

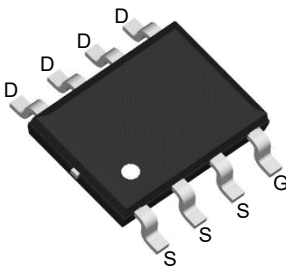
Features

The TW8P06S is the high cell density trench P-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications. The TW8P06S meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

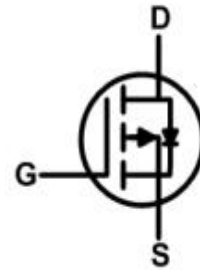
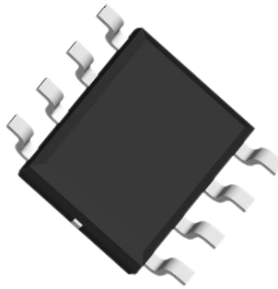
Product Summary

V _{DS}	-60V
I _D	-8A
R _{DS(ON)} (at V _{GS} =-10V)	<90mΩ
R _{DS(ON)} (at V _{GS} =-4.5V)	< 115mΩ

Top View



Bottom View



SOP-8

Maximum Ratings(Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-60	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current, V _{GS} @ -10V ¹	I _D @TA=25°C	-8.0	A
Continuous Drain Current, V _{GS} @ -10V	I _D @TA =70°C	-6.2	
Pulsed Drain Current ²	I _{DM}	-16.2	
Single Pulse Avalanche Energy	E _{AS}	69.7	mJ
Avalanche Current	I _{AS}	44.4	A
Total Power Dissipation	P _D @TA=25°C	6.1	W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	
Thermal Data			
Parameter	Symbol	Max.	Unit
Thermal Resistance Junction-ambient	R _{θJA}	85	°C/W
Thermal Resistance Junction-Case	R _{θJC}	36	

Electrical Characteristics(TJ=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters						
Drain-Source Breakdown Voltage	BVDSS	VGS = 0V, ID = -250μA	-60			V
Gate Threshold Voltage	VGS(th)	VDS =VGS, ID = -250μA	-1.2		-2.5	V
Gate-Body leakage Current	IGSS	VDS =0V, VGS = ±20V			±100	nA
Zero Gate Voltage Drain Current	IDSS	VDS=-48V , VGS=0V			1	μA
Static Drain-Source On-Resistance	RDS(on)	VGS = -10V, ID = -3A		70	90	mΩ
		VGS = -4.5V, ID = -2A		90	115	mΩ
Dynamic Parameters						
Input Capacitance	Ciss	VDS=-15V , VGS=0V , f=1MHz		1080		pF
Output Capacitance	Coss			73		pF
Reverse Transfer Capacitance	Crss			50		pF
Total Gate Charge	Qg	VDS=-48V , VGS=-4.5V ID=-3A		11.8		nC
Gate Source Charge	Qgs			1.9		nC
Gate Drain Charge	Qgd			6.5		nC
Switching Parameters						
Turn-On DelayTime	td(on)	VDD=-15V , VGS=-10V , RG=3.3Ω ID=-1A		8.8		ns
Turn-On Rise Time	tr			19.6		ns
Turn-Off DelayTime	td(off)			47.2		ns
Turn-Off Fall Time	tf			9.6		ns
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current ^{1,4}	IS	VG=VD=0V , Force Current			-8	A
Pulsed Source Current ^{2,4}	ISM				-16.2	
Diode Forward Voltage ²	VSD	VGS=0V , IS=-1A , TJ=25℃			-1.2	V

