



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.

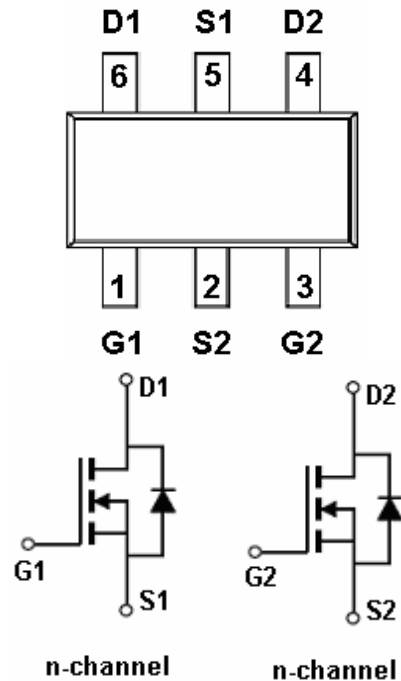
FEATURES

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

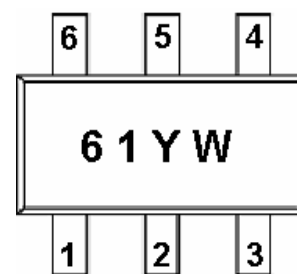
APPLICATIONS

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

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

ABSOLUTE MAXIMUM RATINGS

($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

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



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ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

