SPP7411
P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP7411 is the P-Channel logic enhancement mode power field effect transistors are produced using super high cell density , DMOS trench technology. The SPP7411 has been designed specifically to improve the overall efficiency of DC/DC converters using either synchronous or conventional switching PWM controllers. It has been optimized for low gate charge, low $R_{DS(ON)}$ and fast switching speed.

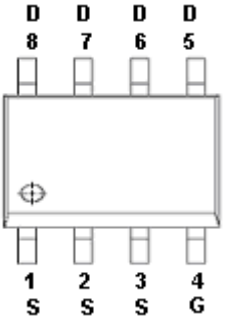
APPLICATIONS

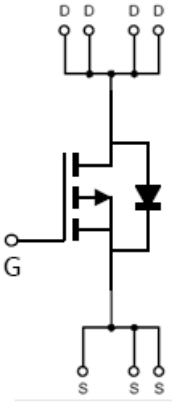
- Powered System
- DC/DC Converter
- Load Switch
- Power Tool
- Motor Control

FEATURES

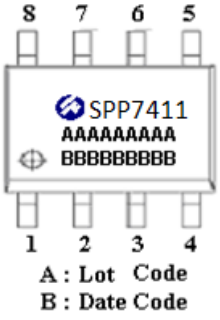
- -100V/-3A,$R_{DS(ON)}$=200mΩ@V_{GS}=-10V
- -100V/-1A,$R_{DS(ON)}$=220mΩ@V_{GS}=-4.5V
- High density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOP-8 package design

PIN CONFIGURATION(SOP–8)





PART MARKING



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PIN DESCRIPTION

Pin	Symbol	Description
1	S	Source
2	S	Source
3	S	Source
4	G	Gate
5	D	Drain
6	D	Drain
7	D	Drain
8	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP7411S8RGB	SOP-8	SPP7411

※ SPP7411S8RGB : 13" Tape Reel ; Pb – Free ; Halogen - Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	-100	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	-3.0	A
	T_A=70℃		-2.0	
Pulsed Drain Current		I_{DM}	-20	A
Power Dissipation	T_A=25℃	P_D	2.8	W
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	62.5	℃/W

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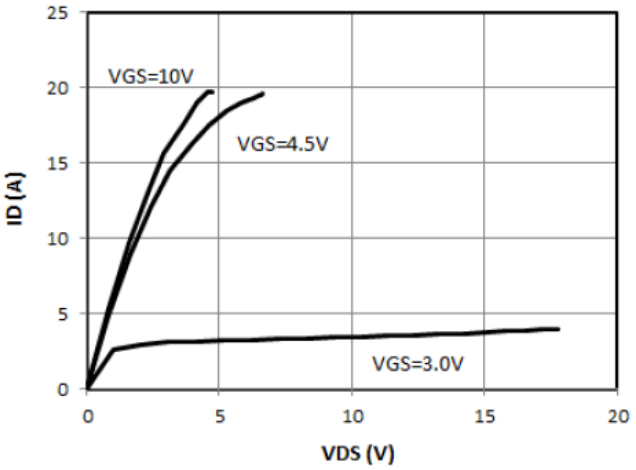
ELECTRICAL CHARACTERISTICS
(T_A=25℃ Unless otherwise noted)

