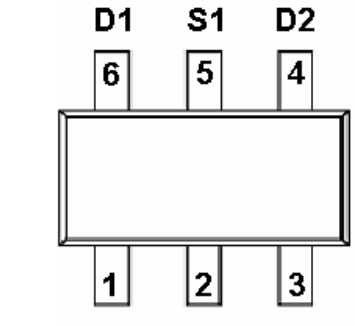
SPN6561
Dual N-Channel Enhancement Mode MOSFET

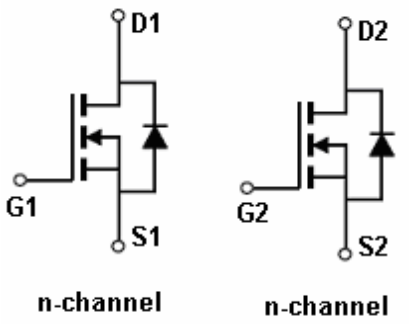
DESCRIPTION
The SPN6561 is the Dual N-Channel enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. These devices are particularly 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

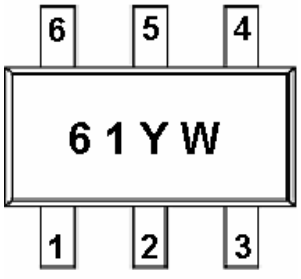
FEATURES
- N-Channel
  30V/2.8A,$R_{DS(ON)}$= 60mΩ@V_{GS}=10V
  30V/2.3A,$R_{DS(ON)}$= 80mΩ@V_{GS}=4.5V
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- SOT-23-6L package design

PIN CONFIGURATION(SOT-23-6L)





PART MARKING



Y : Year Code
W : Week Code

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PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN6561S26RG	SOT-23-6L	61YW

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)
※ SPN6561S26RG : Tape Reel ; Pb – Free

ABSOULTE MAXIMUM RATINGS

(T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_A=25℃	I_D	2.8	A
	T_A=70℃		2.3	
Pulsed Drain Current		I_{DM}	10	A
Continuous Source Current(Diode Conduction)		I_S	1.25	A
Power Dissipation	T_A=25℃	P_D	1.15	W
	T_A=70℃		0.75	
Operating Junction Temperature		T_J	-55/150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient	T ≤ 10sec	$R_{\theta JA}$	50	℃/W
	Steady State		90	

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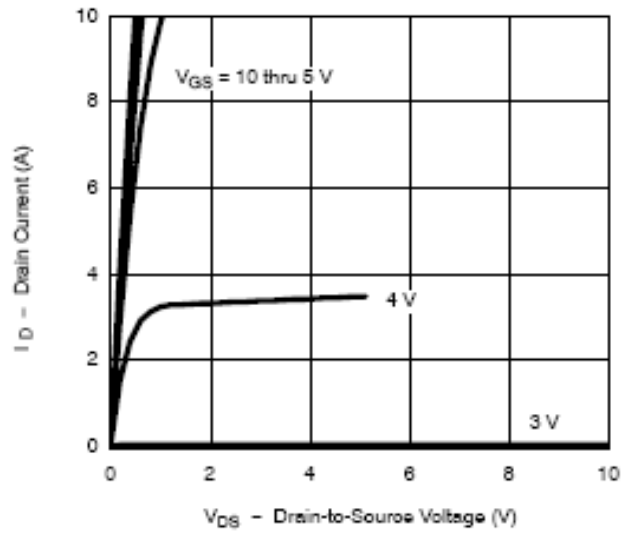
ELECTRICAL CHARACTERISTICS

(T_A=25℃ Unless otherwise noted)

