STANSON

STN6561

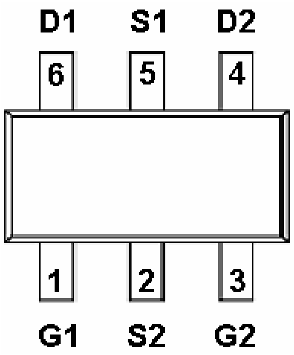
Dual N Channel Enhancement Mode MOSFET

2.8A

DESCRIPTION

The STN6561 is the Dual N-Channel enhancement mode power field effect transistor is 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 such as notebook computer power management and other batter powered circuits where high-side switching, low in-line power loss, and resistance to transients are needed .

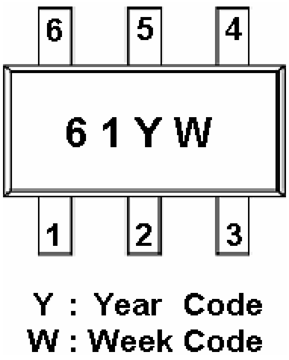
PIN CONFIGURATION
SOT-23-6L

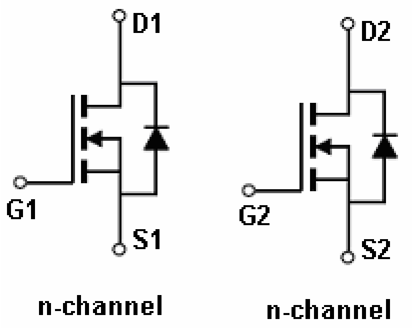


FEATURE

- N-Channel
- 30V/2.8A, $R_{DS(ON)}$ = 60mΩ (Typ.) @V_{GS} = 10V
- 30V/2.3A, $R_{DS(ON)}$ = 80mΩ @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

PART MARKING
SOT-23-6L





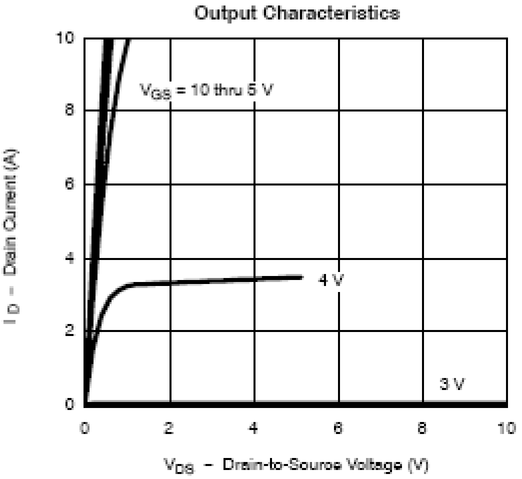
ABSOULTE MAXIMUM RATINGS (Ta = 25℃ Unless otherwise noted)

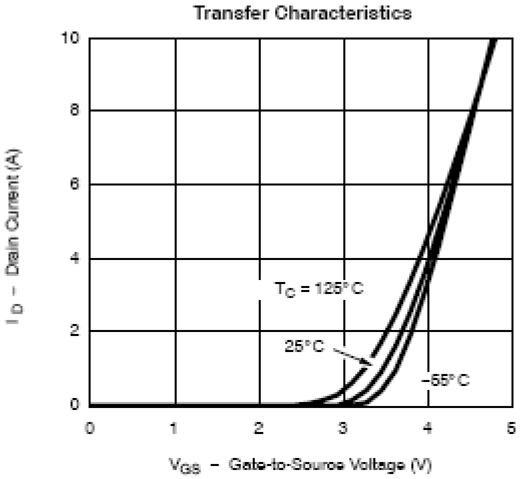
Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current ($T_J=150$℃)	$T_A=25$℃ $T_A=70$℃	I_D	2.8 2.3	A
Pulsed Drain Current		I_{DM}	10	A
Continuous Source Current (Diode Conduction)		I_S	1.25	A
Power Dissipation	$T_A=25$℃ $T_A=70$℃	P_D	1.15 0.75	W
Operation 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	

