SPP9917
P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP9917 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application, notebook computer power management and other battery powered circuits where high-side switching.

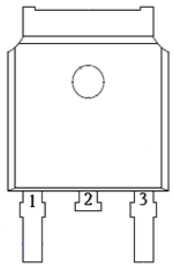
APPLICATIONS

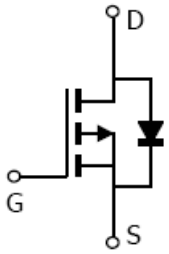
- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

FEATURES

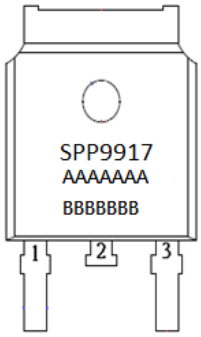
- -40V/-18A,$R_{DS(ON)}$=13mΩ@V_{GS}=-10V
- -40V/- 12A,$R_{DS(ON)}$=20mΩ@V_{GS}=-4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability
- TO-252 package design

PIN CONFIGURATION(TO–252)





PART MARKING



SPP9917
P-Channel Enhancement Mode MOSFET

PIN DESCRIPTION

Pin	Symbol	Description
1	G	Gate
2	D	Drain
3	S	Source

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP9917T252RGB	TO-252-2L	SPP9917

※ SPP9917T2528RGB ; Tape Reel ; Pb – Free ; Halogen – Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

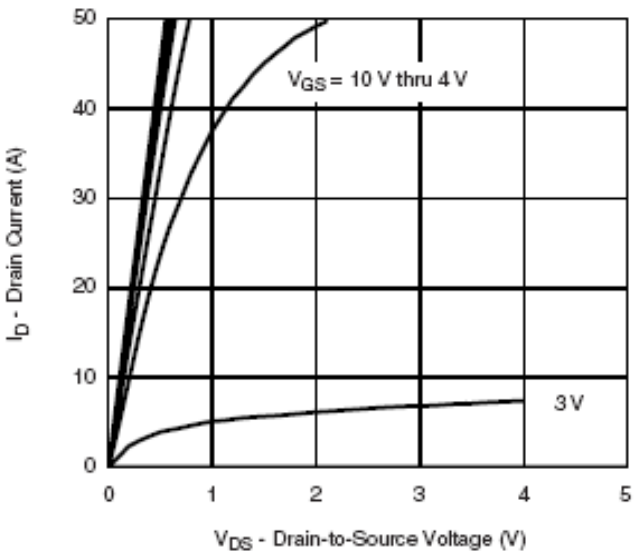
Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	-40	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_C=25℃	I_D	-52	A
	T_C=100℃		-32	
Pulsed Drain Current		I_{DM}	-105	A
Single Pulse Avalanche Energy		E_{AS}	146	mJ
Power Dissipation	T_C=25℃	P_D	52	W
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Case		$R_{\theta JC}$	2.4	℃/W

ELECTRICAL CHARACTERISTICS

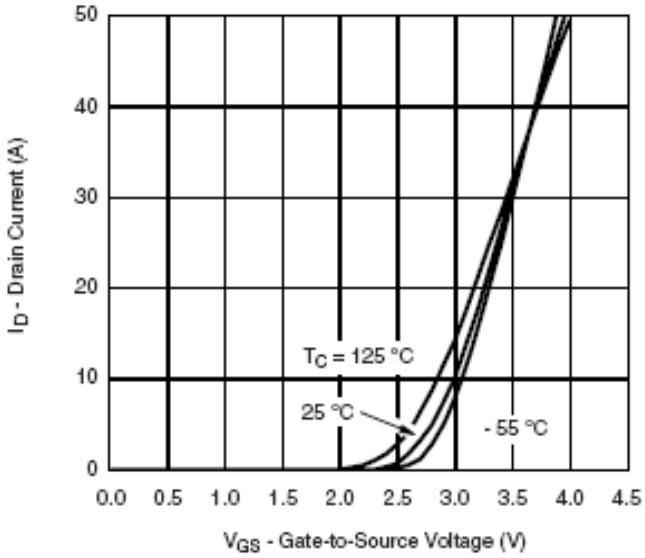
(T_A=25℃ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250uA	-0.8		-2.5	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-32V,V_{GS}=0V			-1	uA
		V_{DS}=-32V,V_{GS}=0V T_J=85℃			-10	
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V,I_D=-18A		0.01	0.013	Ω
		V_{GS}=-4.5V,I_D=-12A		0.015	0.020	
Forward Transconductance	gfs	V_{DS}=--5V,I_D=-18A		24		S
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V			-1.0	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-20V,V_{GS}=-4.5V I_D=-12.0A		28		nC
Gate-Source Charge	Q_{gs}			7.8		
Gate-Drain Charge	Q_{gd}			7.5		
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V f=1MHz		3500		pF
Output Capacitance	C_{oss}			323		
Reverse Transfer Capacitance	C_{rss}			222		
Turn-On Time	$t_{d(on)}$	V_{DD}=-15V,I_D=-1.0A, V_{GS}=-10.0V, R_G=3.3Ω		40		nS
	t_r			35		
Turn-Off Time	$t_{d(off)}$			100		
	t_f			9.5		