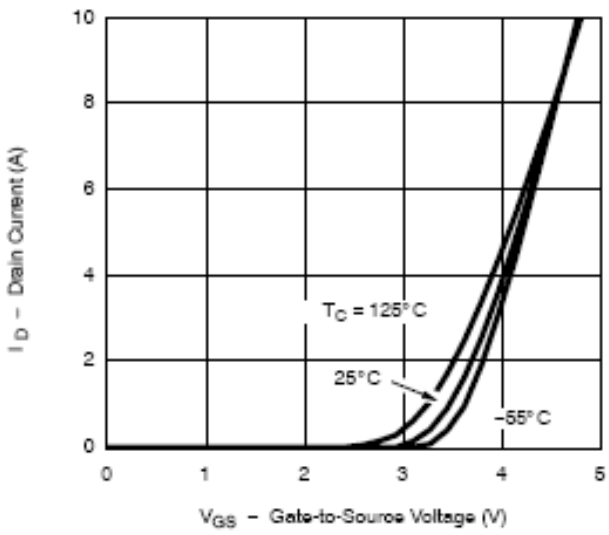
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	1.0		3.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V,V_{GS}=1.0V			1	uA
		V_{DS}=30V,V_{GS}=0.0V T_J=55℃			10	
On-State Drain Current	$I_{D(on)}$	V_{DS}≧4.5V,V_{GS}=10V	6			A
		V_{DS}≧4.5V,V_{GS}=4.5V	4			
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V,I_D=2.8A		0.043	0.060	Ω
		V_{GS} =4.5V,I_D=2.1A		0.056	0.080	
Forward Transconductance	gfs	V_{DS}=4.5V,I_D=2.5A		4.6		S
Diode Forward Voltage	V_{SD}	I_S=1.25A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=15V_{GS}=10V I_D≡2.5		4.5	10	nC
Gate-Source Charge	Q_{gs}			0.8		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	C_{iss}	V_{DS}=15V_{GS}=0V f=1MHz		240		pF
Output Capacitance	C_{oss}			110		
Reverse Transfer Capacitance	C_{rss}			17		
Turn-On Time	$t_{d(on)}$	V_{DD}=15R_L=15 I_D≡1.0A,V_{GEN}=10 R_G=6Ω		8	20	ns
	t_r			12	30	
Turn-Off Time	$t_{d(off)}$			17	35	
	t_f			8	20	

