

ORDERING INFORMATION

Part Number	Package Code	Package	Shipping
STN2306S-TRG	S	SOT-23L	3000 / Tape&Reel

※ SOT-23L : Only available in tape and reel packaging. (A reel contains 3000 devices)

※ G : Lead-free product. This product is Green compliant.

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

Symbol	Parameter	Typical	Unit
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current ($T_J=150^{\circ}\text{C}$)	$V_{GS}=10\text{V}$ 4.0	A
I_{DM}	Pulsed Drain Current	20	A
I_S	Continuous Source Current (Diode Conduction)	1.0	A
P_D	Power Dissipation	$T_A=25^{\circ}\text{C}$ $T_A=70^{\circ}\text{C}$ 1.25 0.8	W
T_J	Operation Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55/150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

THERMAL DATA

Symbol	Parameter	Min	Typ	Max	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient			120	$^{\circ}\text{C}/\text{W}$

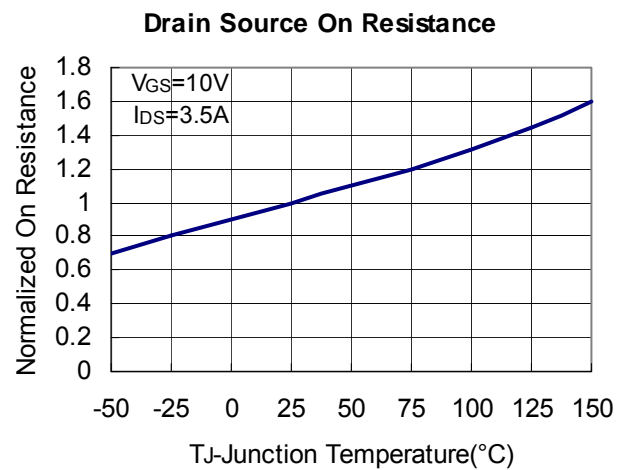
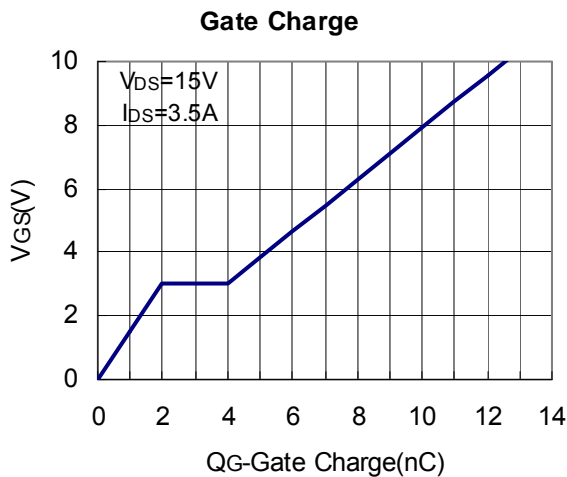
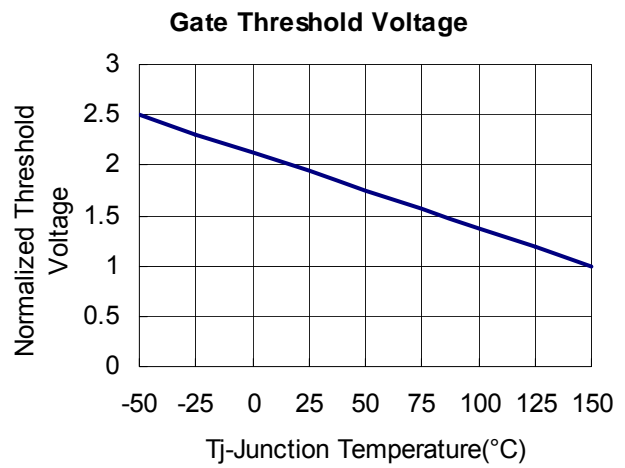
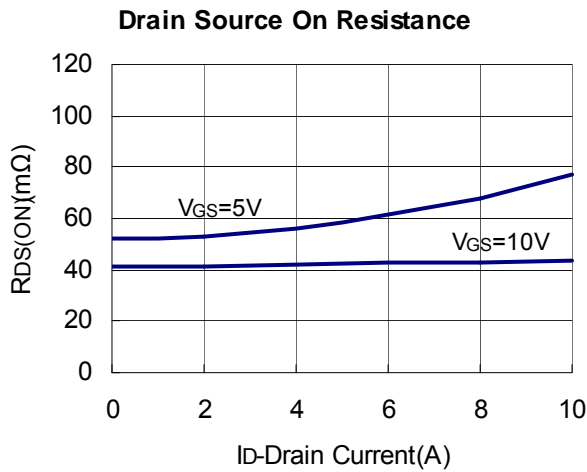