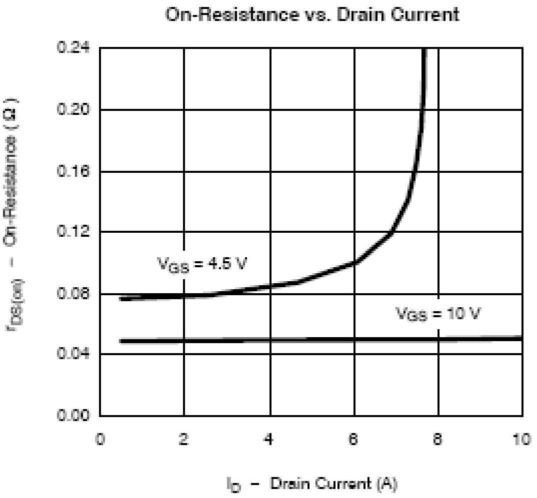
ELECTRICAL CHARACTERISTICS (Ta = 25℃ Unless otherwise noted)

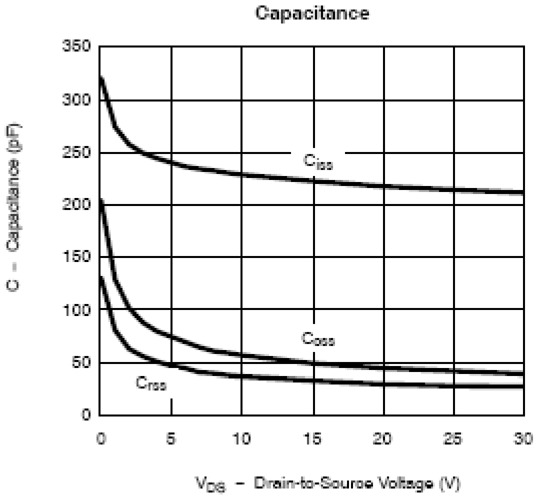
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	1.0		3.0	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	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 V_{GS}=4.5V,I_D=2.3A		0.043 0.056	0.060 0.080	Ω
Forward Tranconductance	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≡2.5A		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=15Ω I_D=1A V_{GEN}=10V R_G=6Ω		8	20	nS
	t_r			12	30	
Turn-Off Time	$t_{d(off)}$			17	35	
	t_f			8	20	

TYPICAL CHARACTERICTICS (25℃ Unless noted)

