General Description

The WSP4800 is the highest performance trench N-ch MOSFET with extreme high cell density,which provide excellent RDSON and gate chargens for most of the synchronous buck converter applications .

The WSP4800 meet the RoHS and Green Product requirement,100% EAS guaranteed with full function reliability approved.

Product Summery

BVDSS	RDSON	ID
40V	32mΩ	6.0A

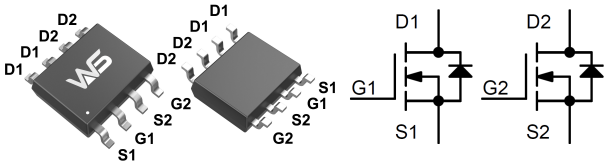
Applicatio

- Power Management in Note book.
- Battery Powered System.
- Industrial DC/DC Conversion Circuits

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- 100% EAS Guaranteed
- Green Device Available

SOP-8 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current, V_{GS} @ 10V	6.0	A
I_D@T_C=70℃	Continuous Drain Current, V_{GS} @ 10V	5.4	A
I_{DM}	Pulsed Drain Current[a]	28	A
P_D@T_A=25℃	Total Power Dissipation T_A=25°C	1.5	A
P_D@T_A=70℃	Total Power Dissipation T_A=70°C	1.28	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient[b]	---	110	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	62.5	℃/W

Note a：Pulse width limited by max. junction temperature.
Note b：Surface Mounted on 1in^2 pad area, t =999sec.
Note c：UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature T_j=25°C).

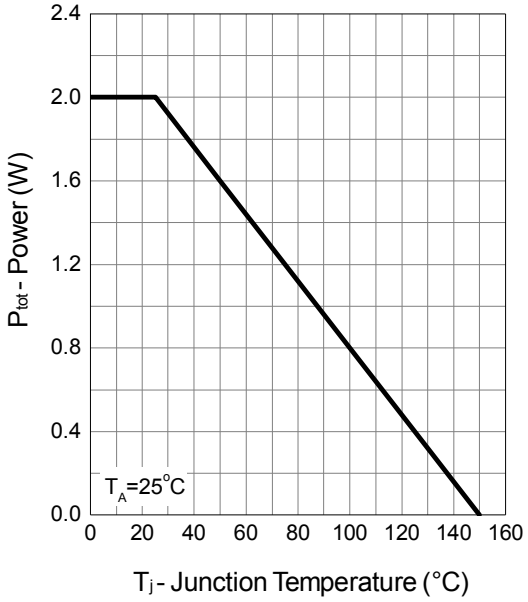
Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	40	---	---	V
$R_{DS(ON)}$[c]	Static Drain-Source On-Resistance[2]	V_{GS}=10V , I_D=6.0A	---	32	35	mΩ
		V_{GS}=4.5V , I_D=5.0A	---	36	40	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1.0	1.6	2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V , V_{GS}=0V , T_J=25℃	---	---	1	uA
		V_{DS}=24V , V_{GS}=0V , T_J=55℃	---	---	30	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
Q_g[d]	Total Gate Charge (4.5V)	V_{DS}=20V , V_{GS}=4.5V , I_D=6A	---	7.5	---	nC
Q_{gs}	Gate-Source Charge		---	3.24	---	
Q_{gd}	Gate-Drain Charge		---	2.75	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=20V,V_{GEN}=10V,R_G=6Ω , I_D=1A,R_L=20Ω.	---	7.8	---	ns
T_r	Rise Time		---	6.9	---	
$T_{d(off)}$	Turn-Off Delay Time		---	22.4	---	
T_f	Fall Time		---	4.8	---	
C_{iss}	Input Capacitance	V_{DS}=20V , V_{GS}=0V , f=1MHz	---	815	---	pF
C_{oss}	Output Capacitance		---	95	---	
C_{rss}	Reverse Transfer Capacitance		---	60	---	