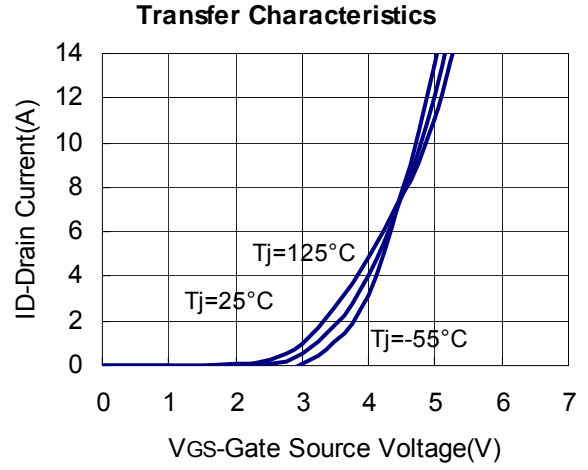
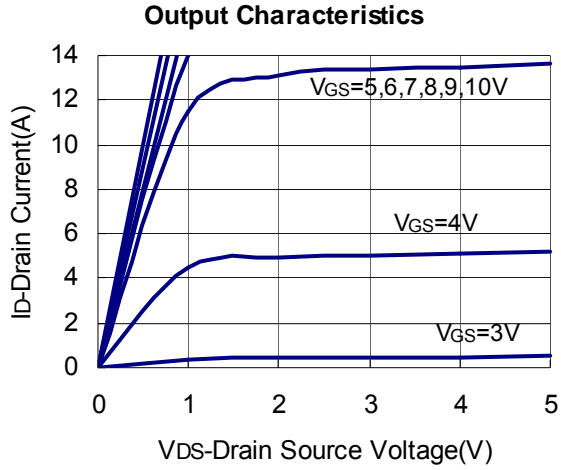
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.5	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$			1	μA
		$V_{DS}=30V, V_{GS}=0V$ $T_J=55^\circ\text{C}$			10	
$I_{D(ON)}$	On-State Drain Current	$V_{DS} \geq 5V, V_{GS}=10V$	6			A
$R_{DS(ON)}$	Drain-source On-Resistance	$V_{GS}=10V, I_D=3.6A$ $V_{GS}=4.5V, I_D=2.8A$		45 55	55 60	m Ω
G_{fs}	Forward Transconductance	$V_{DS}=15V, I_D=5.0A$		4.5		S
Source-Drain Diode						
V_{SD}	Diode Forward Voltage	$I_S=1.25A, V_{GS}=0V$		0.8	1.2	V
Dynamic Parameters						
Q_g	Total Gate Charge	$V_{DS}=15V$ $V_{GS}=10V$ $I_D=2.5A$		4.5	10	nC
Q_{gs}	Gate-Source Charge			0.8		
Q_{gd}	Gate-Drain Charge			1.0		
C_{iss}	Input Capacitance	$V_{DS}=15V$ $V_{GS}=0V$ $f=1\text{MHz}$		380		pF
C_{oss}	Output Capacitance			70		
C_{riss}	Reverse Transfer Capacitance			40		
$t_{d(on)}$	Turn-On Time	$V_{DD}=15V$ $R_L=15\Omega$ $I_D=1.0A$ $V_{GEN}=10V$ $R_G=6\Omega$		8	20	nS
t_r				6	16	
$t_{d(off)}$	Turn-Off Time			20	35	
t_f				5	15	