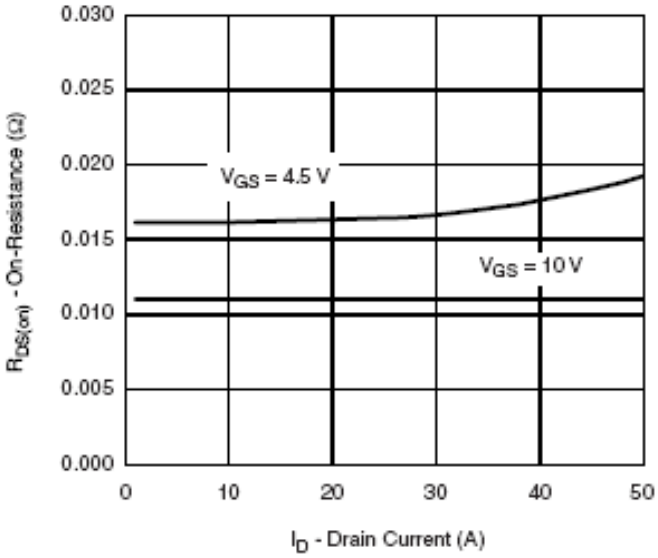
TYPICAL CHARACTERISTICS



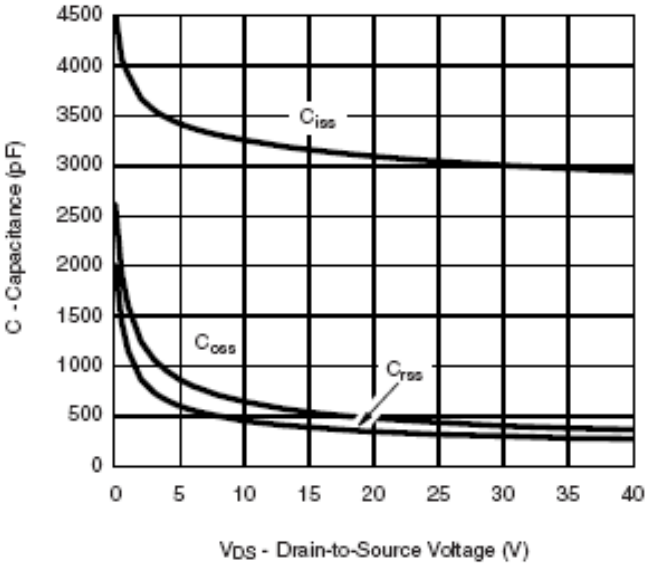
Output Characteristics



Transfer Characteristics

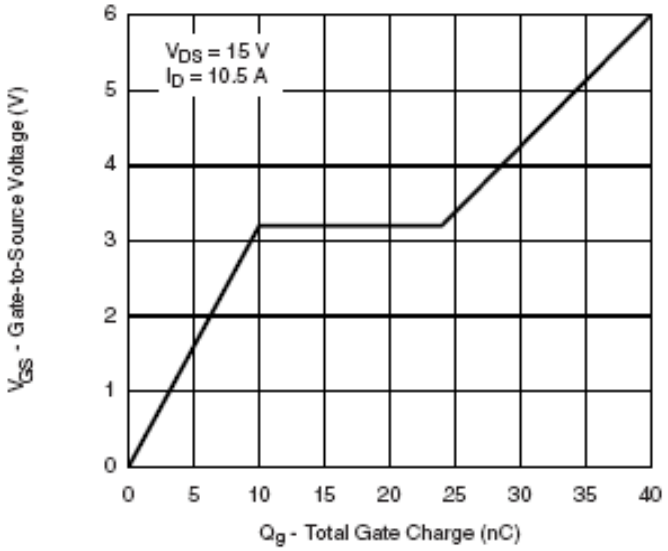


On-Resistance vs. Drain Current

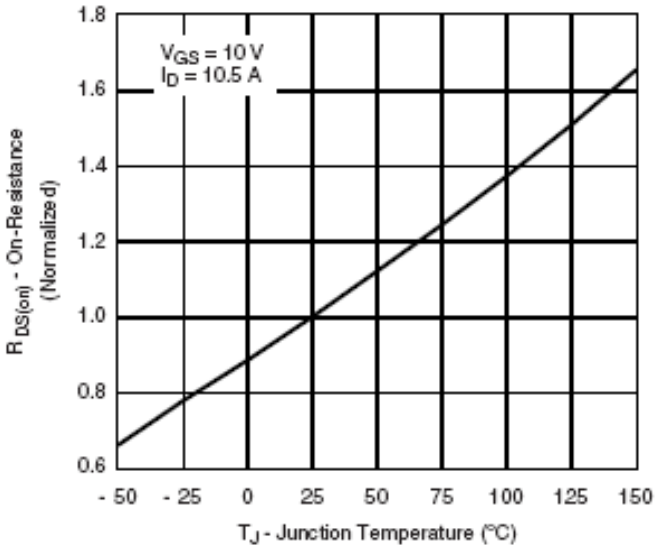