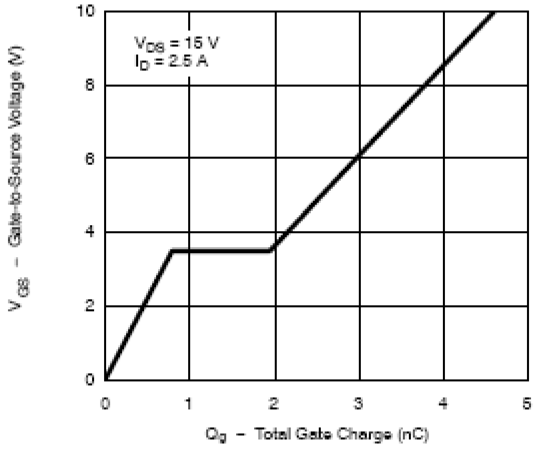

Output Characteristics


Transfer Characteristics

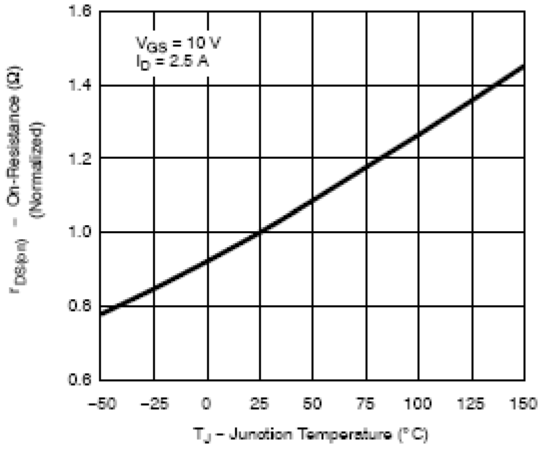

On-Resistance vs. Drain Current


Capacitance

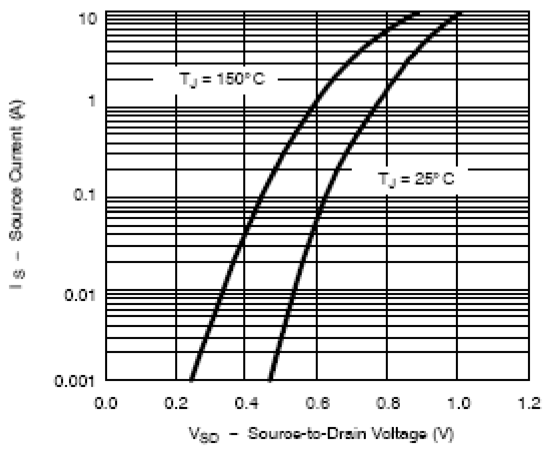
TYPICAL CHARACTERICTICS (25℃ Unless noted)