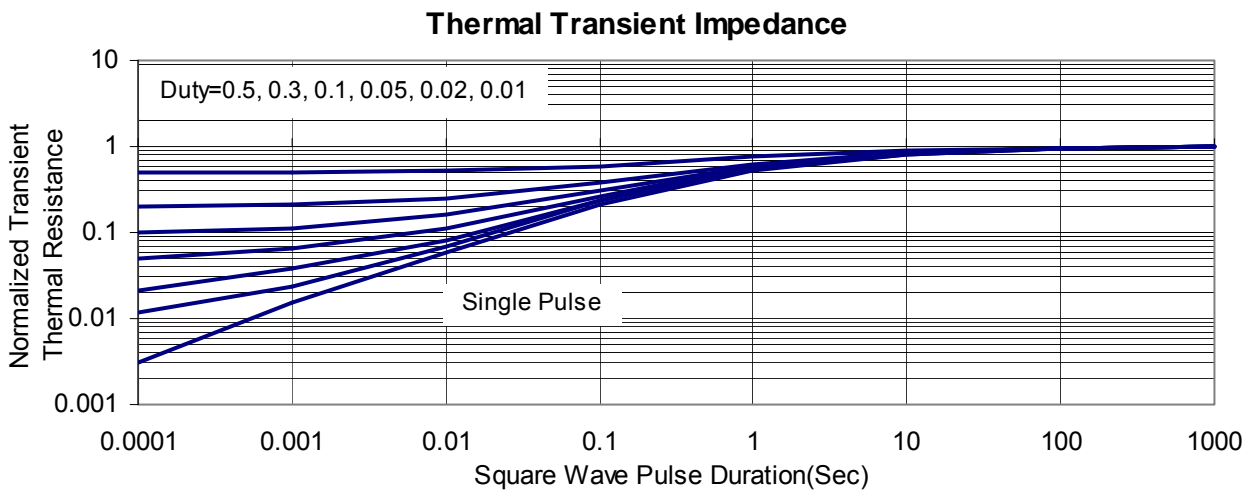
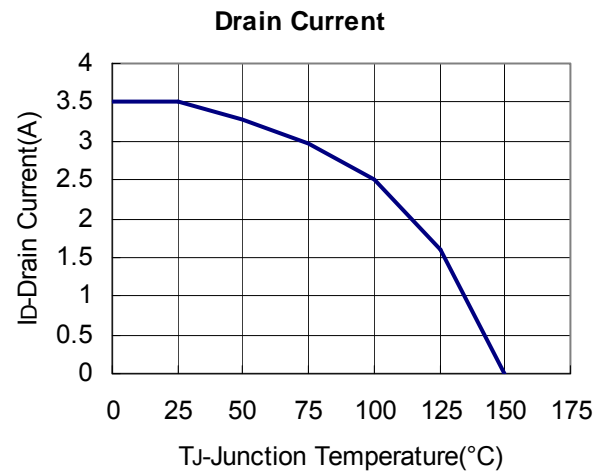
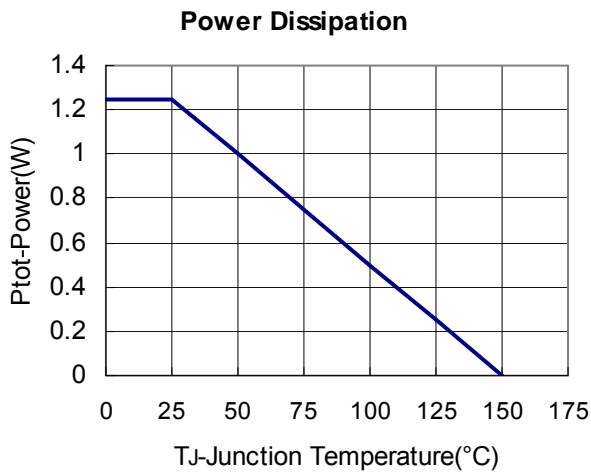
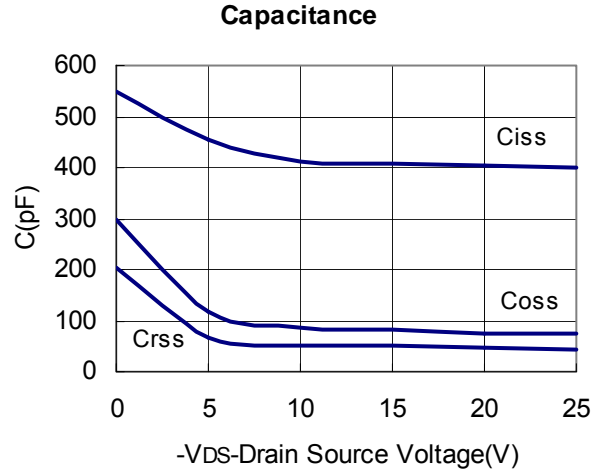
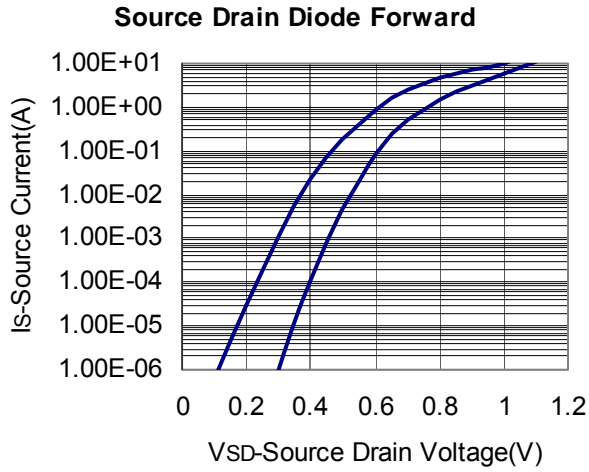
Note : 1. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