Capacitance

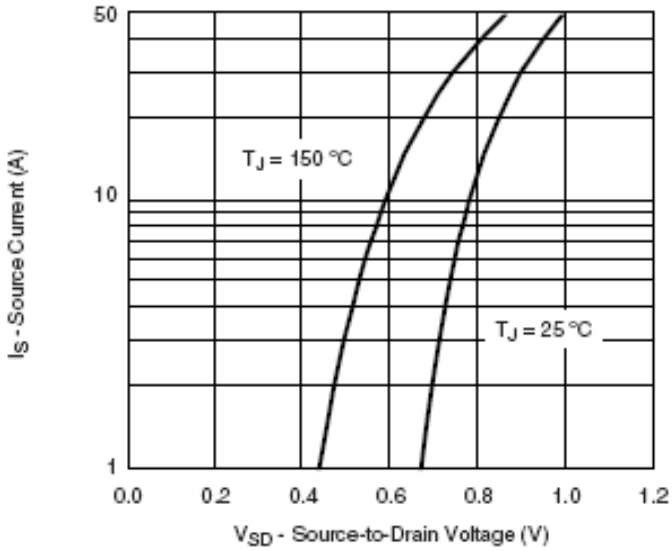
TYPICAL CHARACTERISTICS



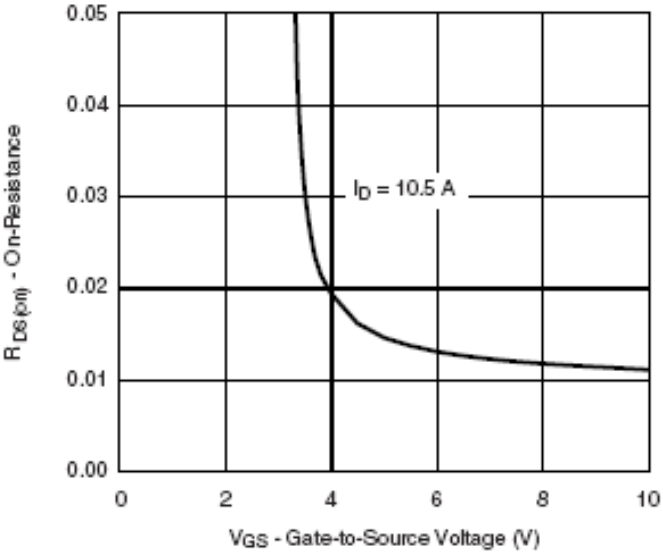
Gate Charge



On-Resistance vs. Junction Temperature

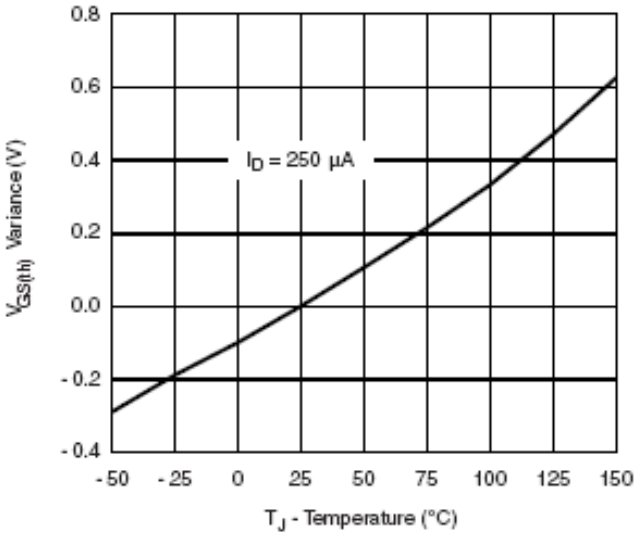


Source-Drain Diode Forward Voltage

