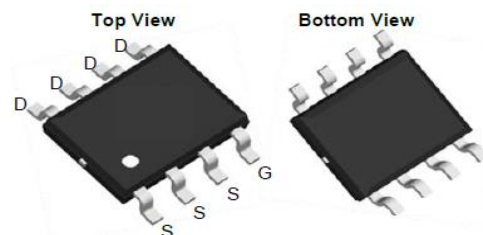


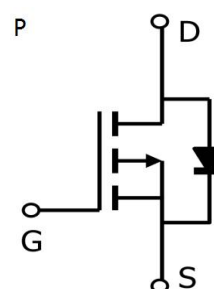
Features

The TW4485 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 TW4485 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

SOP-8

RoHS
COMPLIANT


Equivalent Circuit



Product Summary

V _{DS}	-40V
I _D	-13A
R _{DS(ON)} (at V _{GS} =-10V)	<19mΩ
R _{DS(ON)} (at V _{GS} =-4.5V)	< 25mΩ

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-40	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current	I _D @TA=25°C	-13	A
Continuous Drain Current	I _D @TA =100°C	-8.5	
Pulsed Drain Current ²	I _{DM}	-52	
Single Pulse Avalanche Energy	E _{AS}	80	mJ
Total Power Dissipation	P _D @TA=25°C	3	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}	41	°C/W

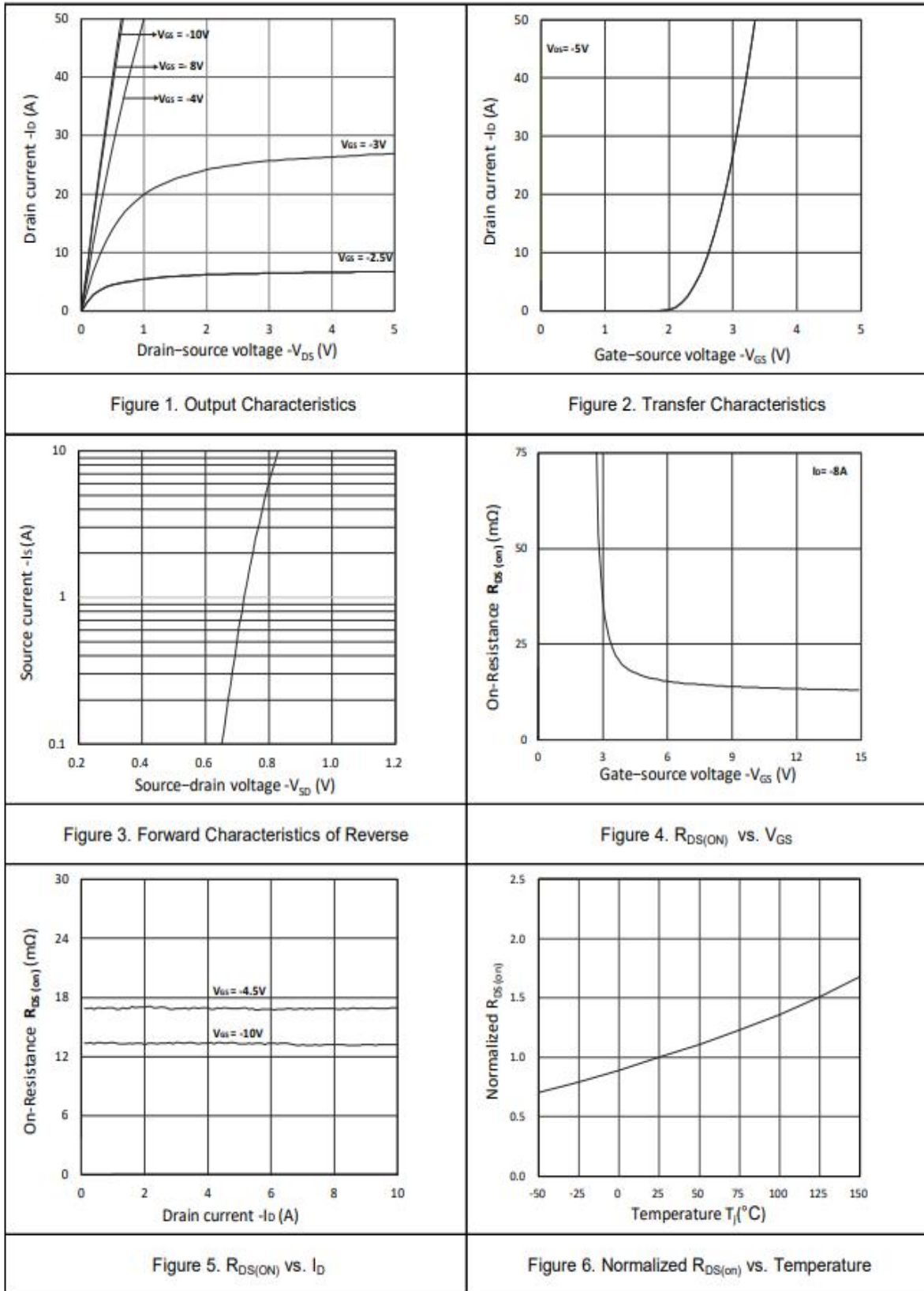
Electrical Characteristics(TJ=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters						
Drain-Source Breakdown Voltage	BVDSS	VGS = 0V, ID = -250μA	-40			V
Gate Threshold Voltage	VGS(th)	VDS =VGS, ID = -250μA	-1.0	-1.5	-2.2	V
Gate-Body leakage Current	IGSS	VDS =0V, VGS = ±20V			±100	nA
Zero Gate Voltage Drain Current	IDSS	VDS = -40V, VGS = 0V			-1	μA
Static Drain-Source On-Resistance	RDS(on)	VGS = -10V, ID = -5A		14	19	mΩ
		VGS = -4.5V, ID = -10A		19.5	25	mΩ
Dynamic Parameters						
Input Capacitance	Ciss	VDS = -20V, VGS =0V, f =1MHz		2525		pF
Output Capacitance	Coss			19		pF
Reverse Transfer Capacitance	Crss			172		pF
Total Gate Charge	Qg	VGS = -10V,VDS = -20V, ID= -10A		35		nC
Gate Source Charge	Qgs			5.5		nC
Gate Drain Charge	Qgd			8		nC
Switching Parameters						
Turn-On DelayTime	td(on)	VGS = -10V, VDD = -20V, RG = 3Ω, ID= -10A		14.5		ns
Turn-On Rise Time	tr			20.2		ns
Turn-Off DelayTime	td(off)			32		ns
Turn-Off Fall Time	tf			10		ns
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current ^{1,4}	IS	VG=VD=0V , Force Current			-13	A
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