TYPICAL CHARACTERISTICS

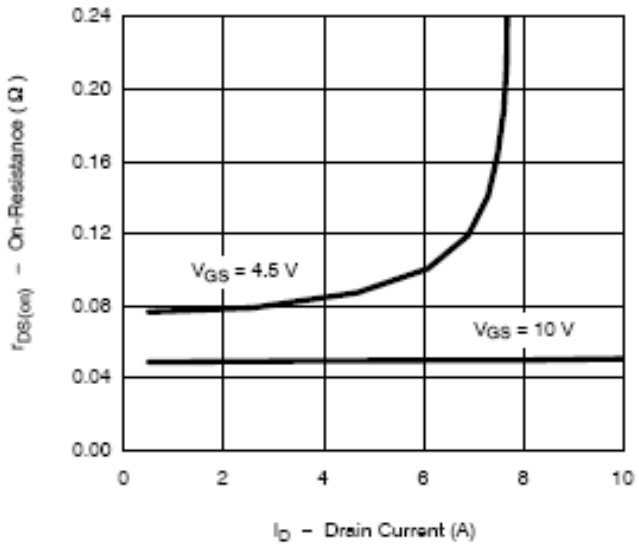
Output Characteristics



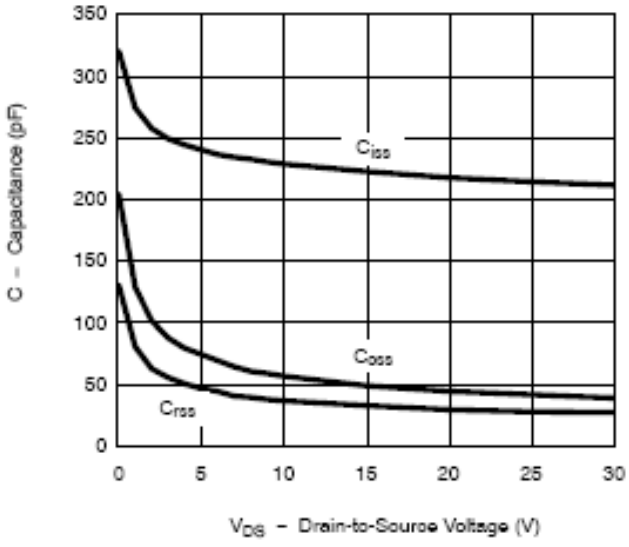
Transfer Characteristics



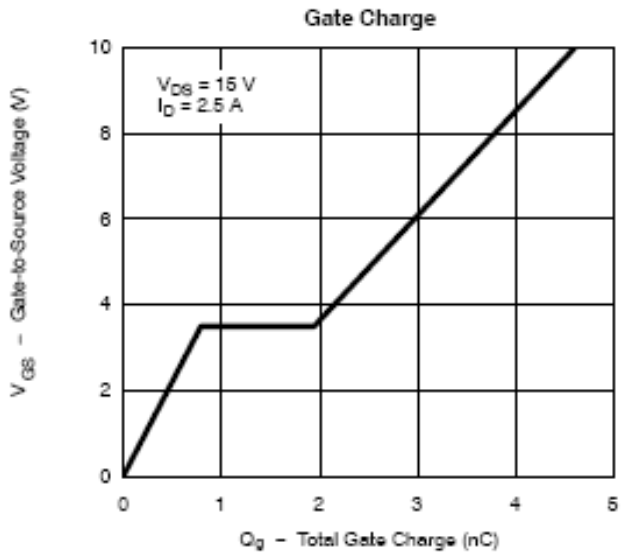
On-Resistance vs. Drain Current

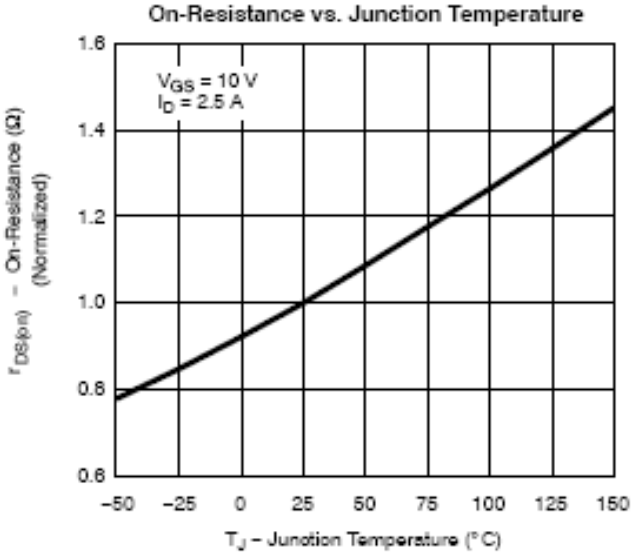


