800	5.000	
G	0.050 (BSC)		1.270 (BSC)		
H	0.228	0.244	5.800	6.200	
J	0.150	0.157	3.800	4.000	
K	0.016	0.050	0.400	1.270	
θ	0°	8°	0°	8°	