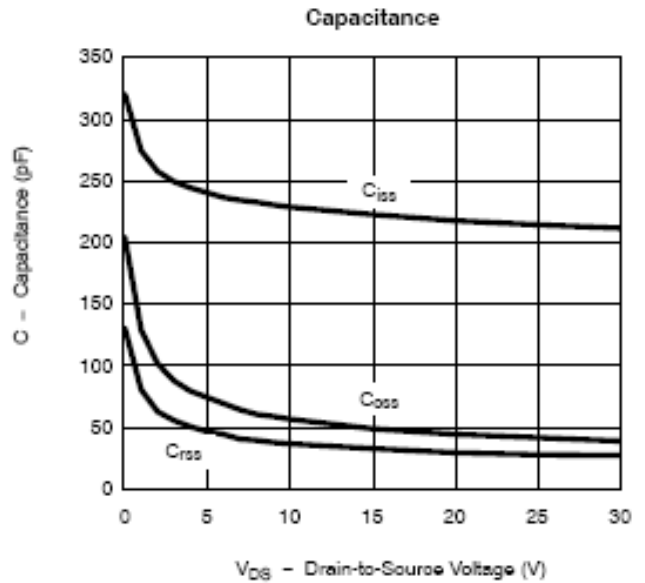
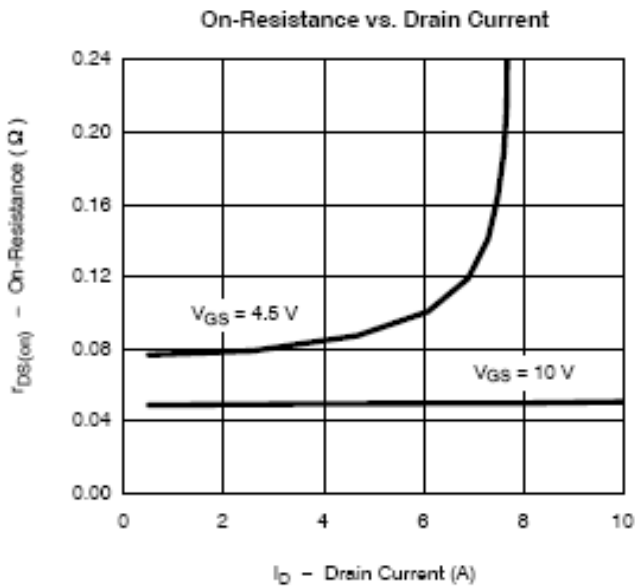
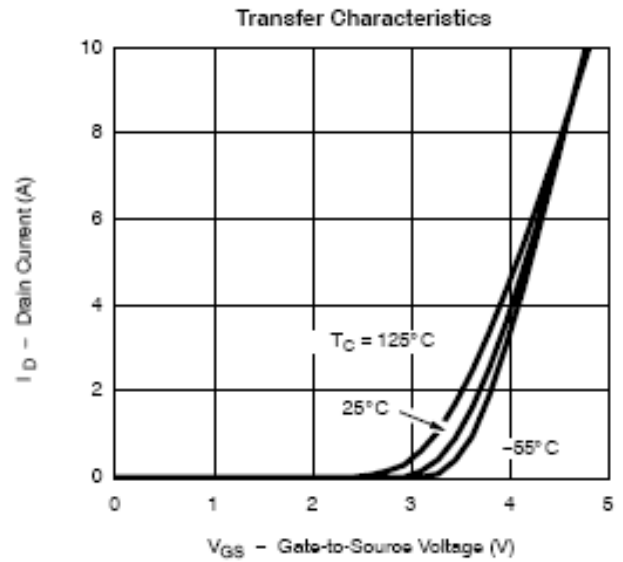
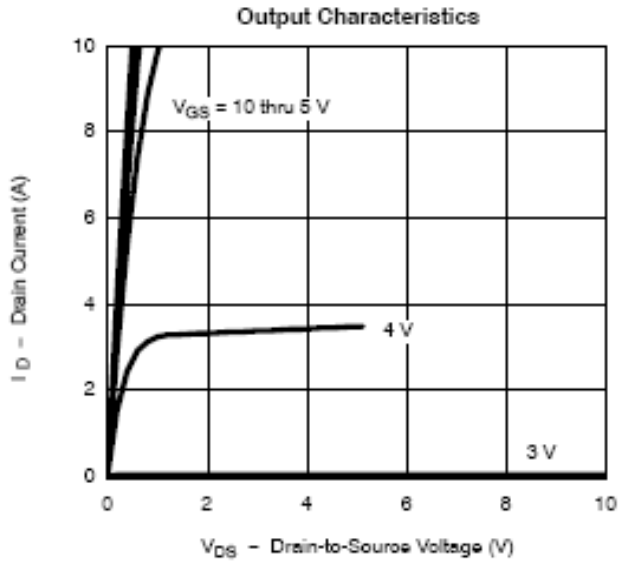
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		3.0	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=1.0V$			1	uA
		$V_{DS}=30V, V_{GS}=0.0V$ $T_J=55^\circ C$			10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 4.5V, V_{GS}=10V$	6			A
		$V_{DS} \geq 4.5V, V_{GS}=4.5V$	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	g_{fs}	$V_{DS}=4.5V, I_D=2.5A$		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	$V_{DS}=15V, V_{GS}=10V$ $I_D=2.5$		4.5	10	nC
Gate-Source Charge	Q_{gs}			0.8		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V$ $f=1MHz$		240		pF
Output Capacitance	C_{oss}			110		
Reverse Transfer Capacitance	C_{rss}			17		
Turn-On Time	$t_{d(on)}$	$V_{DD}=15V, R_L=15$ $I_D=1.0A, V_{GEN}=10$ $R_G=6\Omega$		8	20	ns
	t_r			12	30	
Turn-Off Time	$t_{d(off)}$			17	35	
	t_f			8	20	



