



SK01N65B

650V N-Channel Power MOSFET

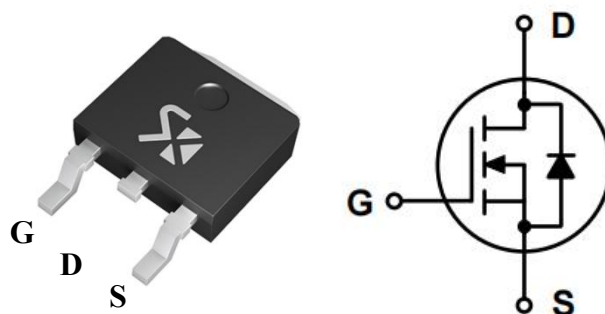
Features

- RoHS Compliant
- $I_D = 1.0A$
- $R_{DS(ON),max} = 12.5\Omega @ V_{GS} = 10V$
- Low gate charge minimize switching loss

Applications

- Adaptor
- Charger
- SMPS Standby Power

$BV_{DSS}, T_A = 25^\circ C$	$R_{DS(ON),max} @ 10V$	$I_D, T_C = 25^\circ C$
650V	12.5 Ω	1.0A



Maximum Ratings($T_A = 25^\circ C$, unless otherwise noted.)

TO-252

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Operation Voltage	V_{GS}	± 30	V
Drain Current-Continuous	I_D	1.0	A
Drain Current-Pulsed	I_{DM}	4.0	A
Power Dissipation	P_D	28	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$
Soldering Temperature(10s)	T_L	260	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	110	$^\circ C/W$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4.53	$^\circ C/W$

Electrical Characteristics($T_J = 25^\circ C$, unless otherwise noted.)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	650			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 650V, V_{GS} = 0V$			1	μA



SK01N65B

Gate-Source Leakage Current	I _{GSS}	V _{GS} =±30V,V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	2.0		4.0	V
Drain-Source on Resistance	R _{DS(on)}	V _{GS} =10V,I _D =0.5A		9.5	12.5	Ω
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		180		pF
Output Capacitance	C _{oss}			18		
Reverse Transfer Capacitance	C _{rss}			5		
Gate Series Resistance	R _G	f=1.0MHz		2.2		Ω
Total Gate Charge	Q _g	V _{DS} =520V, V _{GS} =10V, I _D =1A		6		nC
Gate Source Charge	Q _{gs}			2		
Gate Drain Charge	Q _{gd}			2.2		
Switching Characteristics						
Turn-on Delay Time	t _{d(ON)}	V _{GS} =10V, I _D =1A, V _{DD} =300V, R _G =25Ω		4		ns
Rise Timer	t _r			15		
Turn-Off Delay Time	t _{d(OFF)}			8		
Fall Timer	t _f			20		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =0.8A		0.85	1.3	V

Typical Characteristics

Figure 1. Output Characteristics

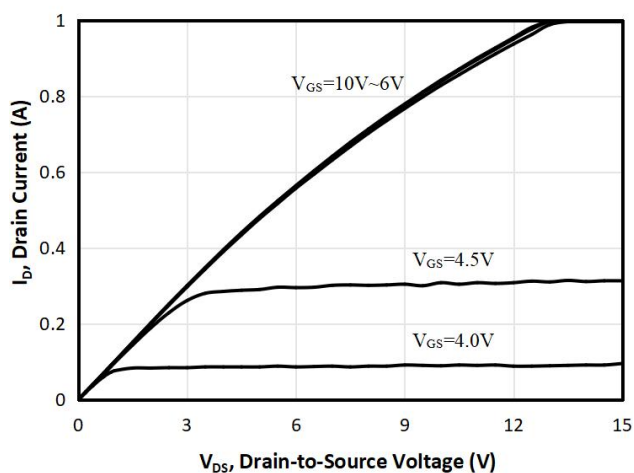
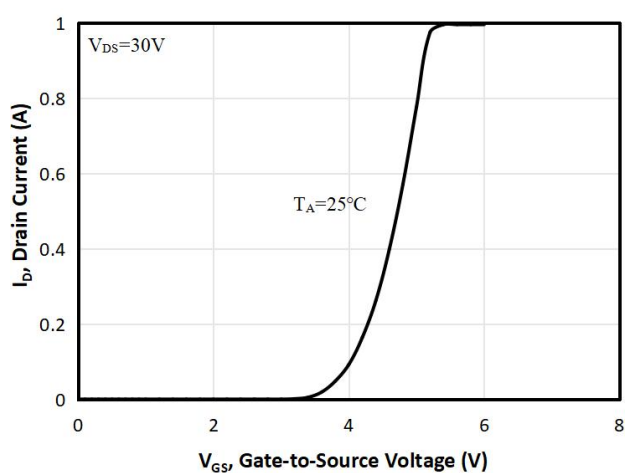


