



SPP1013

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP1013 is the P-Channel 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 and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching , low in-line power loss, and resistance to transients are needed.

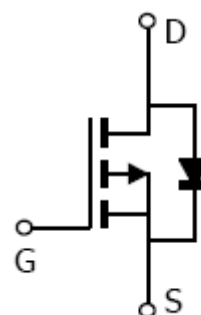
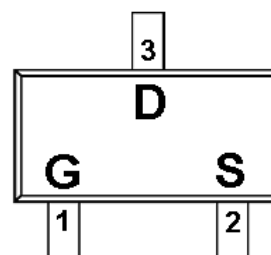
FEATURES

- ◆ P-Channel
 - 20V/0.45A, $R_{DS(ON)}=0.52\Omega @ V_{GS}=-4.5V$
 - 20V/0.35A, $R_{DS(ON)}=0.70\Omega @ V_{GS}=-2.5V$
 - 20V/0.25A, $R_{DS(ON)}=0.95\Omega @ V_{GS}=-1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-523 (SC-89) package design

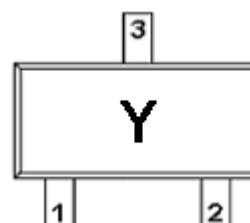
APPLICATIONS

- Drivers : Relays/Solenoids/Lamps/Hammers
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers

PIN CONFIGURATION(SOT-523 / SC-89)



PART MARKING





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PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP1013S52RGB	SOT-523	Y

※ SPP1013S52RGB : Tape Reel ; Pb – Free, Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V _{DSS}	-20	V
Gate –Source Voltage	V _{GSS}	±12	V
Continuous Drain Current(T _J =150°C)	I _D	-0.45	A
		-0.35	
Pulsed Drain Current	I _{DM}	-1.0	A
Continuous Source Current(Diode Conduction)	I _S	-0.3	A
Power Dissipation	P _D	0.27	W
		0.16	
Operating Junction Temperature	T _J	-55/150	°C
Storage Temperature Range	T _{STG}	-55/150	°C