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TYPICAL CHARACTERISTICS

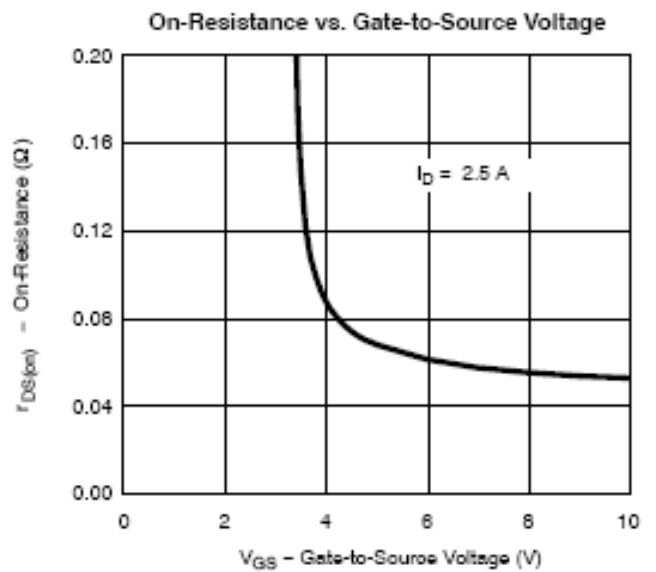
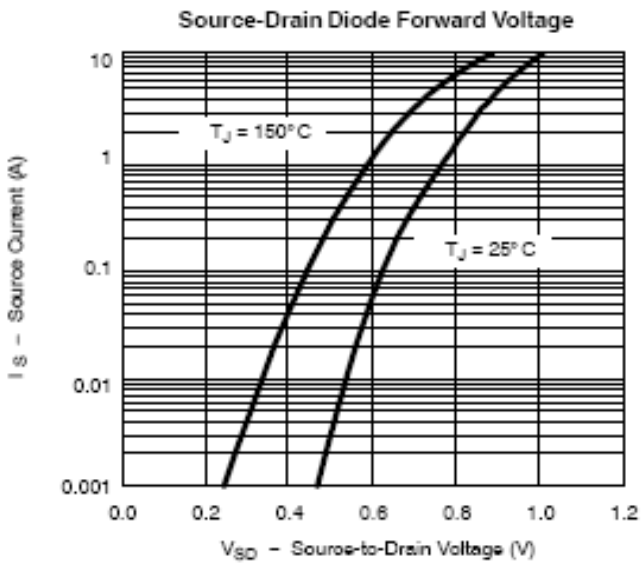
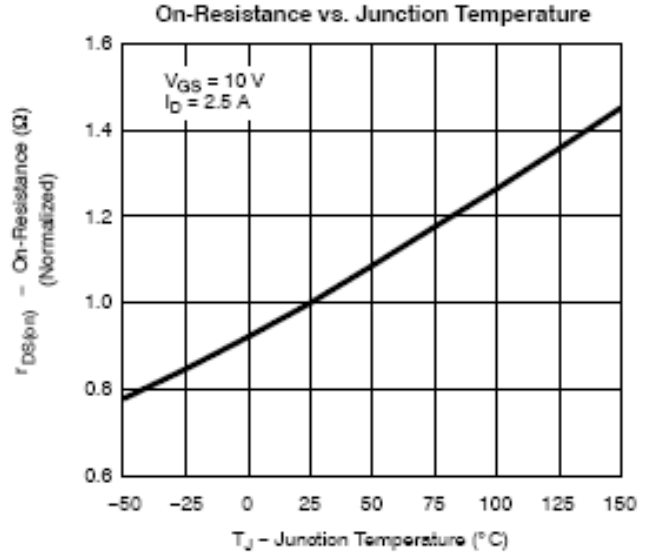
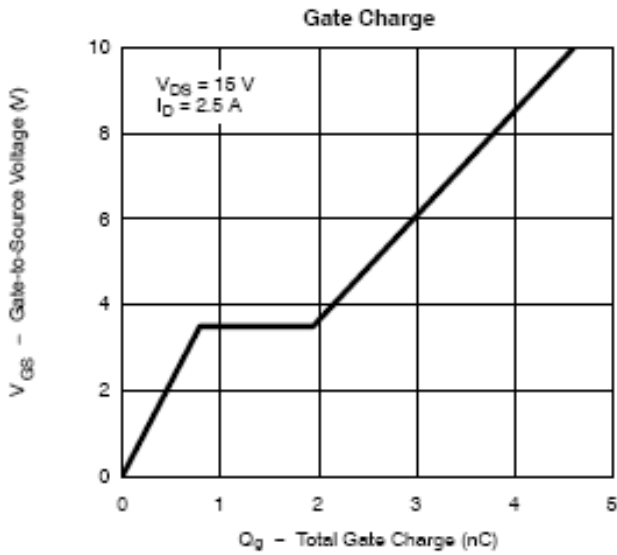