Typical Electrical and Thermal Characteristics

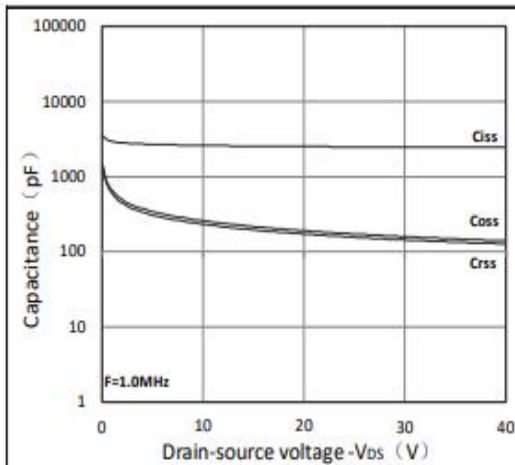


Figure 7. Capacitance Characteristics

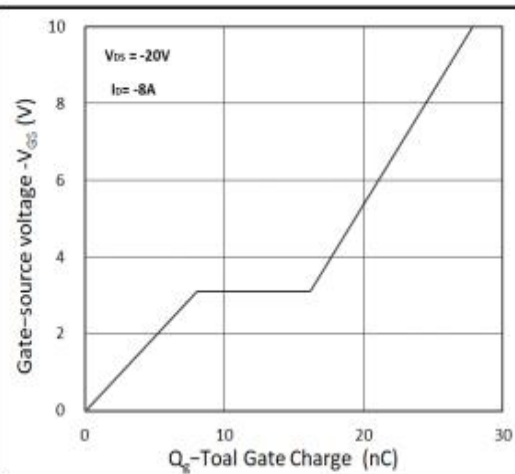


Figure 8. Gate Charge Characteristics

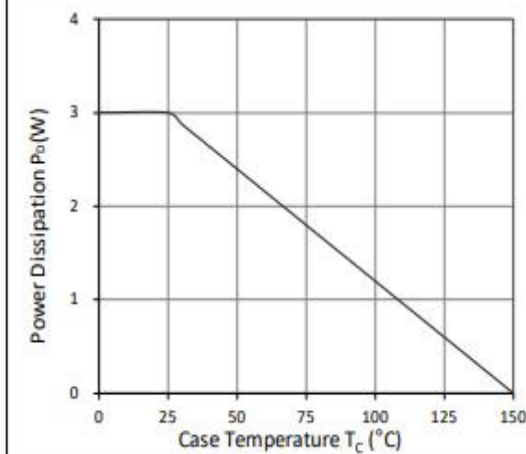


Figure 9. Power Dissipation

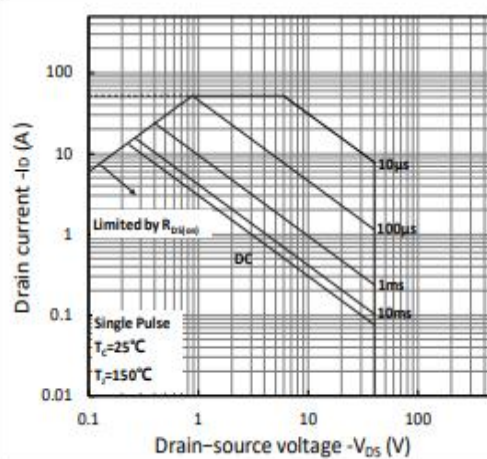