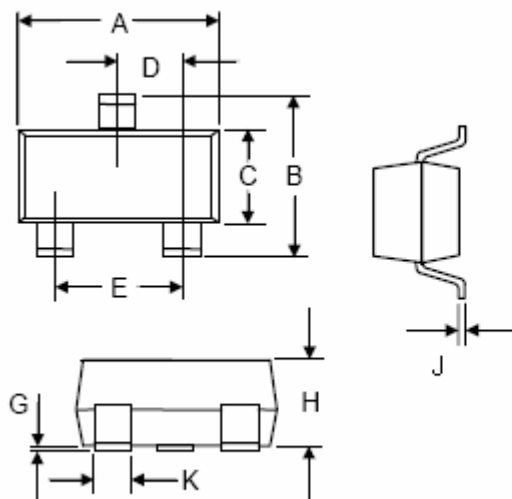
2. Static parameters are based on package level with recommended wire-bonding

■ TYPICAL CHARACTERISTICS (25°C Unless Note)



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■ SOT-23L PACKAGE DIMENSIONS


Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.110	0.120	2.80	3.04
B	0.104	0.116	2.65	2.95
C	0.059	0.067	1.50	1.70
D	0.037 TYP		0.95 TYP	
E	0.70	0.081	1.78	2.05
G	---	0.004	---	0.10
H	0.041	0.045	1.05	1.15
J	0.004	0.008	0.10	0.20
K	0.012	0.16	0.30	0.40