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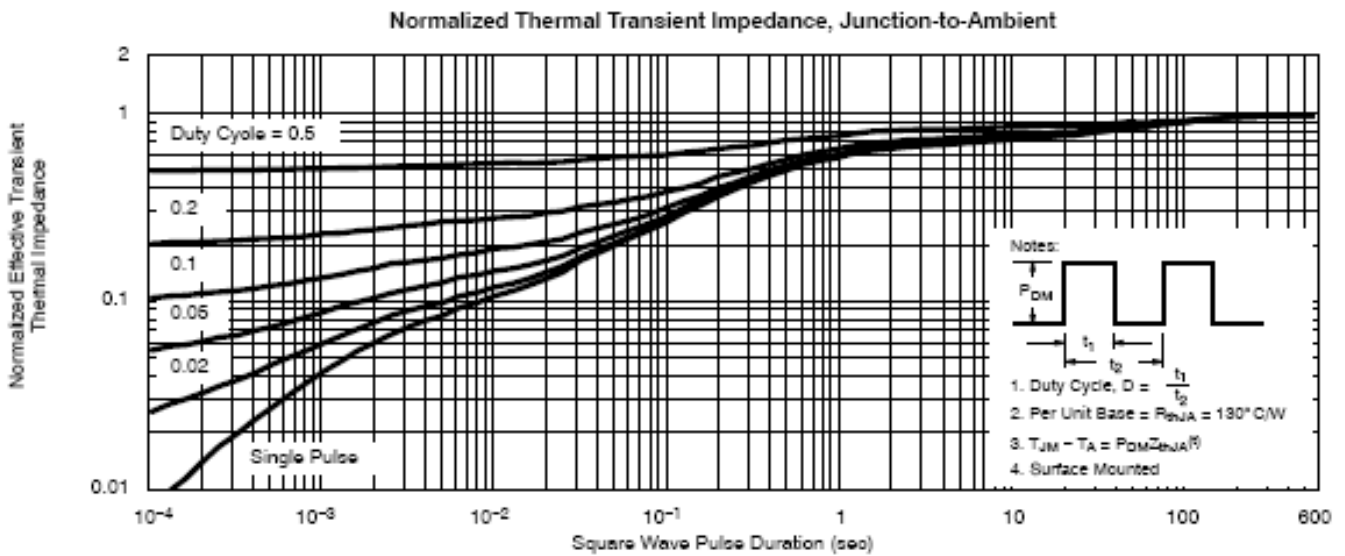
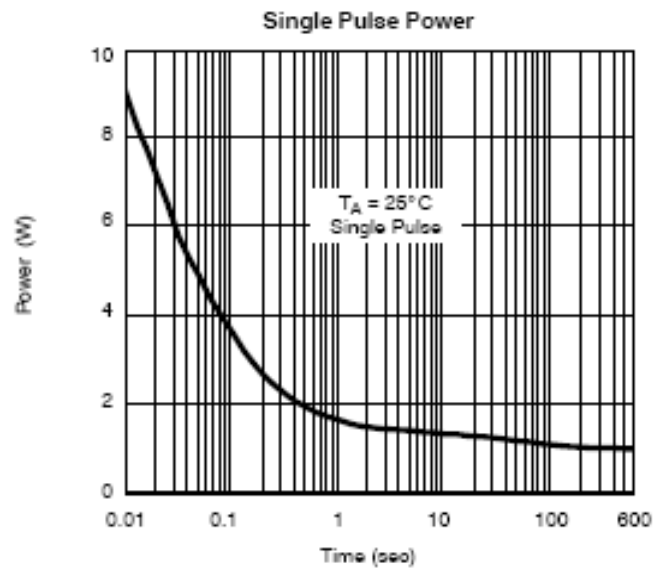
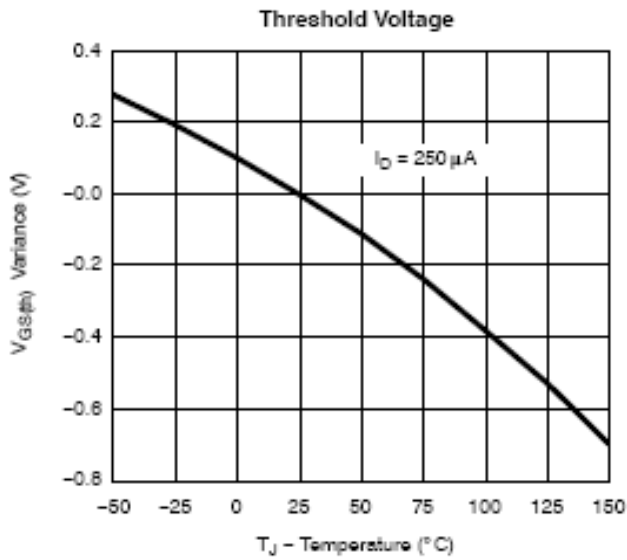




