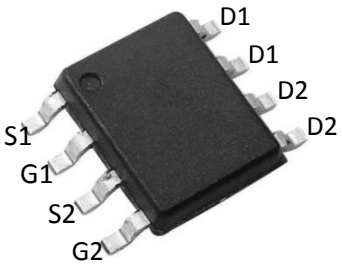
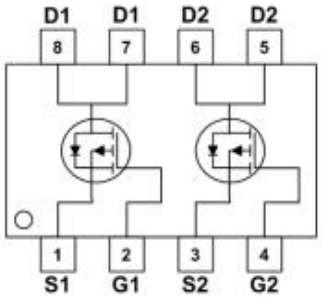
Features

The TW4805B is the high cell density trenched P-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications. The TW4805B meet the RoHS and Green





Dual SOP-8

Maximum Ratings(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	VDS	-30	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID@TA=25℃	-8.5	A
Continuous Drain Current	ID@TA =100℃	-4.6	
Pulsed Drain Current [2]	IDM	-28	
Total Power Dissipation	PD@TA=25℃	3	W
Storage Temperature Range	TSTG	-55 to 150	℃
Operating Junction Temperature Range	TJ	-55 to 150	
Thermal Data			
Parameter	**Symbol**	**Max.**	**Unit**
Thermal Resistance Junction-ambient	RθJA	41.7	℃/W

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS = 0V, ID = -250μA	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	VDS =VGS, ID = -250μA	-1.0	-1.5	-2.5	V
Gate-Body leakage Current	I_{GSS}	VDS =0V, VGS = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	VDS=-30V , VGS=0V , TJ=25℃			-1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	VGS = -10V, ID = -7A		26	35	mΩ
		VGS = -4.5V, ID = -4A		38	54	mΩ
Dynamic Parameters						
Input Capacitance	C_{iss}	VDS= -15V, VGS=0V, f=1.0MHz		982		pF
Output Capacitance	C_{oss}			135		pF
Reverse Transfer Capacitance	C_{rss}			109		pF
Total Gate Charge	Q_g	VDS= -15V, ID= -4A, VGS= -10V		10		nC
Gate Source Charge	Q_{gs}			2		nC
Gate Drain Charge	Q_{gd}			2.7		nC
Switching Parameters						
Turn-On DelayTime	$t_{d(on)}$	VDD= -15V, ID= -7A, VGS= -10,RGEN=2.5Ω		11		ns
Turn-On Rise Time	tr			19		ns
Turn-Off DelayTime	$t_{d(off)}$			45		ns
Turn-Off Fall Time	tf			26		ns
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain to Source Diode Forward Current		IS			-8.5	A
Maximum Pulsed Drain to Source Diode Forward Current		ISM			-28	
Diode Forward Voltage[2]	VSD	VGS=0V, IS= -7A		-0.8	-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

