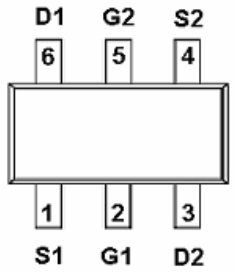
SPP1023
Dual P-Channel Enhancement Mode MOSFET

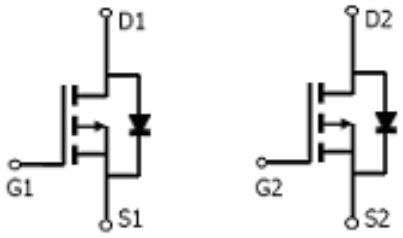
DESCRIPTION
The SPP1023 is the Dual P-Channel enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. These devices are particularly 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.

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

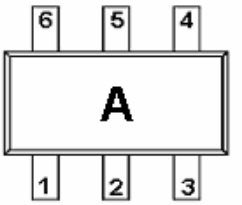
FEATURES
- P-Channel
  -20V/0.45A,$R_{DS(ON)}$= 0.52Ω@V_{GS}=-4.5V
  -20V/0.35A,$R_{DS(ON)}$= 0.70Ω@V_{GS}=-2.5V
  -20V/0.25A,$R_{DS(ON)}$= 0.95Ω@V_{GS}=-1.8V
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- SOT-563 (SC-89-6L) package design

PIN CONFIGURATION(SOT-563 / SC-89-6L)





PART MARKING



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PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP1023S56RG	SOT-563	A

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)
※ SPP1023S56RG : Tape Reel ; Pb – Free

ABSOULTE MAXIMUM RATINGS
(T_A=25℃ 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℃)	T_A=25℃	I_D	-0.45	A
	T_A=80℃		-0.35	
Pulsed Drain Current		I_{DM}	-1.0	A
Continuous Source Current(Diode Conduction)		I_S	-0.3	A
Power Dissipation	T_A=25℃	P_D	0.35	W
	T_A=70℃		0.19	
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃

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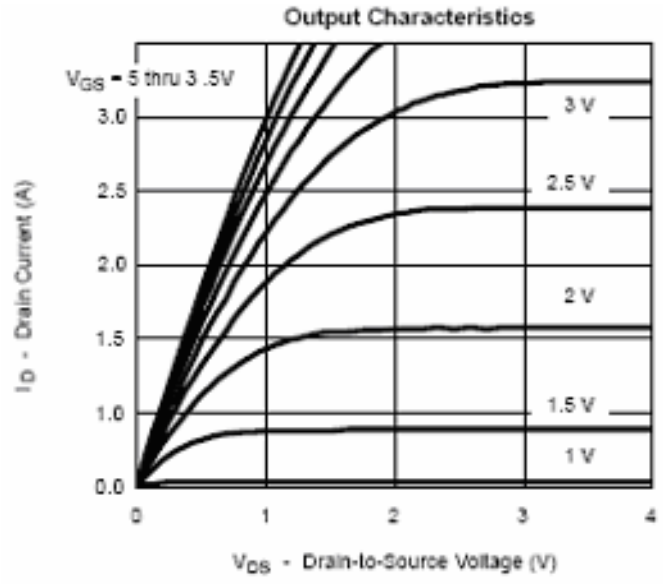
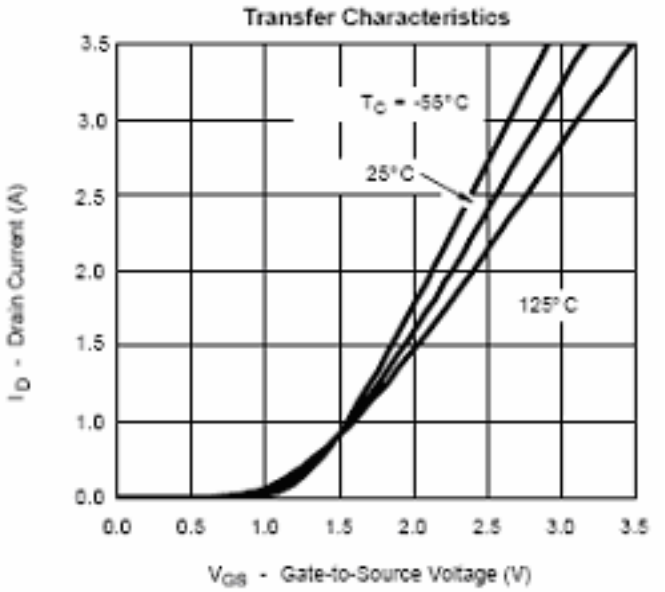
ELECTRICAL CHARACTERISTICS

