SOP8 Plastic-Encapsulate MOSFETS

TW4803 P-Channel MOSFET

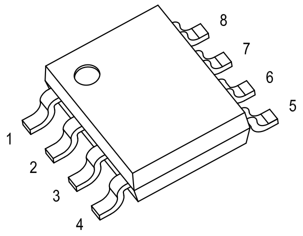
V_{DS} = -30V ID = -5.2A

$R_{DS(ON)}$ TYP =47mΩ@V_{GS}= -10V

$R_{DS(ON)}$ TYP =68mΩ@V_{GS}= -4.5V

SOP-8

RoHS COMPLIANT



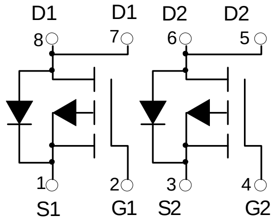
Features

- Surface Mount Package
- P-Channel Switch with Low RDS(on)

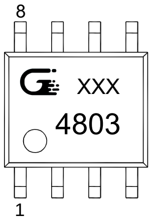
Application

- Notebook
- Load Switch
- Battery Protection
- Hand-held instruments

Equivalent Circuit



Marking



4803= Device code
XXX= YW code (Trace Code Marking)
Solid dot = Pin1 indicator

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	T_C=25°C	I_D	-5.2	A
Drain Current-Continuous	T_C=100°C		-3.48	A
Drain Current-Pulsed (Note1)		I_{DM}	-22	A
Power Dissipation	T_C=25°C	P_D	2.1	W
Power Dissipation-Derate above	T_C=25°C		0.017	W/°C
Junction Temperature Range		T_J	-55 to 150	°C
Storage Temperature Range		T_{stg}	-55 to 150	°C
Thermal Resistance From Junction to Ambient		$R_{ΘJA}$	60	°C/W

Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V I_D=-250μA	-30	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=-30V,V_{GS}=0V,T_J=25℃	-	-	-1	μA
		V_{DS}=-24V,V_{GS}=0V,T_J=125℃	-	-	-10	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS},I_D=-250μA	-1.0	-1.6	-2.5	V
$V_{GS(th)}$ Temperature Coefficient	$\Delta V_{GS(th)}$	V_{DS}= V_{GS},I_D=-250μA	-	4	-	mV/°C
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-3A	-	47	55	mΩ
		V_{GS}=-4.5V, I_D=-2A	-	68	80	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-10V,I_D=-3.0A	-	3.5	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V, F=1.0MHz	-	560	-	pF
Output Capacitance	C_{oss}		-	55	-	pF
Reverse Transfer Capacitance	C_{rss}		-	40	-	pF
Switching Characteristics						
Turn-on Delay Time (Note2, 3)	$t_{d(on)}$	V_{DD}=30V, I_D=1A V_{GS}=10V,R_G=3.3Ω	-	2.9	-	nS
Turn-on Rise Time (Note2, 3)	t_r		-	9.5	-	nS
Turn-Off Delay Time (Note2, 3)	$t_{d(off)}$		-	18.4	-	nS
Turn-Off Fall Time (Note2, 3)	t_f		-	5.3	-	nS
Total Gate Charge (Note2, 3)	Q_g	V_{DS}=-15V,I_D=-3A, V_{GS}=-4.5V	-	5.1	-	nC
Gate-Source Charge (Note2, 3)	Q_{gs}		-	2.0	-	nC
Gate-Drain Charge (Note2, 3)	Q_{gd}		-	2.2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=-1.0A	-	-	-1.2	V
Diode continous forward current	I_S	V_G=V_D=0V , Force Current	-	-	-5.2	A
Diode pulse current	I_{SM}		-	-	-11	A

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
3. Switching characteristics are independent of operating junction temperatures
4. Guaranteed by design, not subject to production

