

## Product Summary

- $V_{DS} = 30V, I_D = 0.1A$
- $R_{DS(on)} < 8\Omega @ V_{GS} = 4.5V$
- $R_{DS(on)} < 13\Omega @ V_{GS} = 25V$

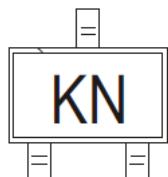
## Features

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for Portable equipment
- Easily designed drive circuits
- Easy to parallel

## Application

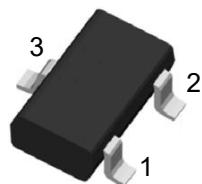
- Load Switch for Portable Devices
- DC/DC Converter

## Marking Code



## N-Channel Enhancement Mode Power MOSFET

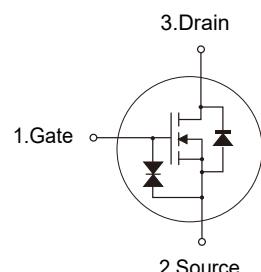
SOT-323



(Top View)

Pin	Description
1	Gate
2	Source
3	Drain

## Schematic Diagram



## Absolute Maximum Ratings

(Ta=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit
$V_{DS}$	Drain-Source voltage	30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	0.1	A
$P_D$	Power Dissipation	0.2	W
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55-150	°C
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	°C /W

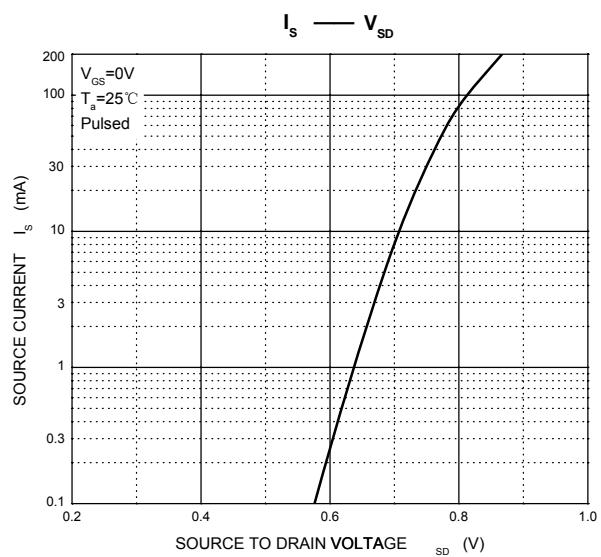
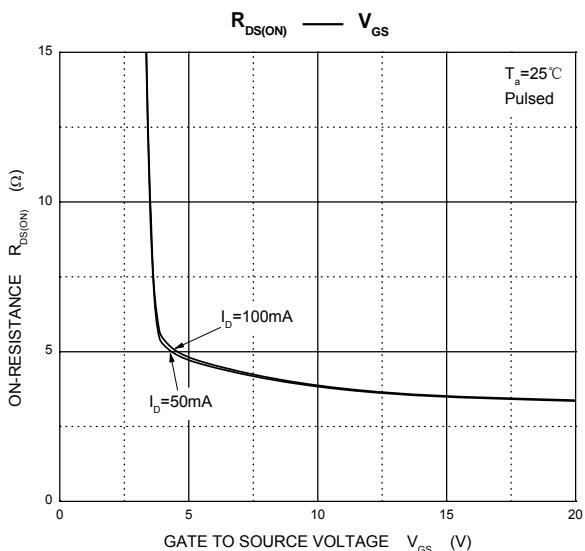
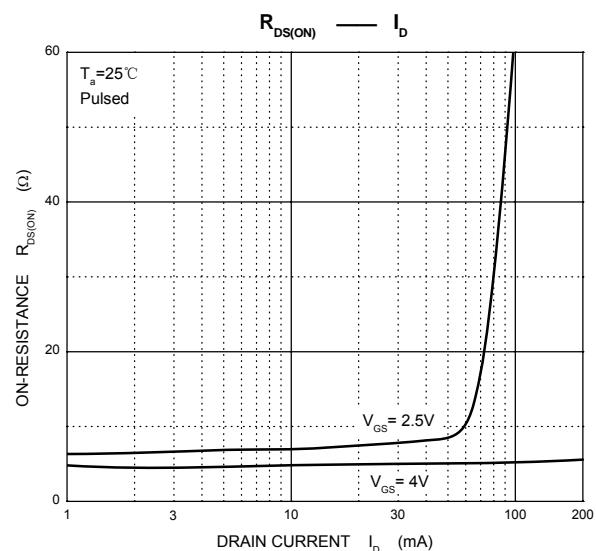
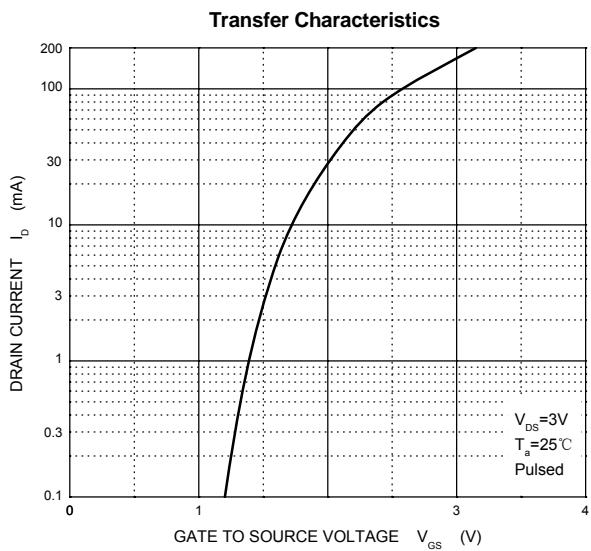
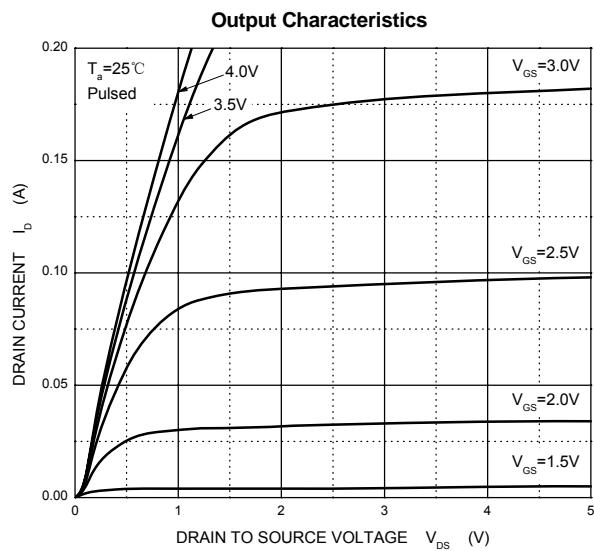
**Electrical Characteristics**