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

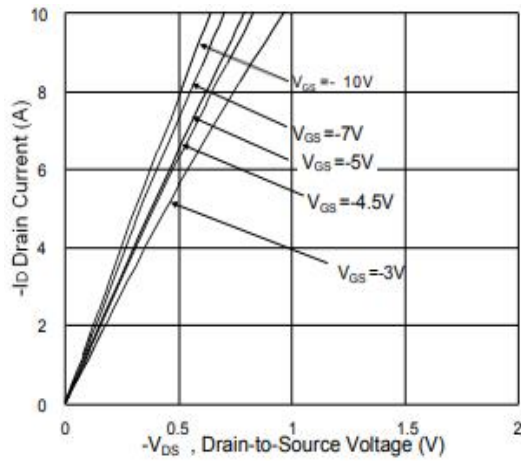


Fig. 1 Typical Output Characteristics

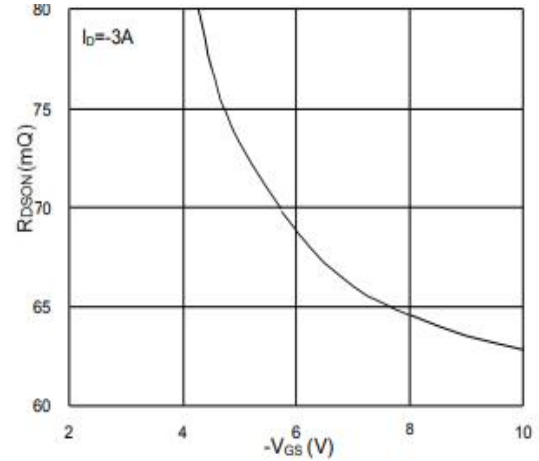


Fig. 2 On-Resistance v.s Gate-Source

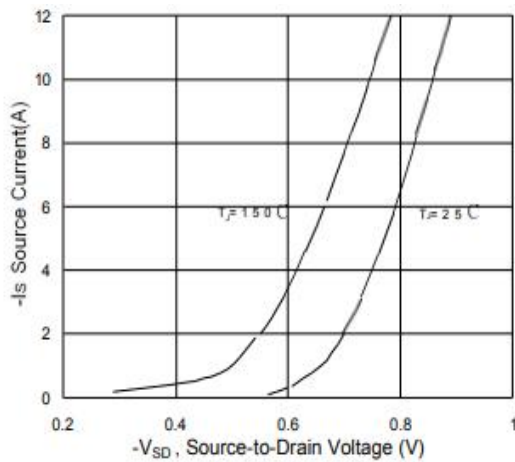


Fig. 3 Forward Characteristics of Reverse

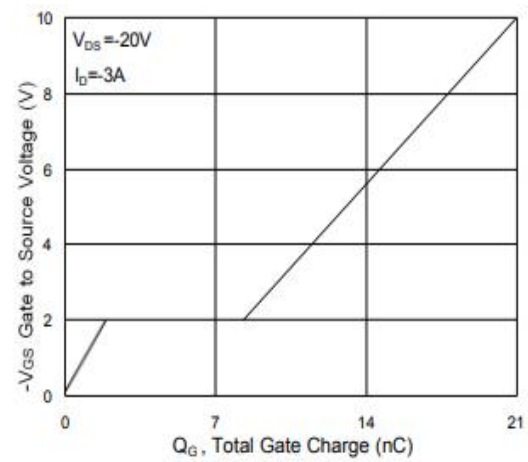


Fig. 4 Gate-Charge Characteristics