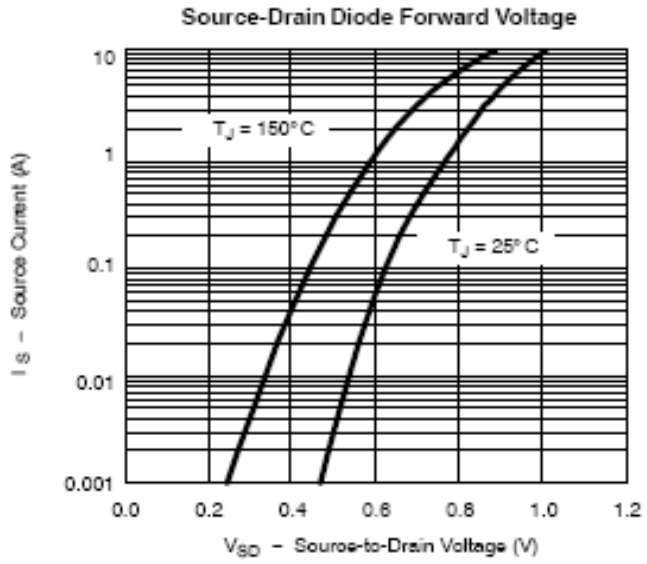
Capacitance

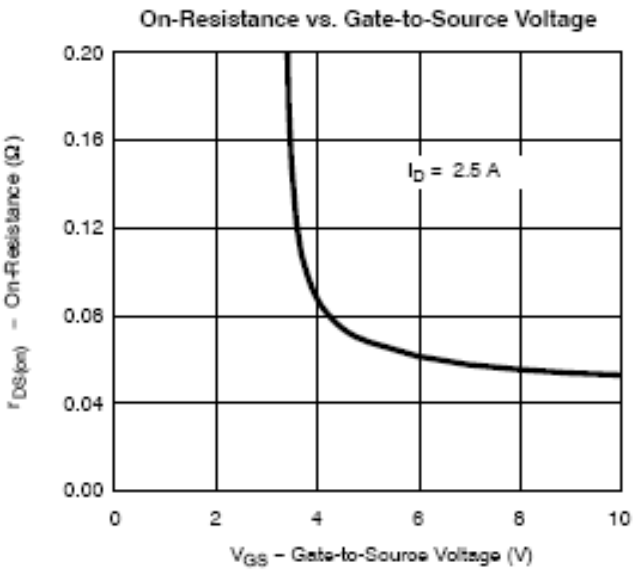


TYPICAL CHARACTERISTICS

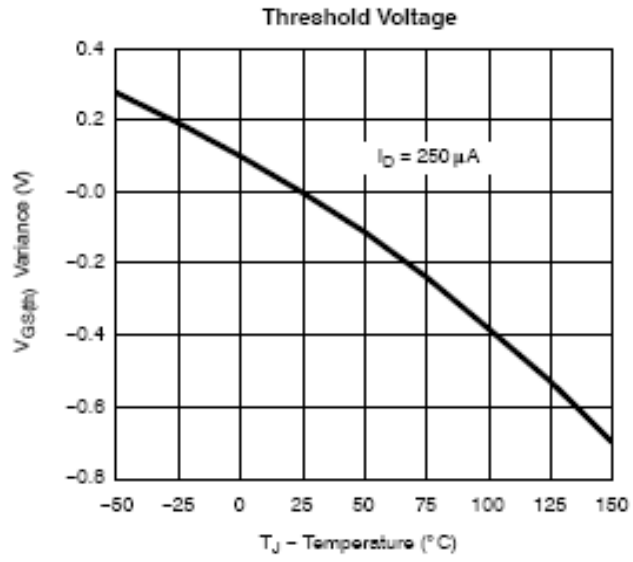


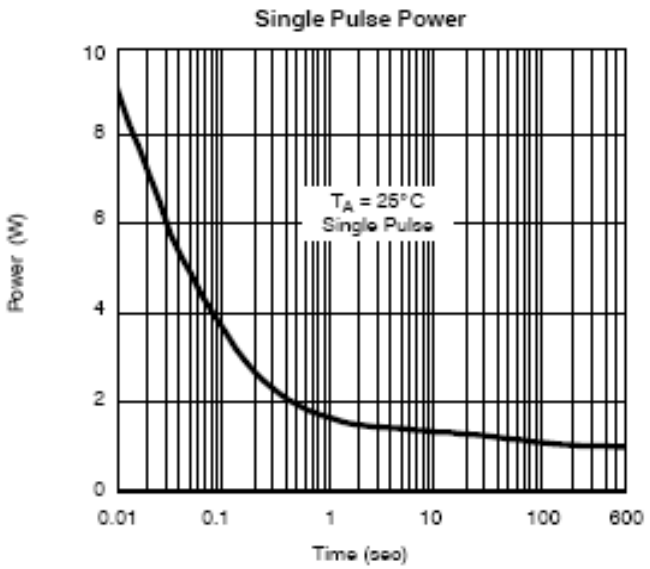


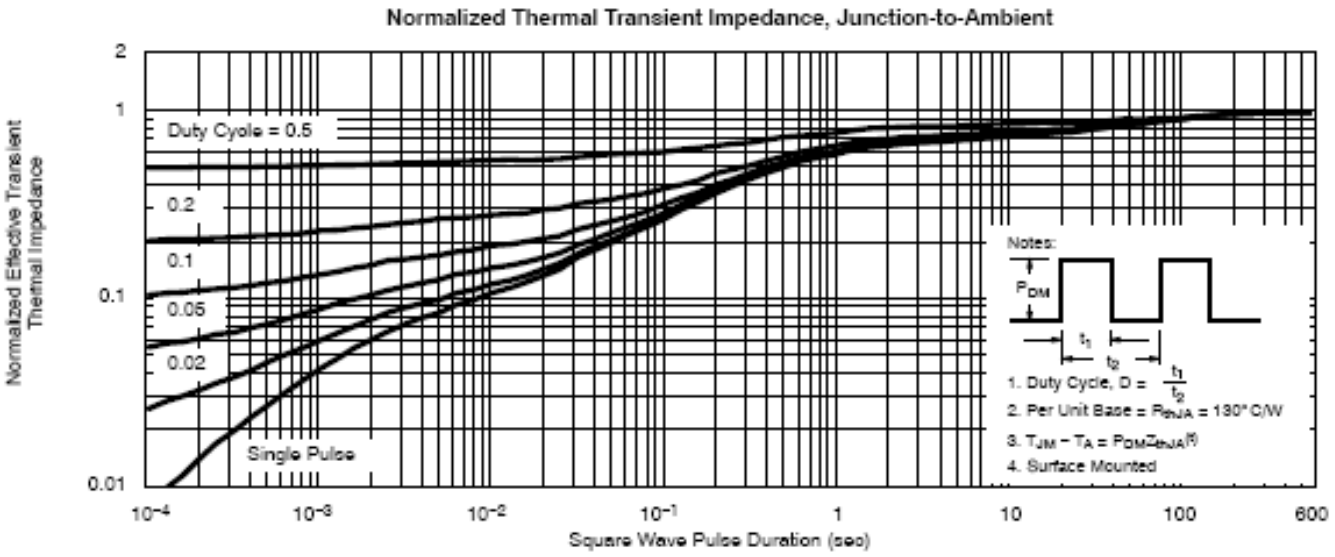




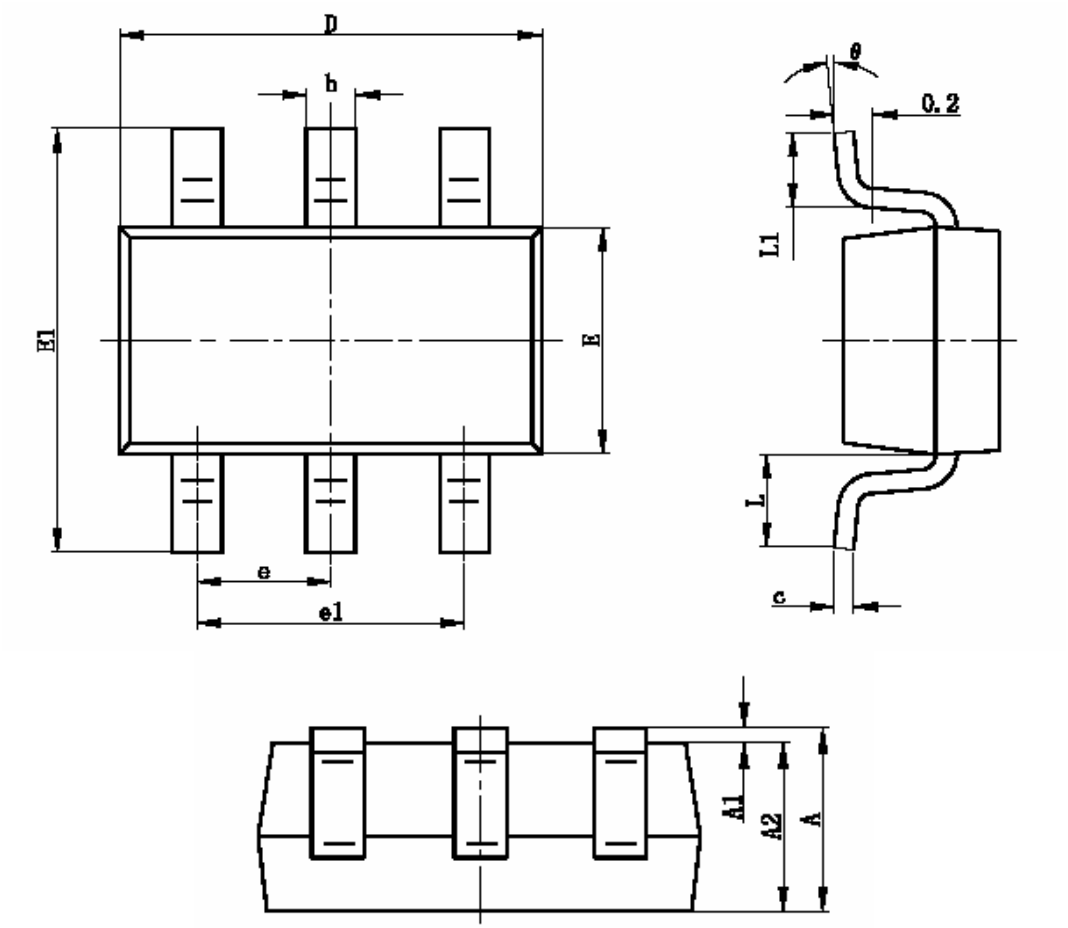
TYPICAL CHARACTERISTICS







SOT-23-6L PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.400	0.012	0.016
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.700REF		0.028REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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