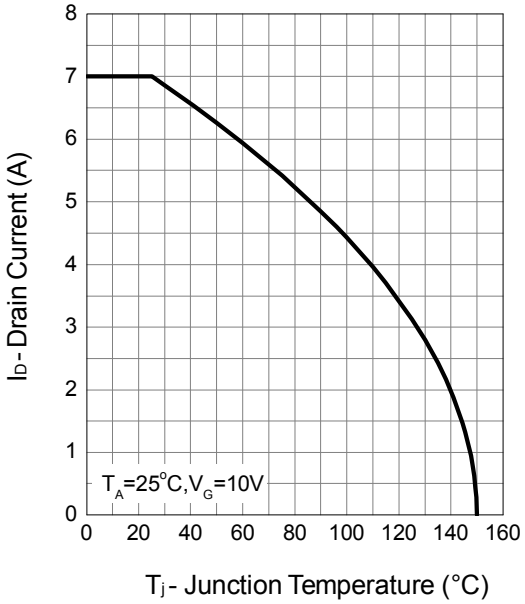
Note c：Pulse test ; pulse width≤300μs, duty cycle≤2%.
Note d：Guaranteed by design, not subject to production testing.

Typical Characteristics

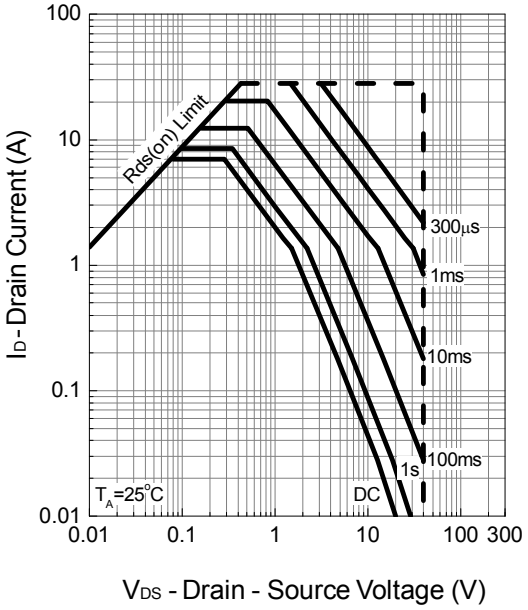
Power Dissipation



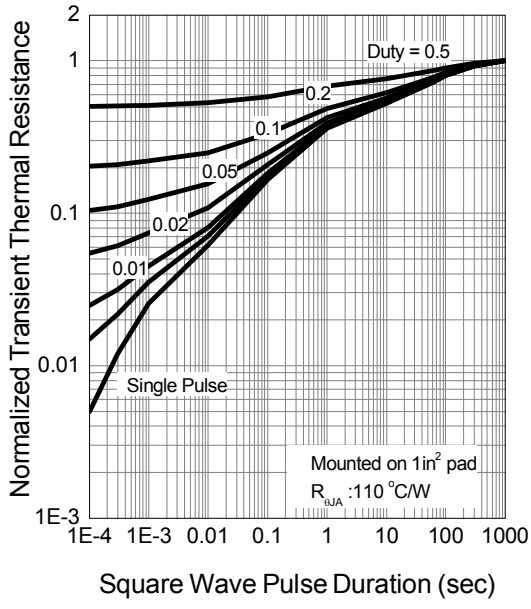
Drain Current