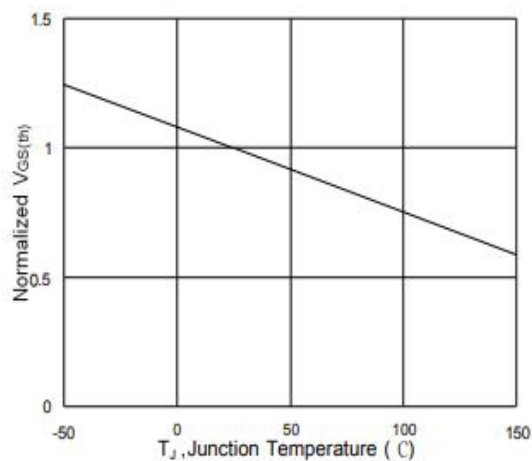


Fig. 5 Normalized $V_{GS(th)}$ vs. T_J

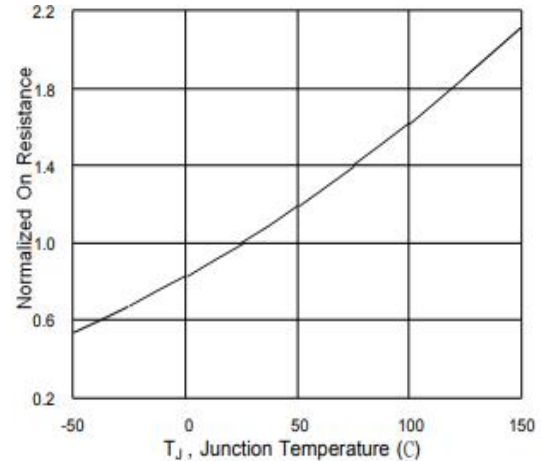


Fig. 6 Normalized $R_{DS(on)}$ vs. T_J

Typical Electrical and Thermal Characteristics

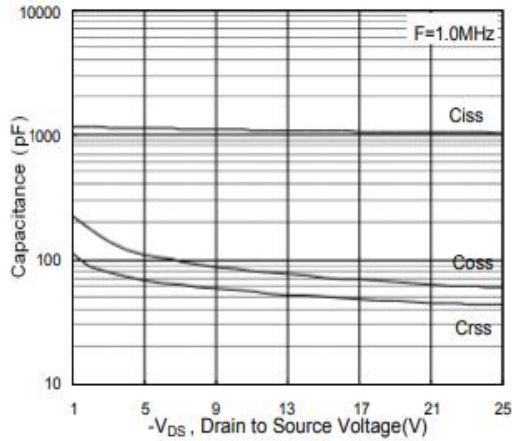


Fig.7 Capacitance

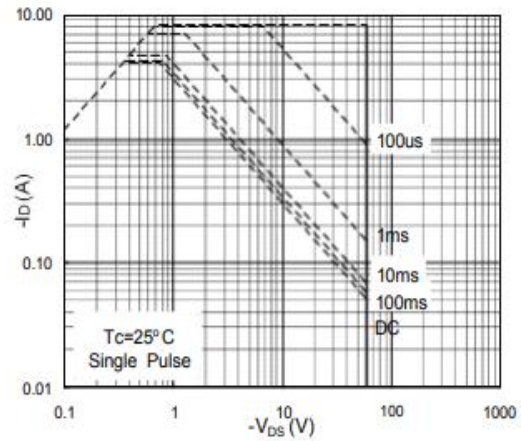


Fig.8 Safe Operating Area