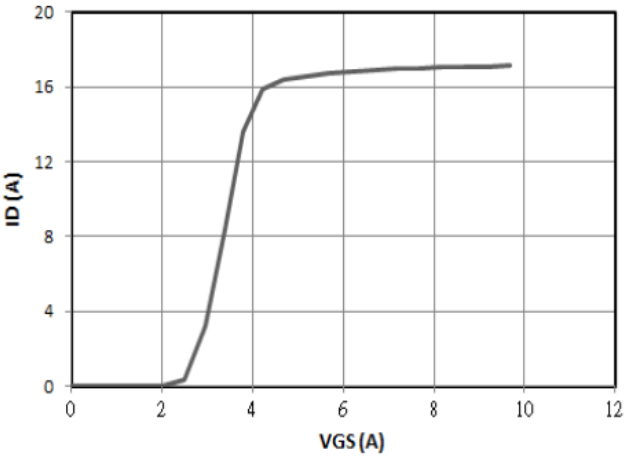
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	-1.0		-3.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-80V,V_{GS}=0V T_J=25℃			-1.0	uA
		V_{DS}=-80V,V_{GS}=0V T_J=55℃			-100	
Continuous-Source Current	I_S	V_D=V_G=0V, Force Cuent			-8.5	A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-3A			200	mΩ
		V_{GS}=-4.5V,I_D=-1A			220	
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V			-1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-50V, V_{GS}=-10V,I_D=-1A		18		nC
Gate-Source Charge	Q_{gs}			4.25		
Gate-Drain Charge	Q_{gd}			7.0		
Input Capacitance	C_{iss}	V_{DS}=-30,V_{GS}=0V f=1MHz		1310		pF
Output Capacitance	C_{oss}			88		
Reverse Transfer Capacitance	C_{rss}			55		
Turn-On Time	$t_{d(on)}$	V_{DD}=-30V, I_D=-1.5A, V_{GEN}=-10V, R_G=6Ω		8.5		nS
	t_r			12		
Turn-Off Time	$t_{d(off)}$			50		
	t_f			35		

TYPICAL CHARACTERISTICS

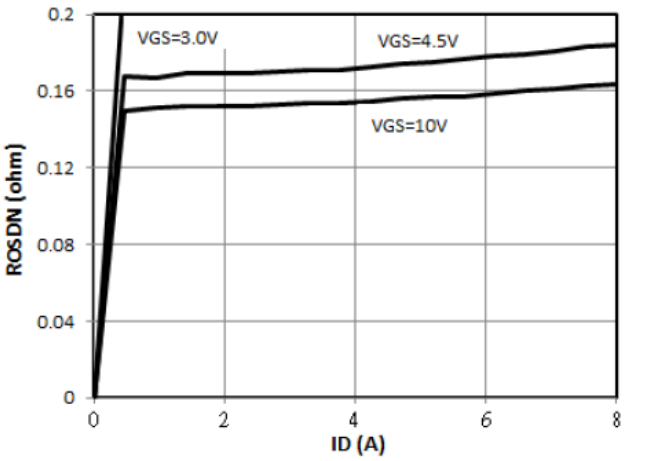
TYPICAL OUTPUT CHARACTERISTICS



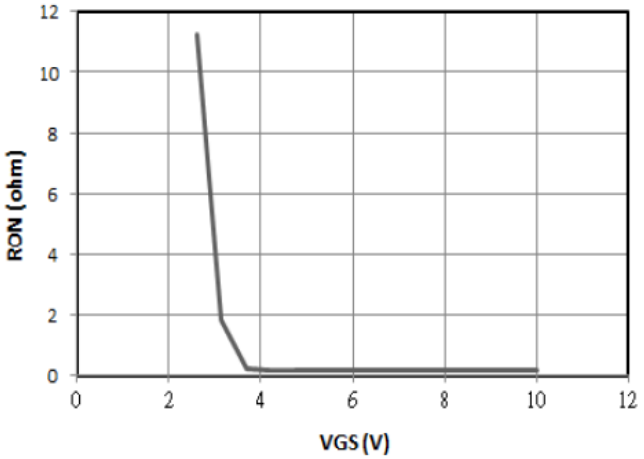
TYPICAL TRANSFER CHARACTERISTICS



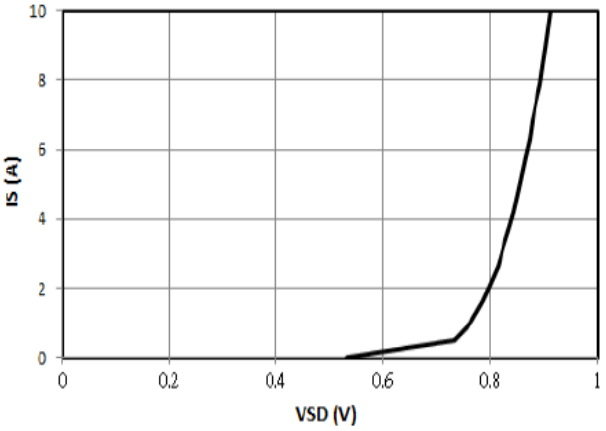
ON-RESISTANCE VS. DRAIN CURRENT ANDGATE VOLTAGE