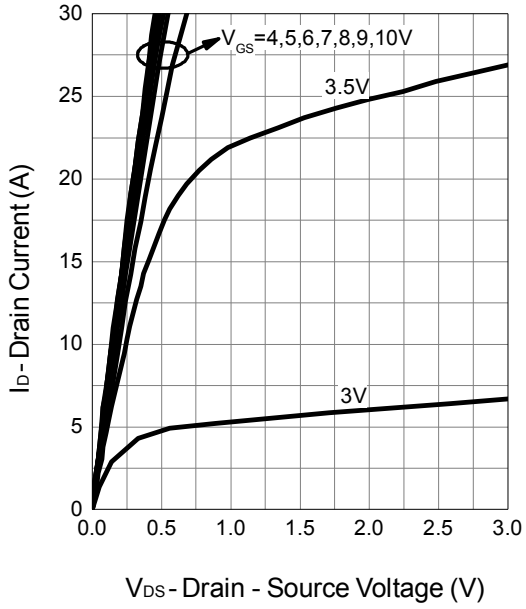
Safe Operation Area



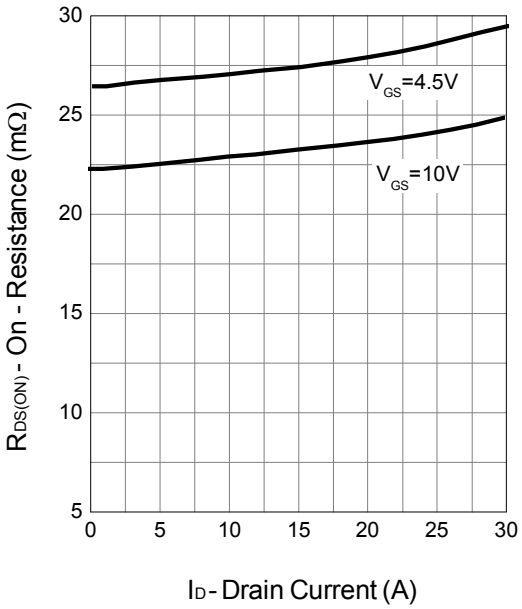
Thermal Transient Impedance



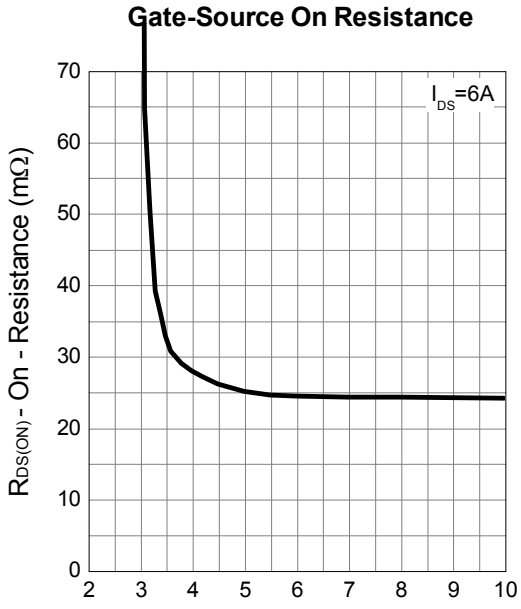
Output Characteristics



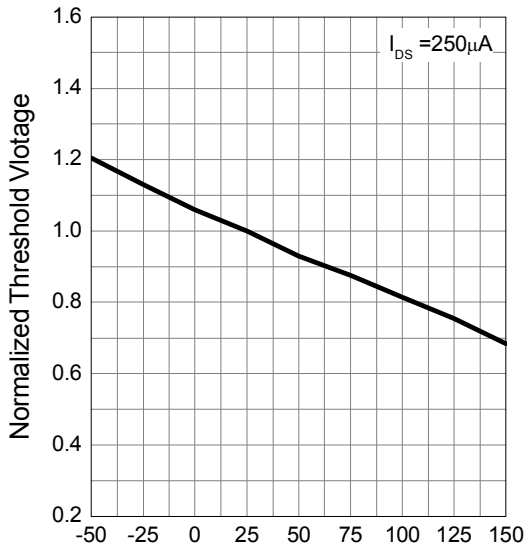
Drain-Source On Resistance



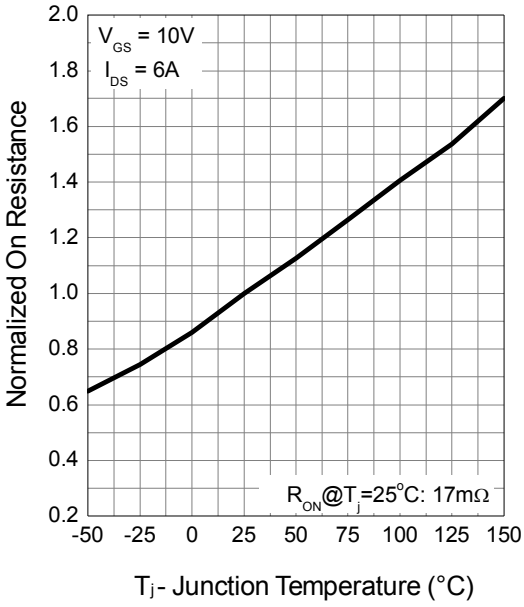