Typical Electrical and Thermal Characteristics

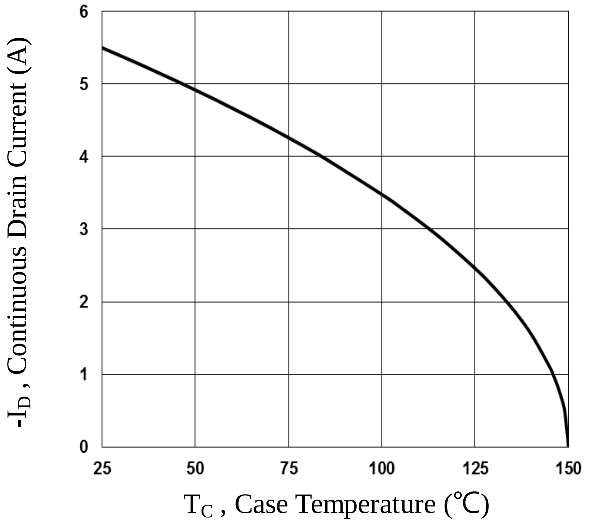


Fig.1 Continuous Drain Current vs. T_C

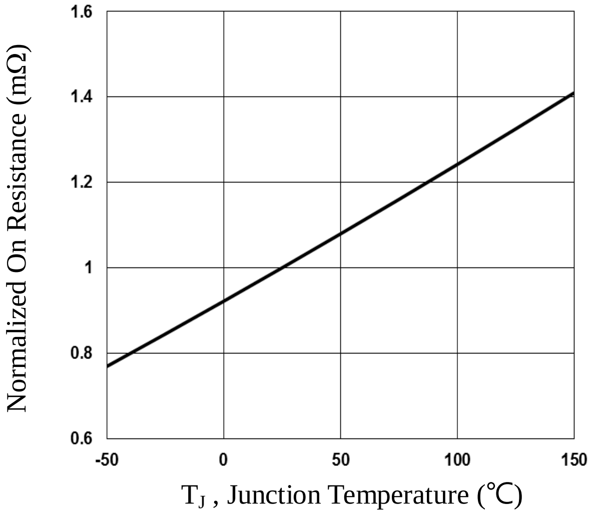


Fig.2 Normalized RDSON vs. T_J

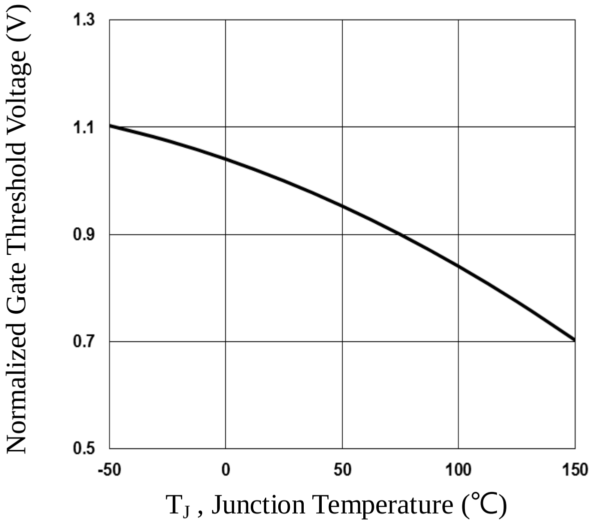


Fig.3 Normalized V_{th} vs. T_J

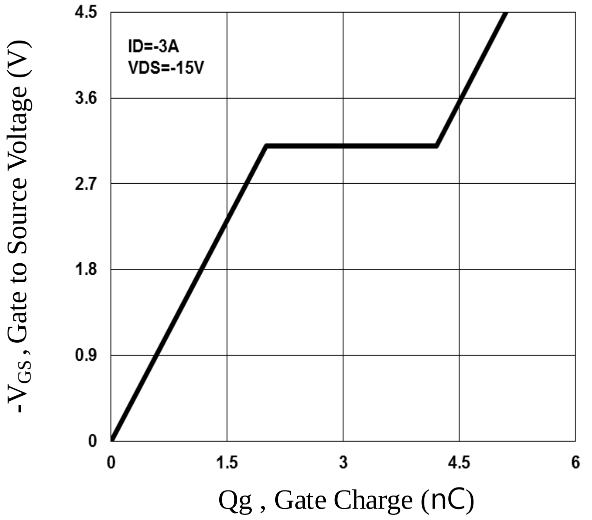


Fig.4 Gate Charge Waveform

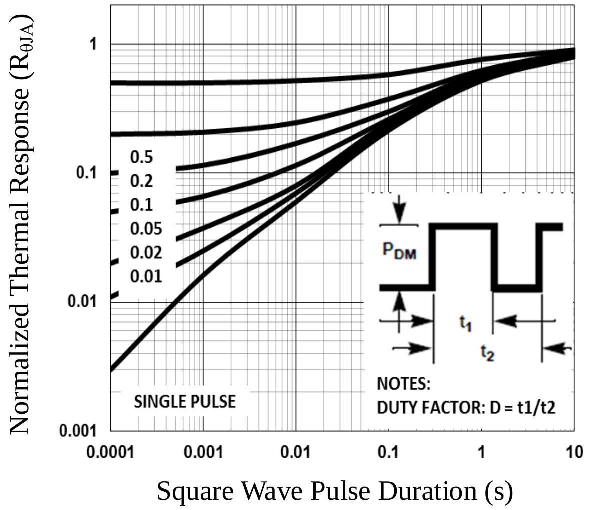


Fig.5 Normalized Transient Impedance

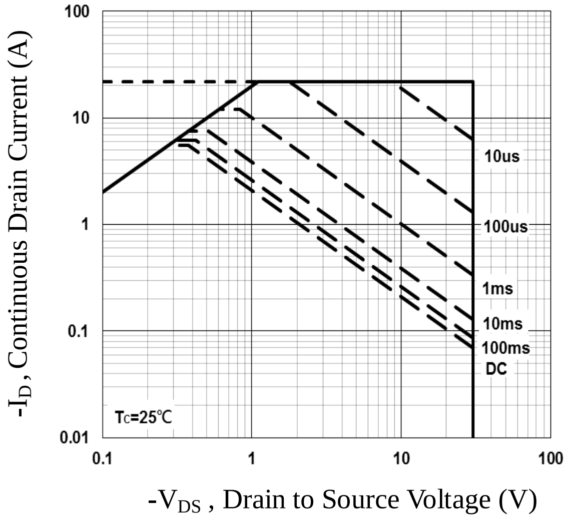


Fig.6 Maximum Safe Operation Area

Typical Electrical and Thermal Characteristics

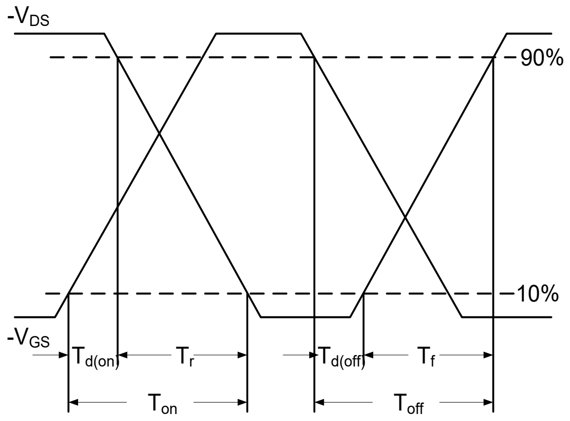


Fig.7 Switching Time Waveform

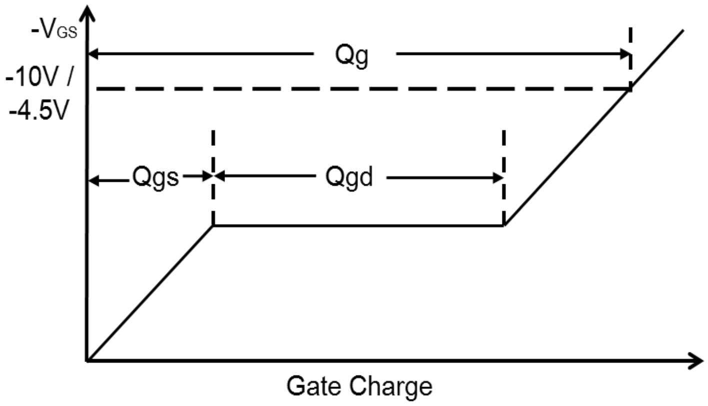