Figure1: Output Characteristics

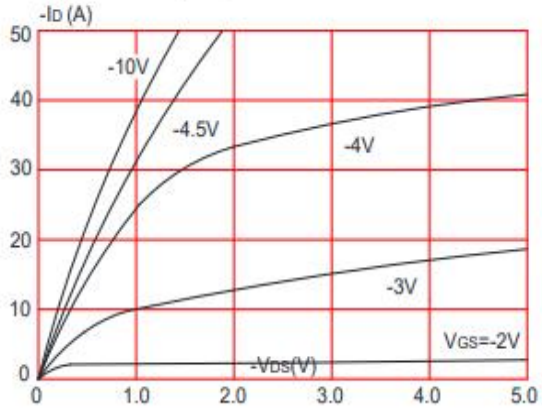


Figure 2: Typical Transfer Characteristics

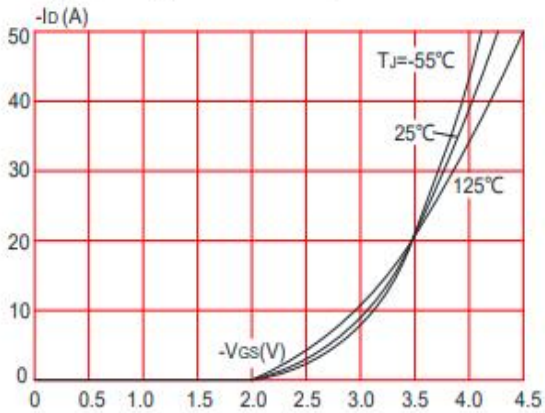


Figure 3: On-resistance vs. Drain Current

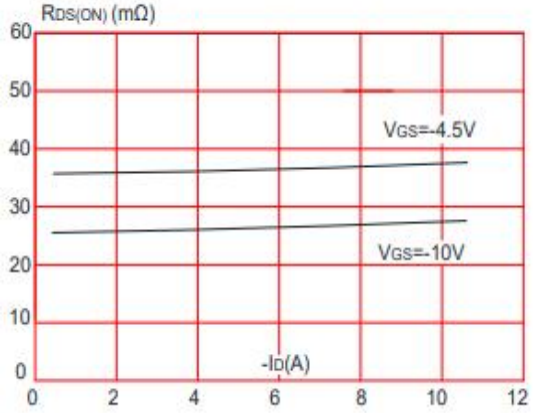


Figure 4: Body Diode Characteristics

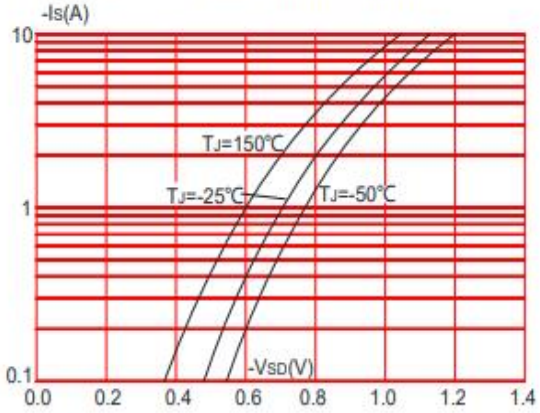


Figure 5: Gate Charge Characteristics

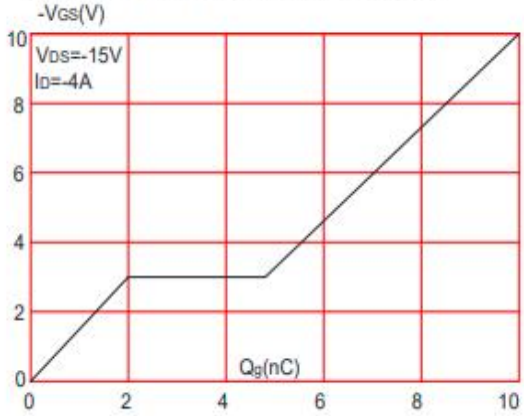
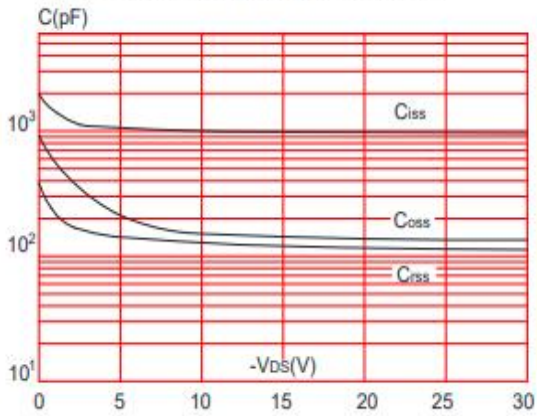