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

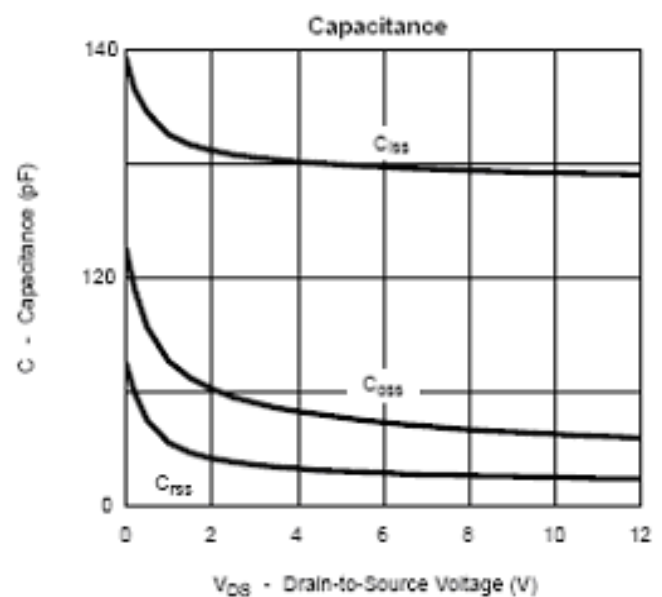
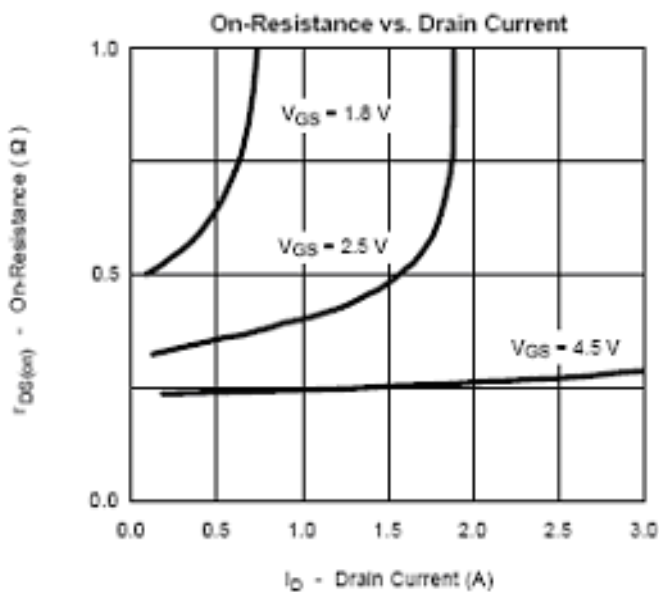
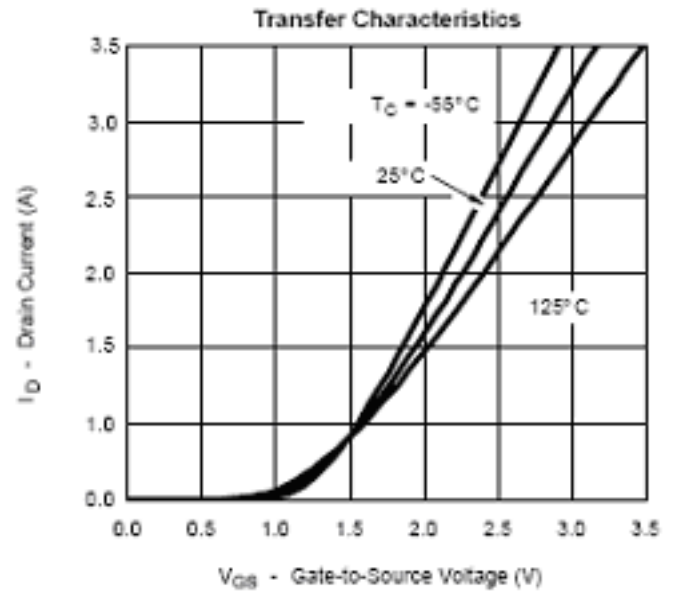
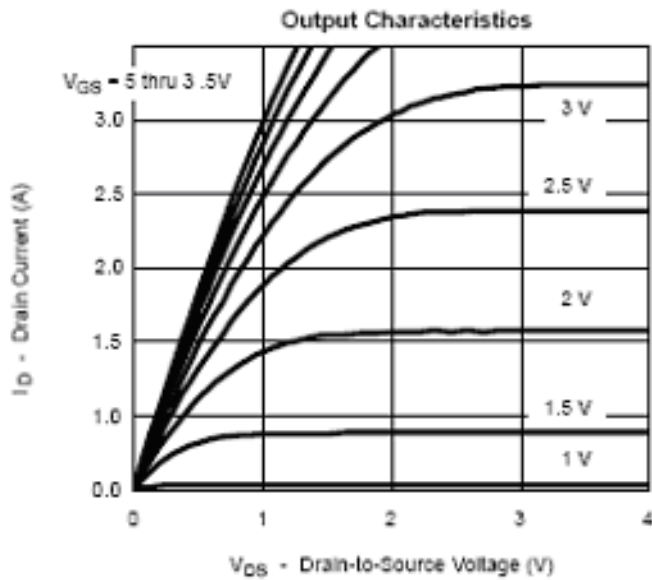
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250uA	-20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-0.35		-0.8	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	uA
		V _{DS} =-20V, V _{GS} =0V T _J =55°C			-5	
On-State Drain Current	I _{D(on)}	V _{DS} ≤ -4.5V, V _{GS} = -5V	-0.7			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-0.45A		0.42	0.52	Ω
		V _{GS} =-2.5V, I _D =-0.35A		0.58	0.70	
		V _{GS} =-1.8V, I _D =-0.25A		0.75	0.95	
Forward Transconductance	g _{fs}	V _{DS} =-10V, I _D =-0.25A		0.4		S
Diode Forward Voltage	V _{SD}	I _S =-0.15A, V _{GS} =0V		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V I _D =-0.6A		1.5	2.0	nC
Gate-Source Charge	Q _{gs}			0.3		
Gate-Drain Charge	Q _{gd}			0.35		
Turn-On Time	t _{d(on)}	V _{DD} =-10V, R _L =10Ω I _D =-0.4A V _{GEN} =-4.5V, R _G =6Ω		5	10	nS
	t _r			15	25	
Turn-Off Time	t _{d(off)}			8	15	
	t _f			1.4	1.8	