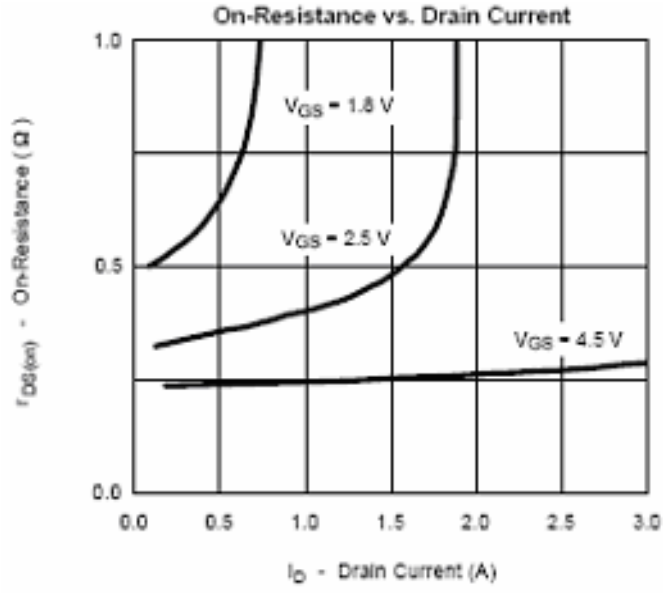
(T_A=25℃ Unless otherwise noted)

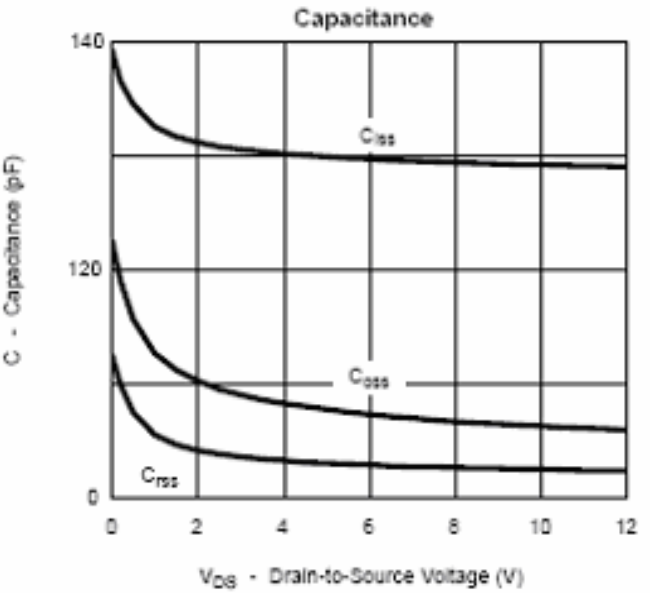
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250uA	-0.35		-0.8	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V			-1	uA
		V_{DS}=-20V,V_{GS}=0V T_J=55℃			-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	gfs	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	