Figure 6: Capacitance Characteristics



Typical Electrical and Thermal Characteristics

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

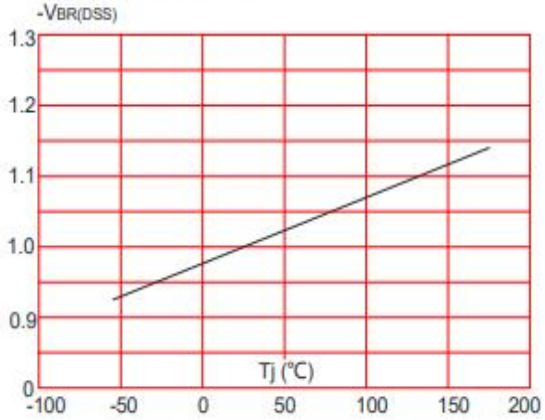


Figure 8: Normalized on Resistance vs. Junction Temperature

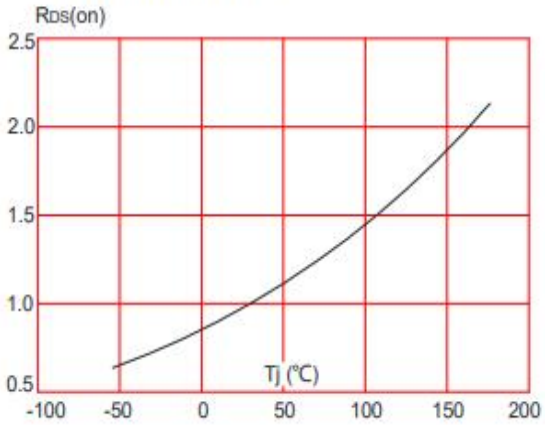


Figure 9: Maximum Safe Operating Area

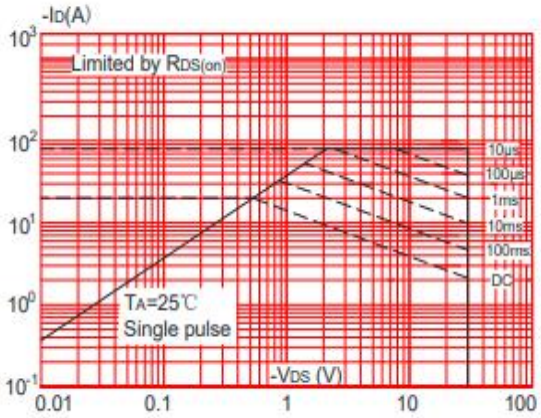


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

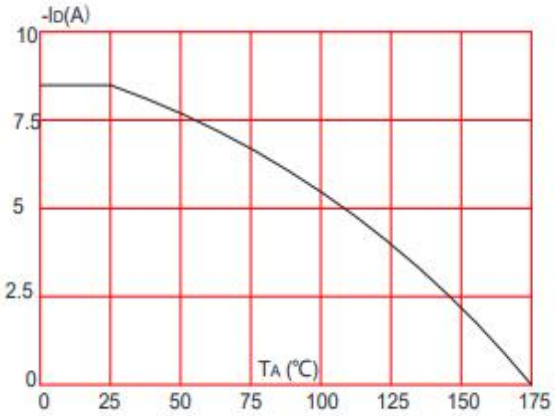
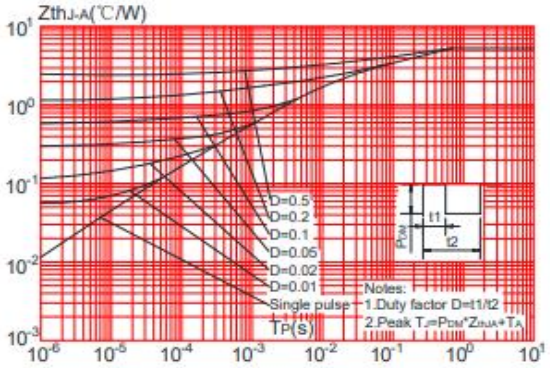
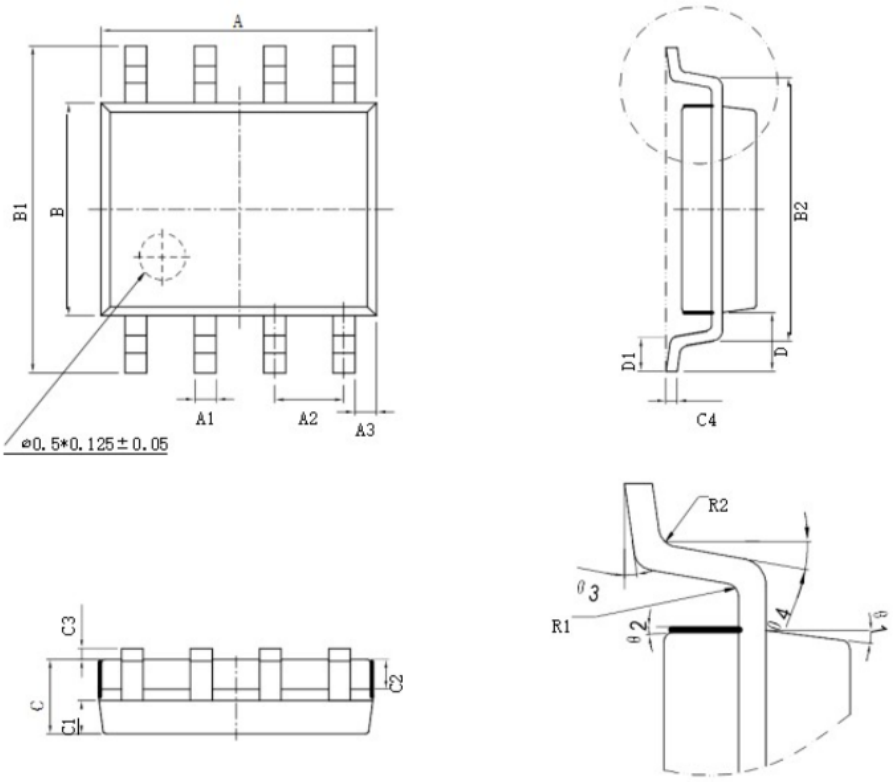


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Physical Dimensions

SOP8



Symbols	Dimension(mm)		Symbols	Dimension(mm)	
	Min	Max		Min	Max
A	4.80	5.00	C3	0.05	0.20
A1	0.356	0.456	C4	0.203	0.233
A2	1.27 TYP		D	1.05 TYP	
A3	0.345 TYP		D1	0.40	0.80
B	3.80	4.00	R1	0.20 TYP	
B1	5.80	6.20	R2	0.20 TYP	
B2	5.00 TYP		θ1	17° TYP4	
C	1.30	1.60	θ2	13° TYP4	
C1	0.55	0.65	θ3	0° ~ 8°	
C2	0.55	0.65	θ4	4° ~ 12°	