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TYPICAL CHARACTERISTICS

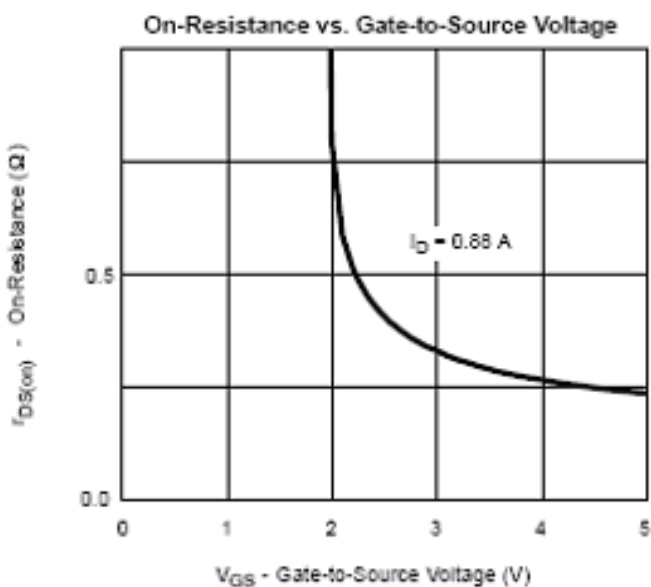
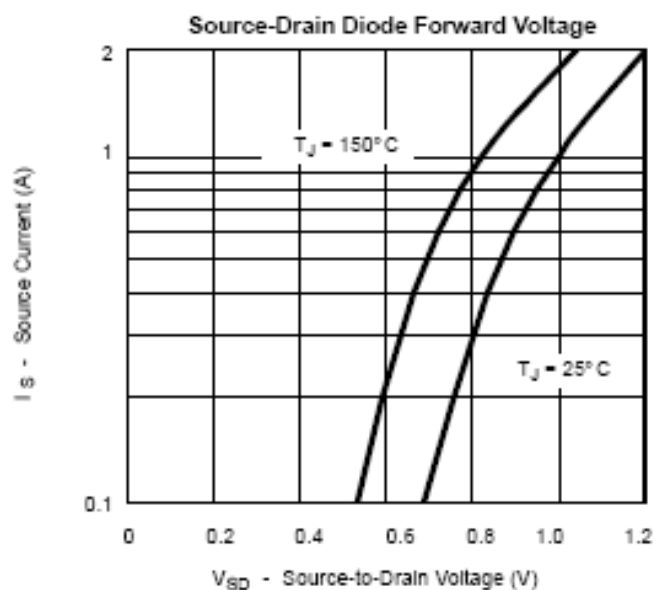
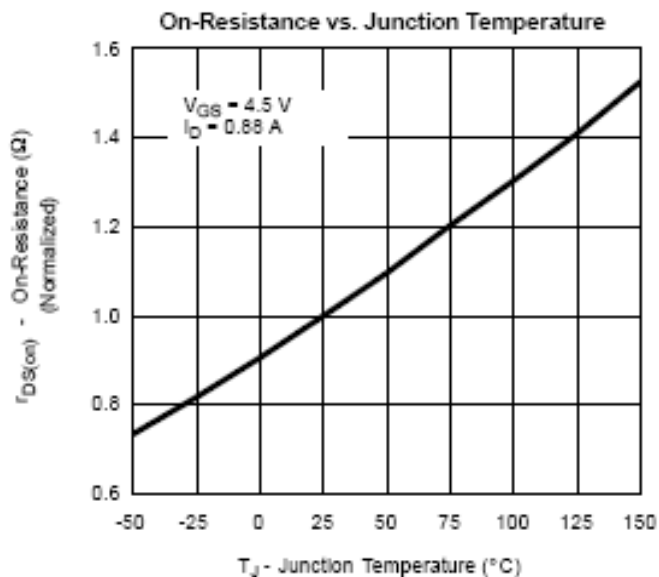
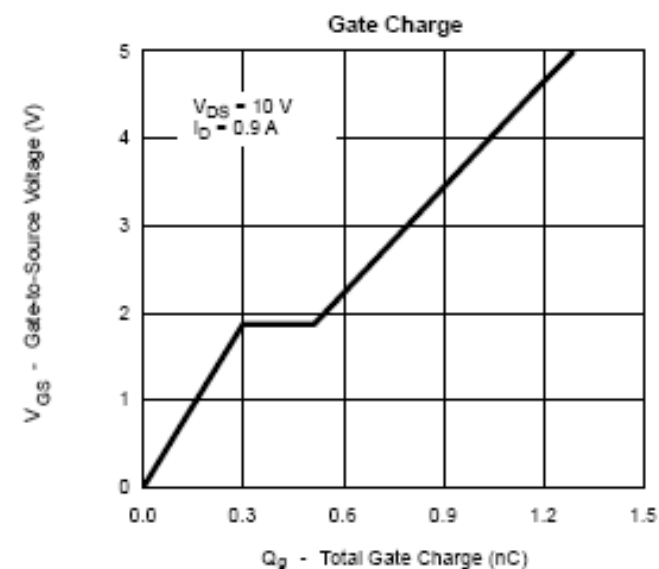