Figure 10. Safe Operating Area

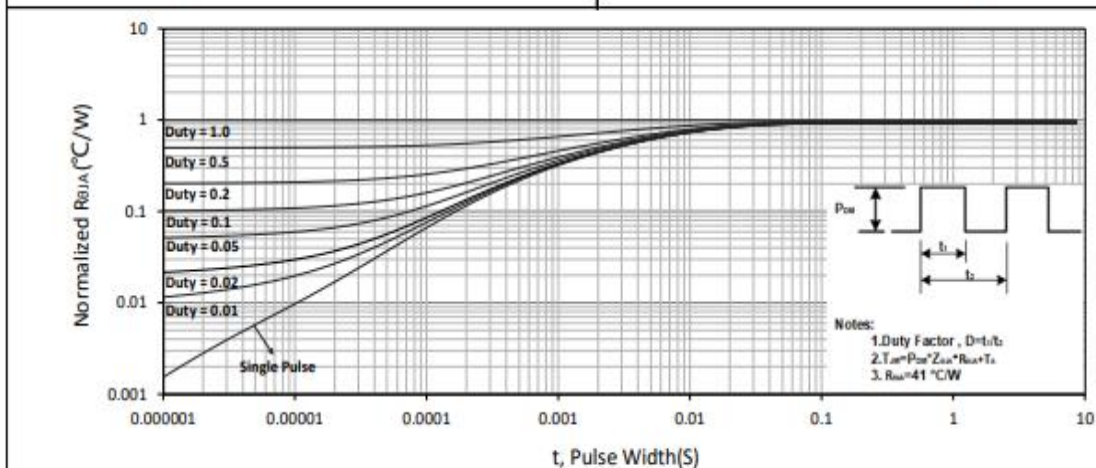
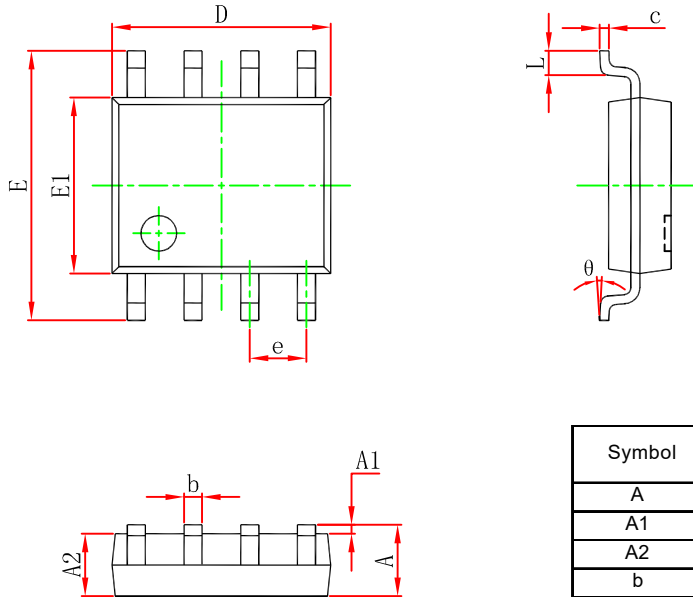


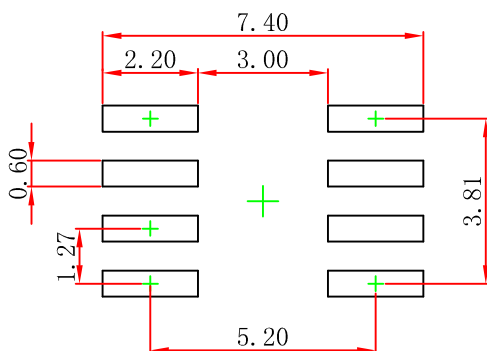
Figure 11. Normalized Maximum Transient Thermal Impedance

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: ± 0.05 mm.
3. The pad layout is for reference purposes only.