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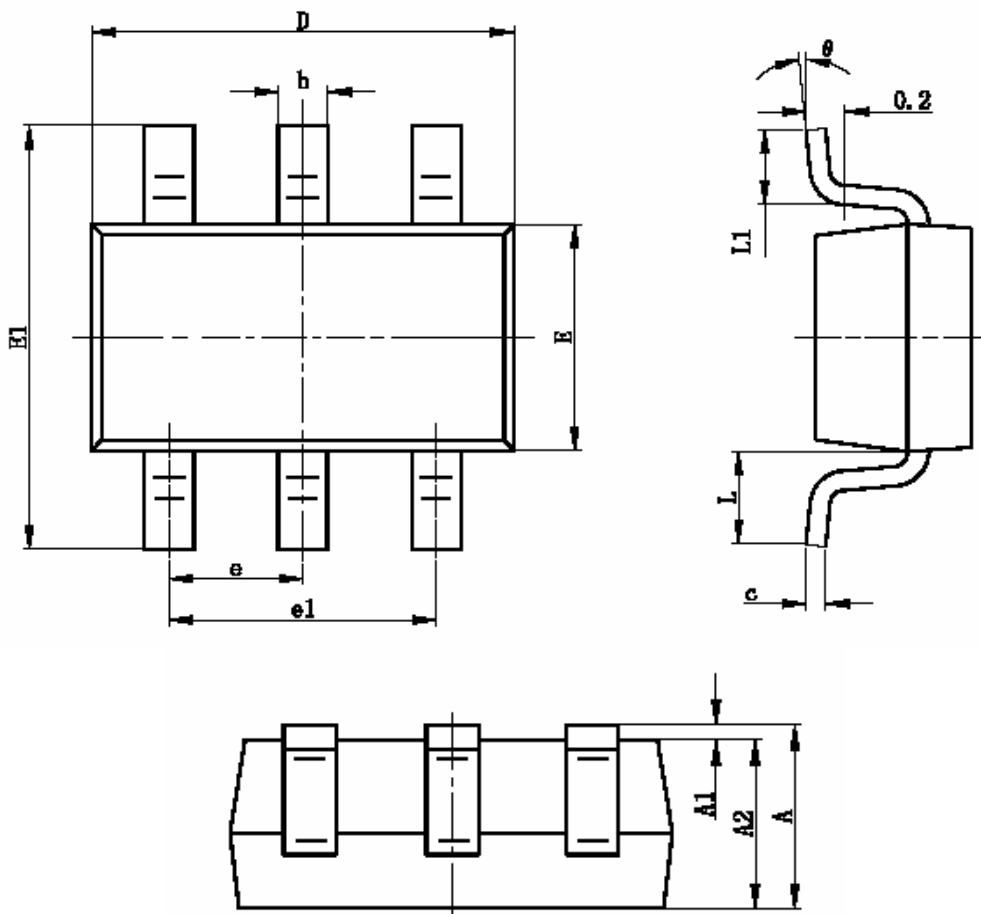




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SOT-23-6L PACKAGE OUTLINE



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
theta	0°	8°	0°	8°



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