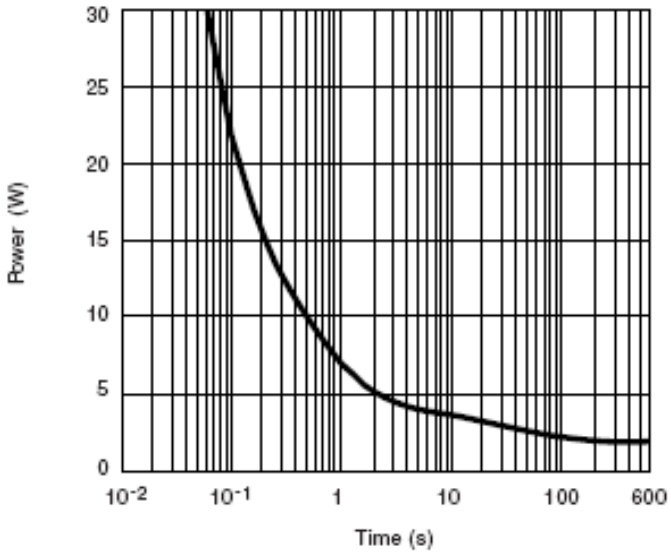


On-Resistance vs. Gate-to-Source Voltage

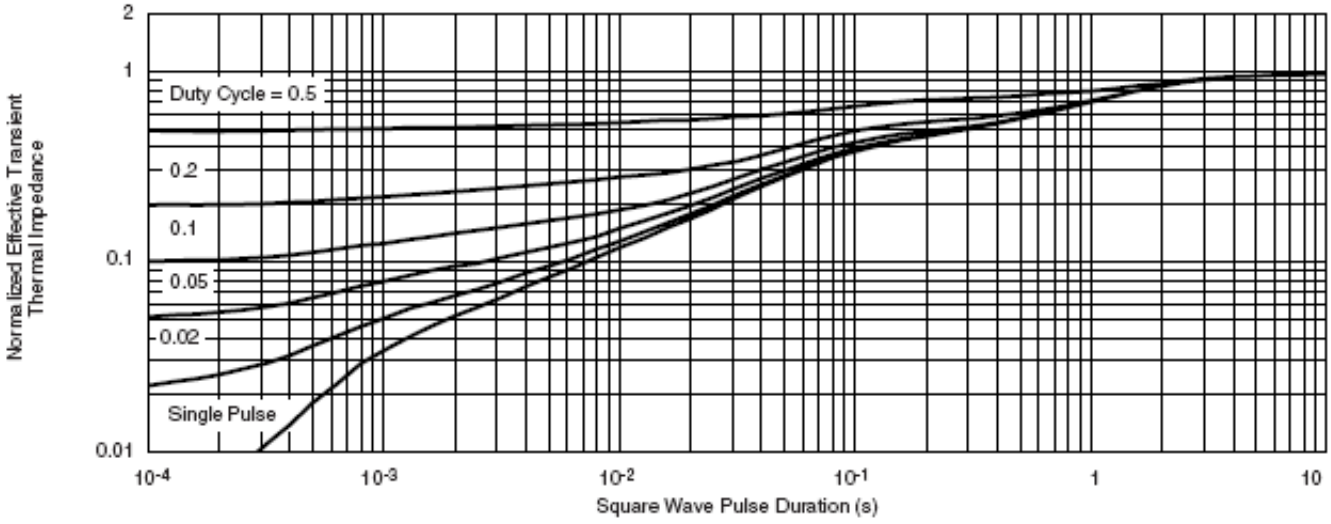
TYPICAL CHARACTERISTICS



Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot

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