(Ta=25°C unless otherwise specified)

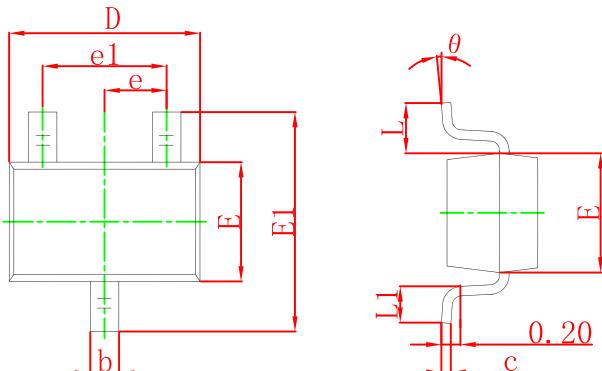
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			0.2	$\mu A$
Gate –Source leakage current	$I_{GS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 2$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 3V, I_D = 100\mu A$	0.8		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4V, I_D = 10mA$		5	8	$\Omega$
		$V_{GS} = 2.5V, I_D = 1mA$		8	13	$\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = 3V, I_D = 10mA$	20			$mS$
<b>Dynamic Characteristics*</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 5V, V_{GS} = 0V, f = 1MHz$		13		$pF$
Output Capacitance	$C_{oss}$			9		$pF$
Reverse Transfer Capacitance	$C_{rss}$			4		$pF$
<b>Switching Characteristics*</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 5V, V_{DD} = 5V, I_D = 10mA, R_g = 10\Omega, R_L = 500\Omega$		15		ns
Rise Time	$t_r$			35		ns
Turn-Off Delay Time	$t_{d(off)}$			80		ns
Fall Time	$t_f$			80		ns

\*These parameters have no way to verify.

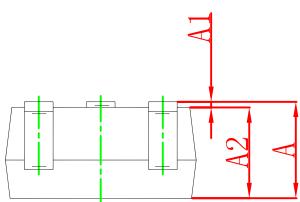
## Typical Characteristic Curves



## Package Outline SOT-323 Dimensions in mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



## Ordering Information

Device	Package	Shipping
TN3018KNSI	SOT-323	3,000PCS/Reel&7inches

## Contact Information

TANI website: <http://www.tanisemi.com> Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.



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## Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.

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