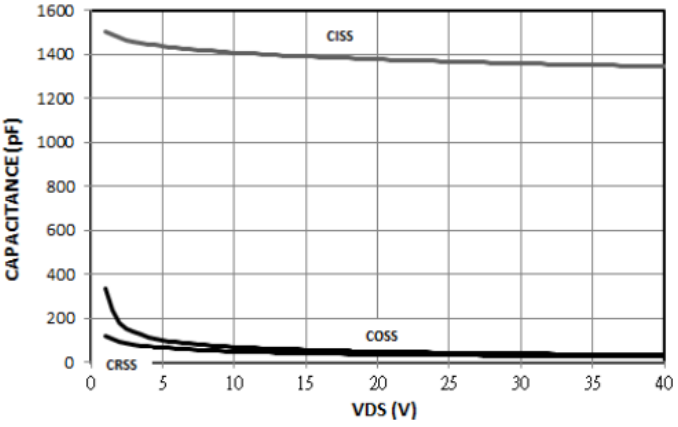
ON-RESISTANCE VS. GATE-SOURCE VOLTAGE



TYPICAL SOURCE-DRAIN DIODE FORWARD VOLTAGE

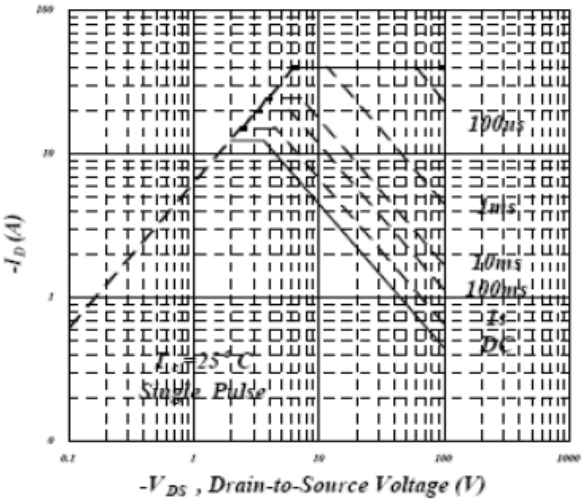


TYPICAL CAPACITANCE VS. DRAIN-SOURCE VOLTAGE

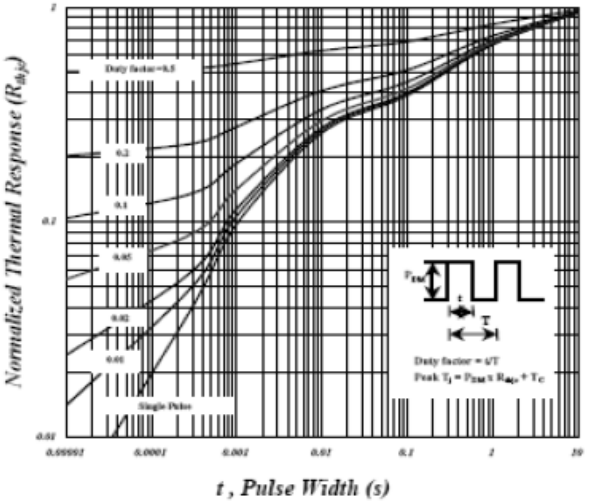


TYPICAL CHARACTERISTICS

Maximum Safe Operating Area



Effective Transient Thermal Impedance



7F-2, No.3-1, Park Street
NanKang District (NKSP), Taipei, Taiwan 115
Phone: 886-2-2655-8178
Fax: 886-2-2655-8468
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