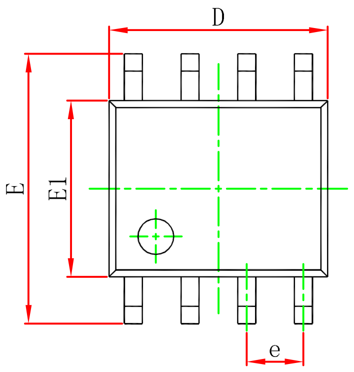
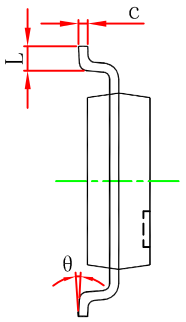
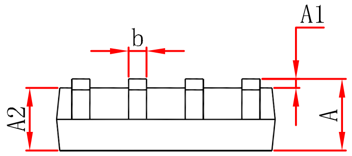


Fig.8 Gate Charge Waveform

SOP8 Package Outline Dimensions

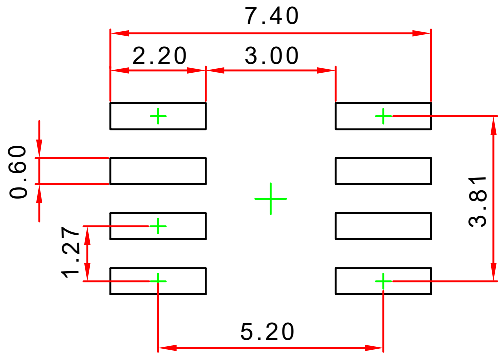






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	1.450	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
e	1.270（BSC）		0.050（BSC）	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOP8 Suggested Pad Layout



Note:

1. Controlling dimension:in/millimeters.

2. General tolerance: ±0.05mm.

3. The pad layout is for reference purposes only.

Package and Ordering Information

Package	Outline	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)
SOP8	TAPING	13"	330	4000