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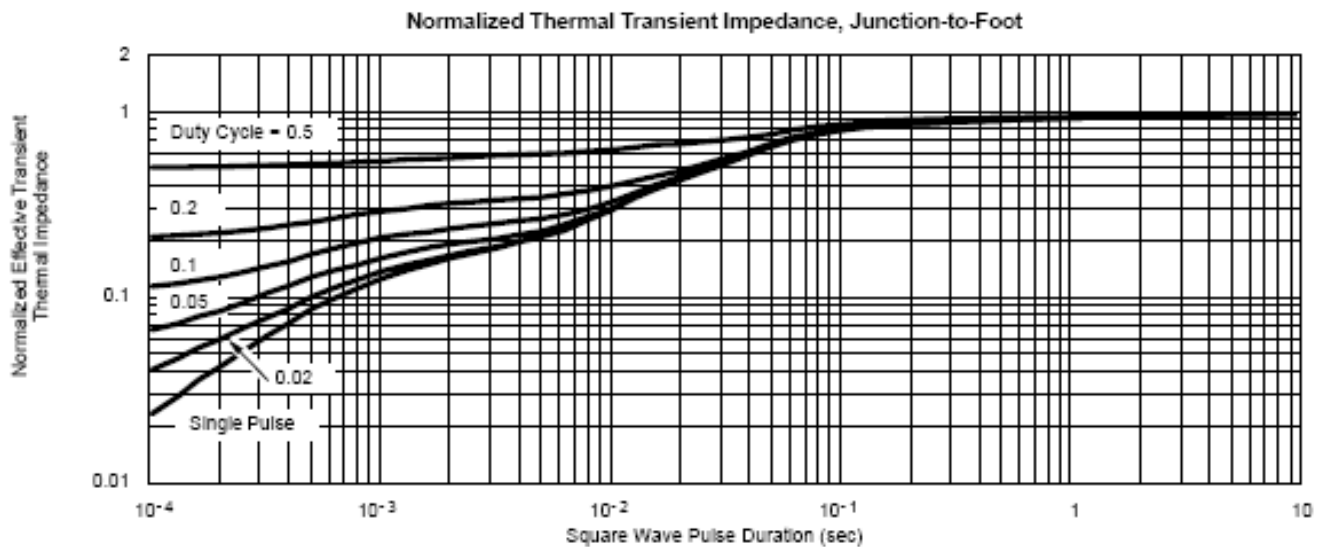
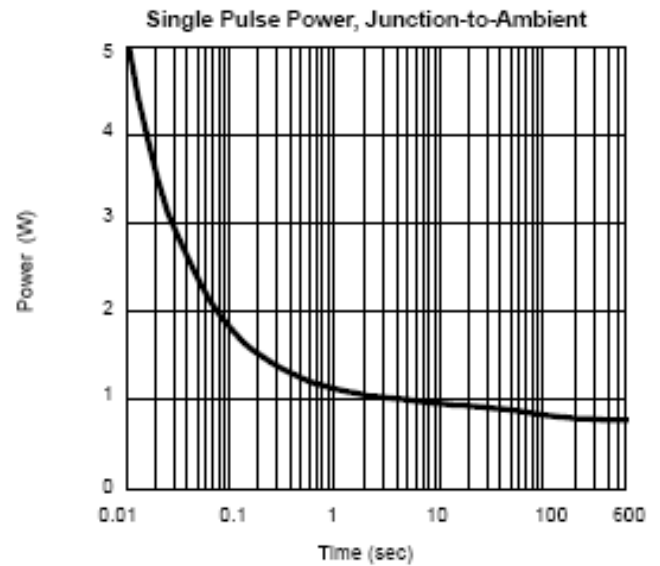
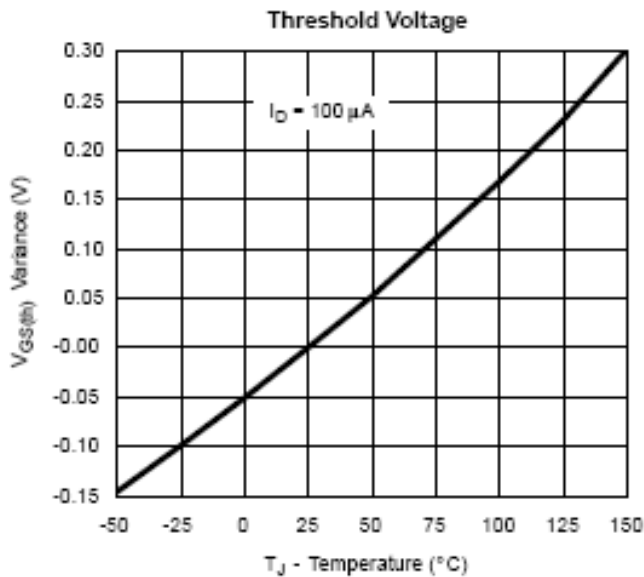




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TYPICAL CHARACTERISTICS





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