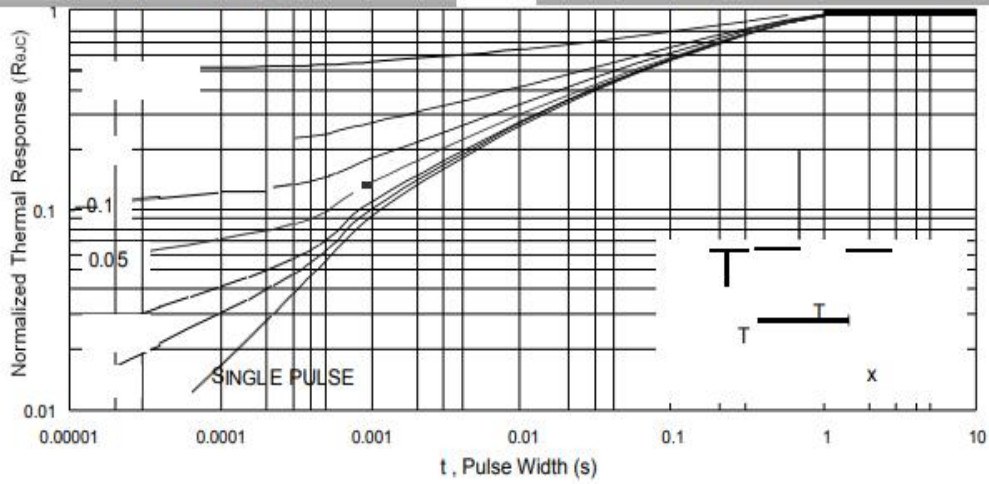


Fig.9 Normalized Maximum Transient Thermal Impedance

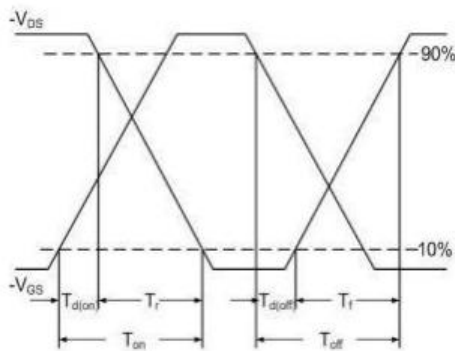


Fig.10 Switching Time Waveform

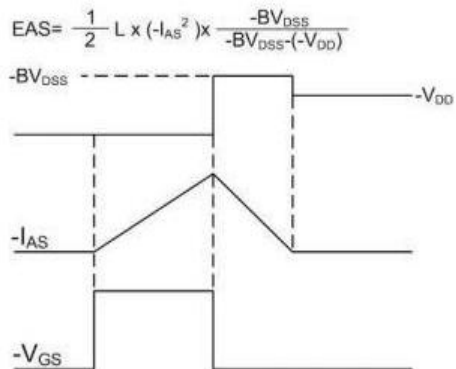
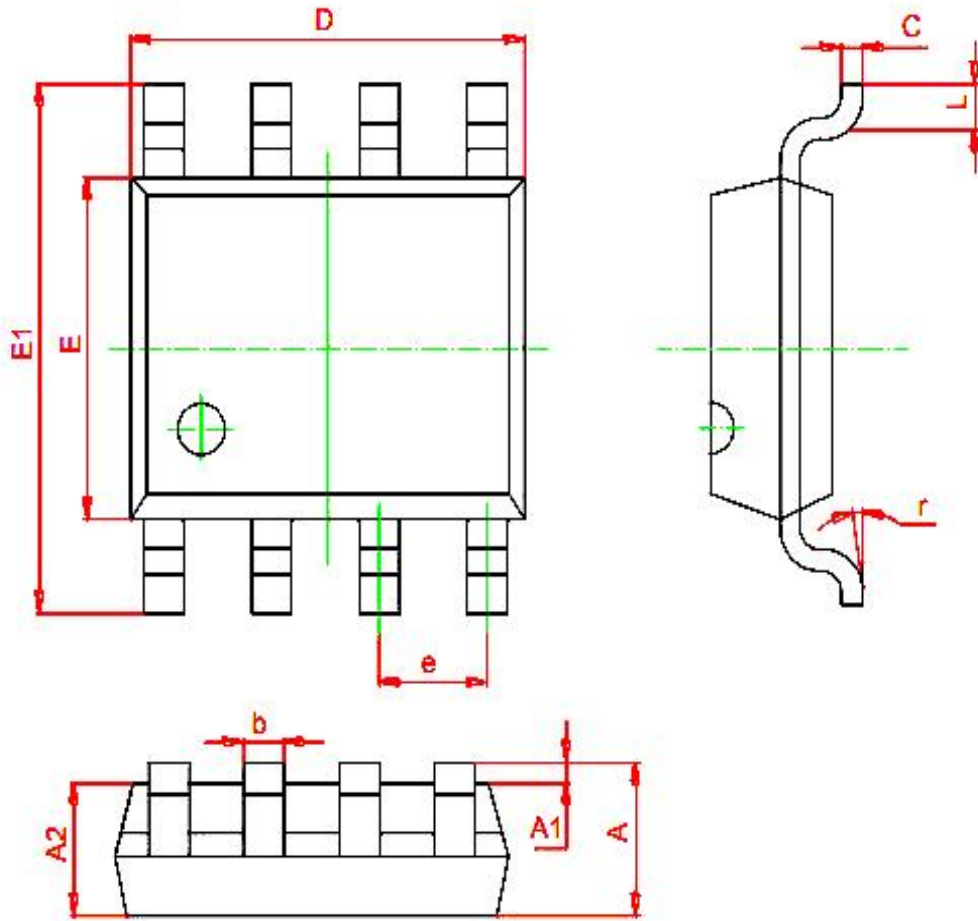


Fig.11 Unclamped Inductive Waveform

SOP-8 Package Outline Dimesions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°