Gate-Source On Resistance



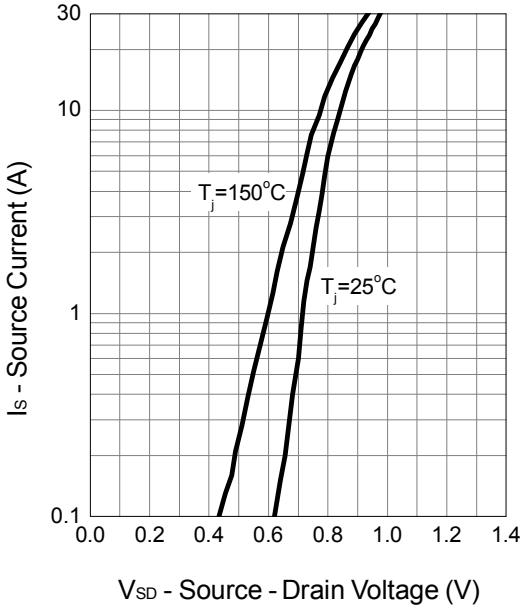
Gate Threshold Voltage



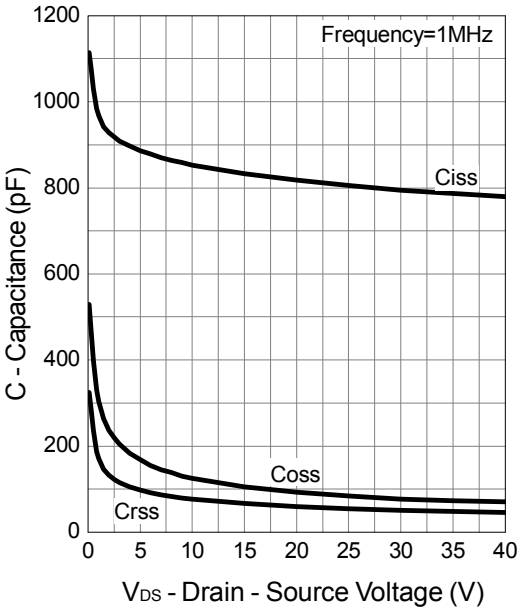
Drain-Source On Resistance



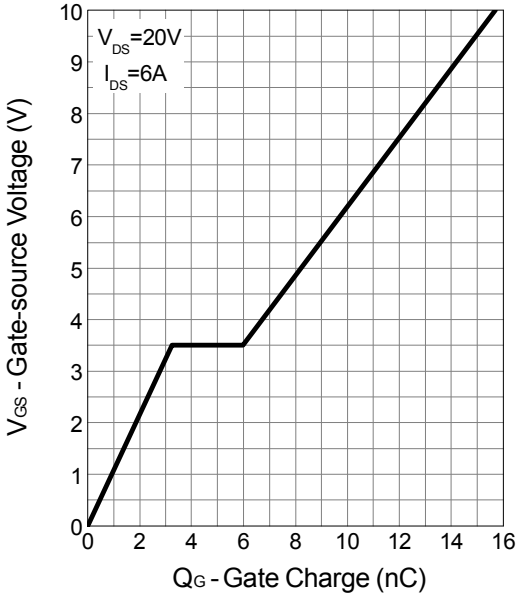
Source-Drain Diode Forward



Capacitance



Gate Charge



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