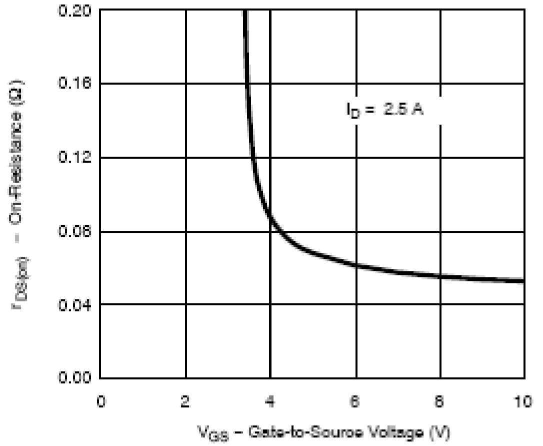
Gate Charge



On-Resistance vs. Junction Temperature

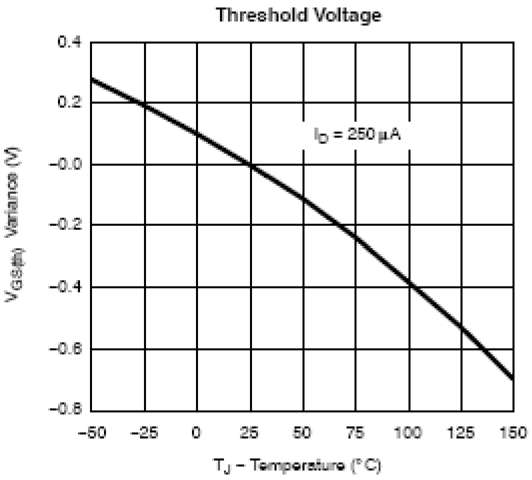


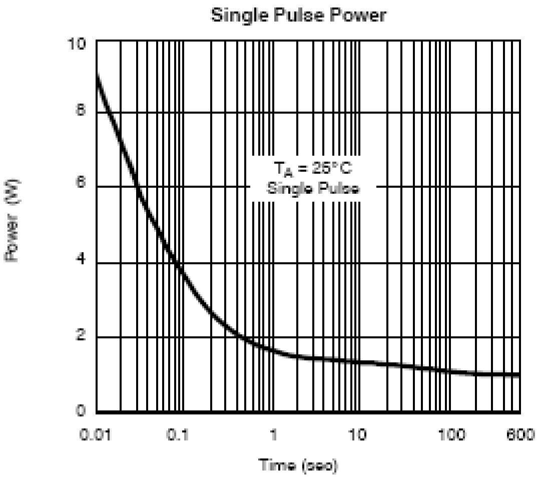
Source-Drain Diode Forward Voltage

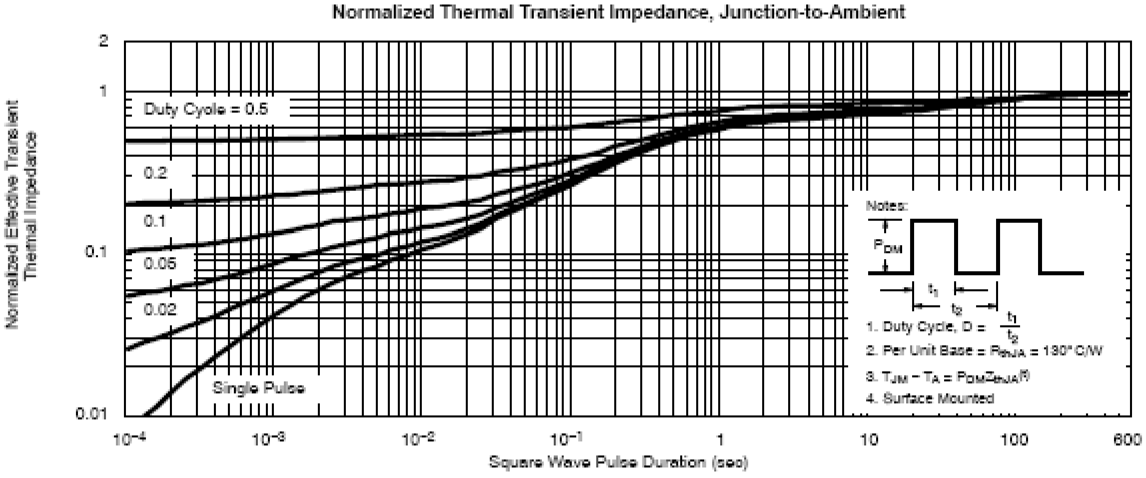


On-Resistance vs. Gate-to-Source Voltage

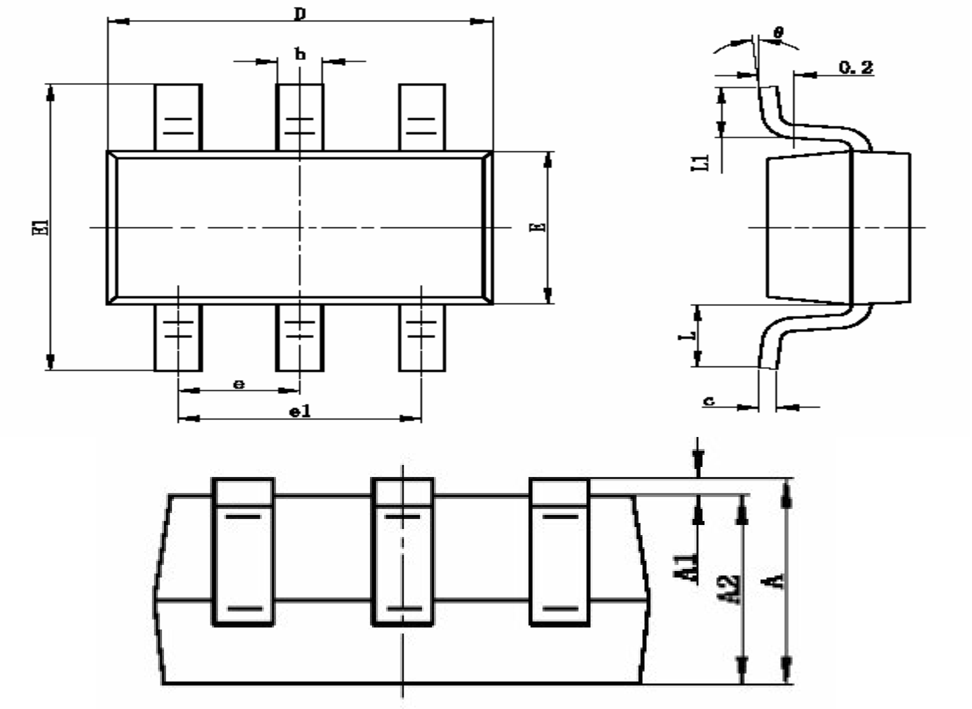
TYPICAL CHARACTERICTIC







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°