TYPICAL CHARACTERISTICS



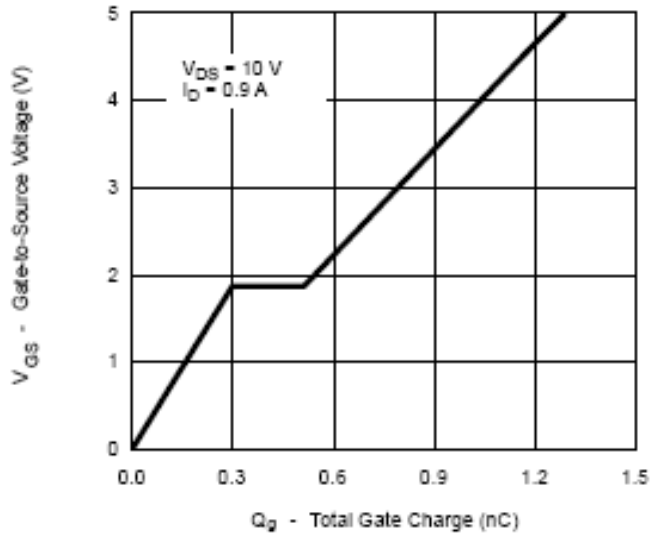




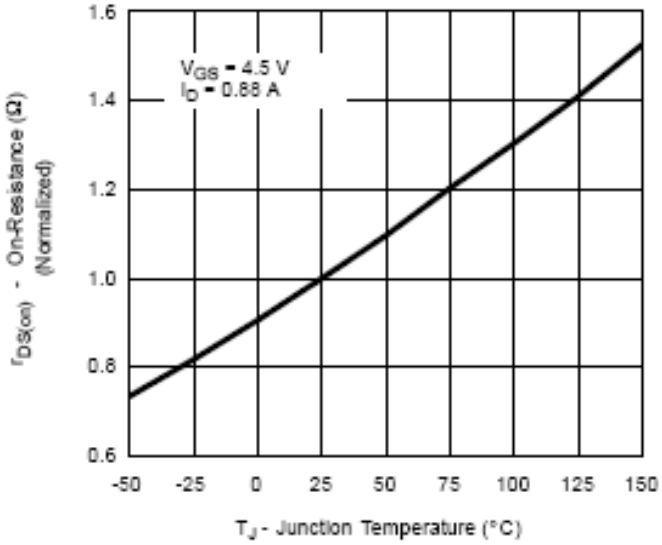


TYPICAL CHARACTERISTICS

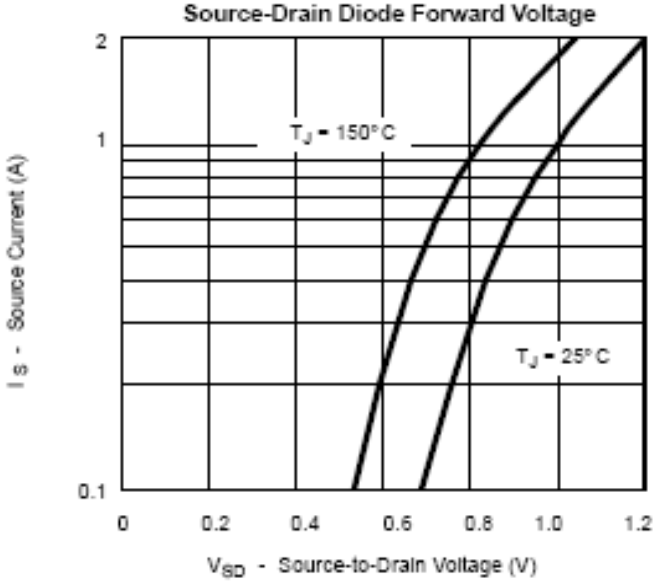
Gate Charge



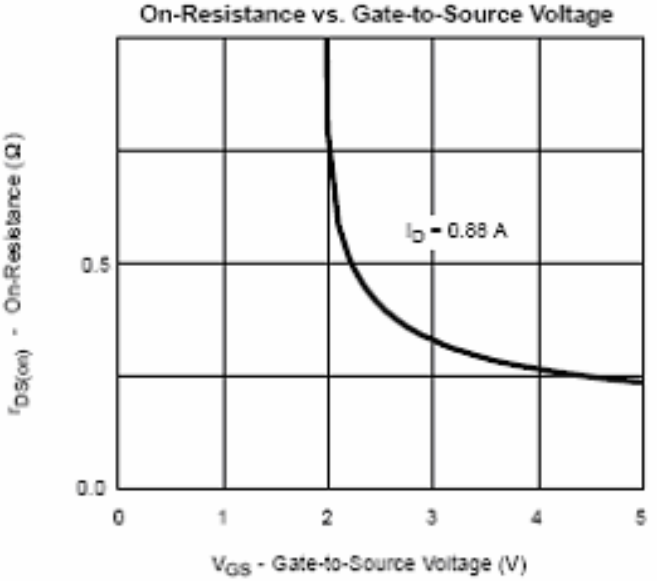
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage

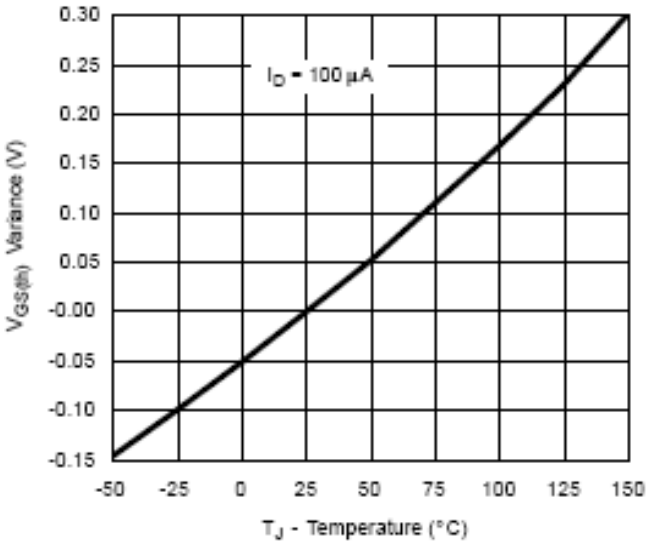


On-Resistance vs. Gate-to-Source Voltage

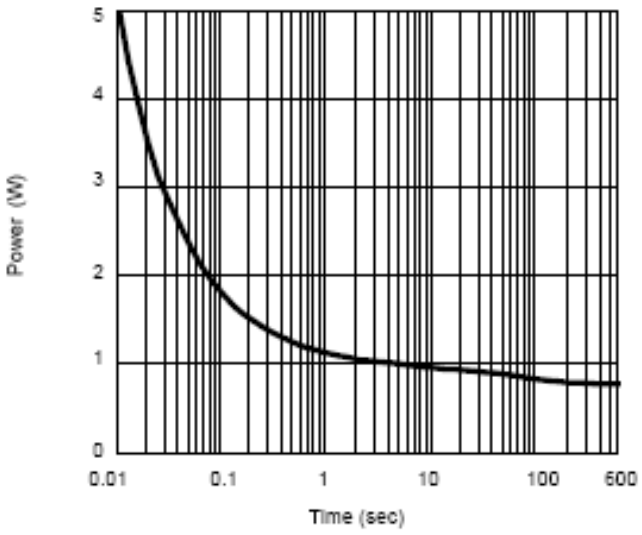


TYPICAL CHARACTERISTICS

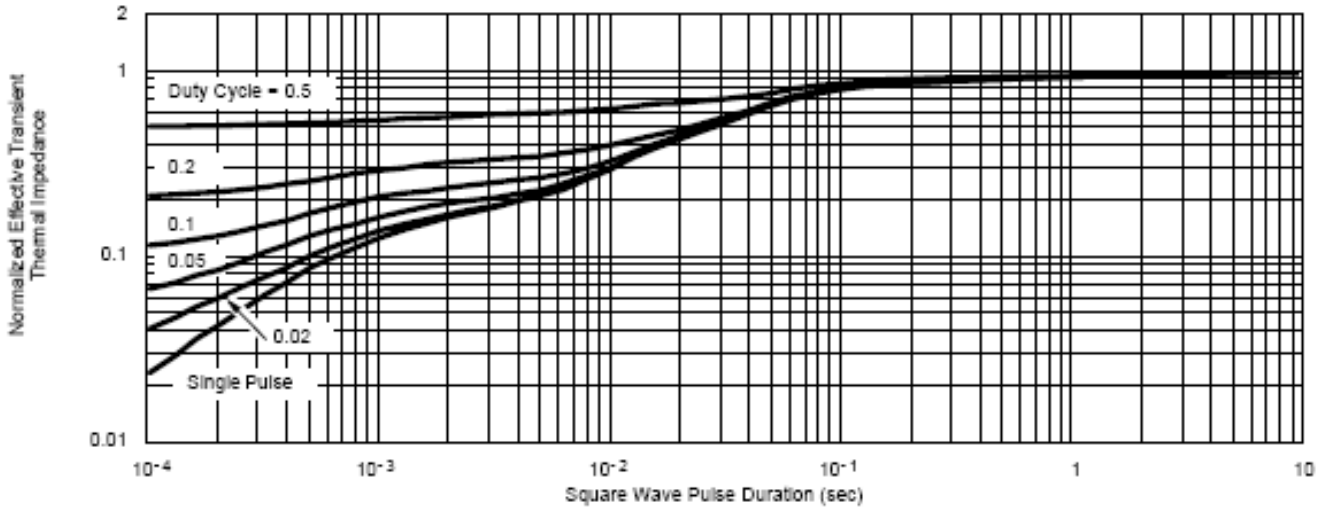
Threshold Voltage



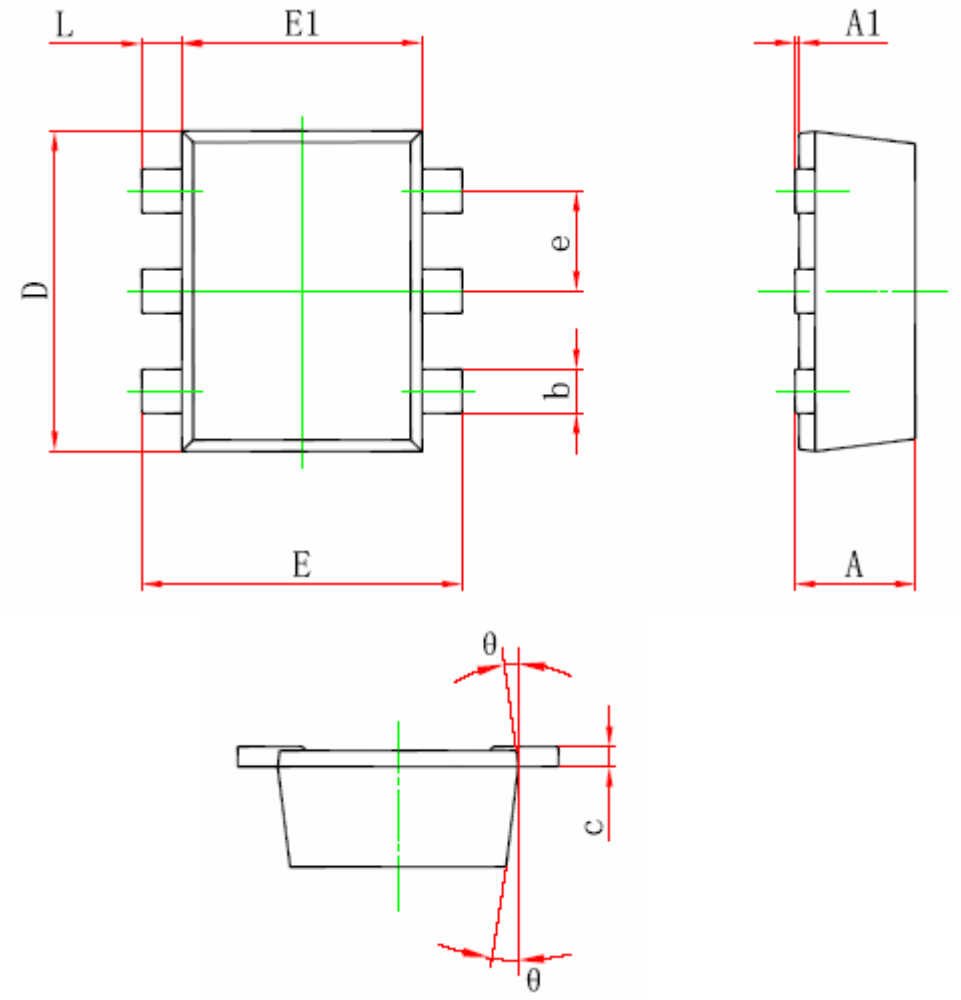
Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot



SOT-563 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
θ	7 °REF.		7 °REF.	

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SYNC Power Corporation
9F-5, No.3-2, Park Street
NanKang District (NKSP), Taipei, Taiwan 115
Phone: 886-2-2655-8178
Fax: 886-2-2655-8468
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