Figure 2. Transfer Characteristics





SK01N65B

Figure 3. On-Resistance vs. Drain Current

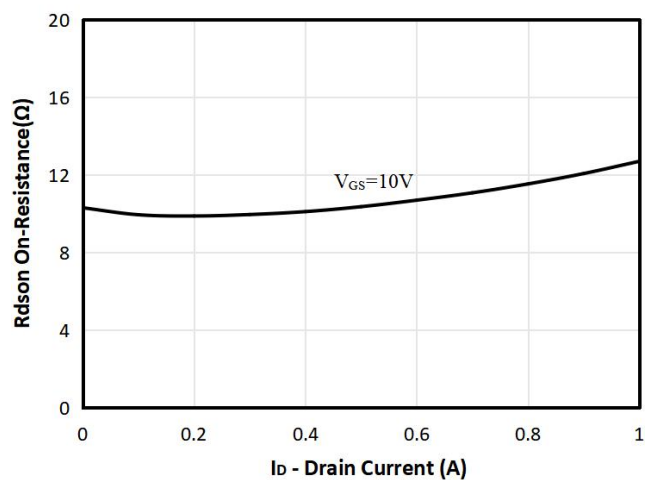


Figure 4. Source Current vs. Source-Drain Voltage

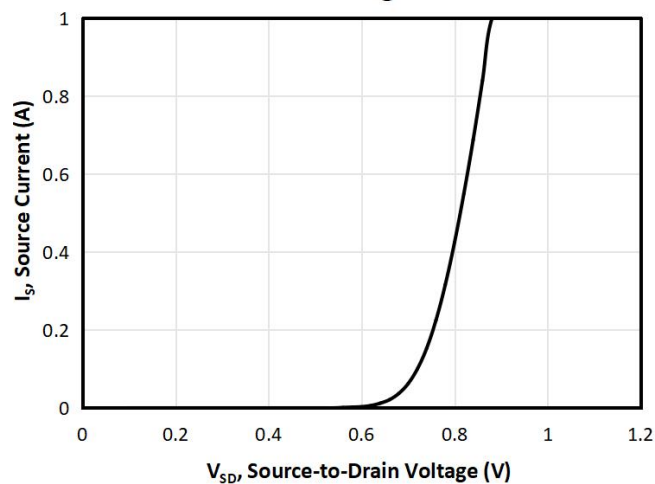


Figure 5. Capacitance Characteristics

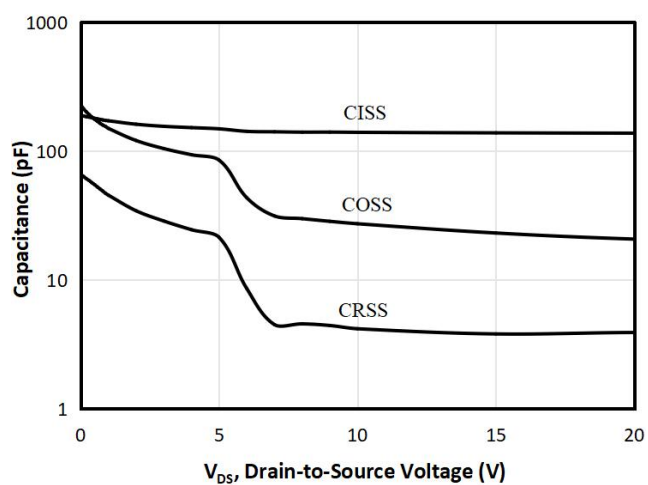


Figure 6. V_{DS} Drain-Source Voltage vs Gate Voltage

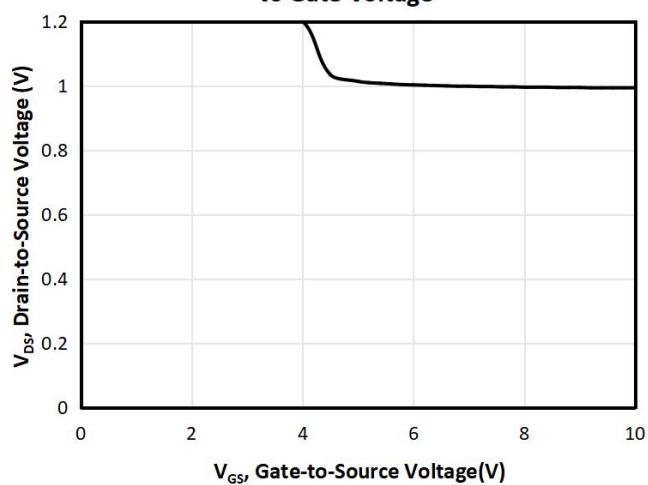
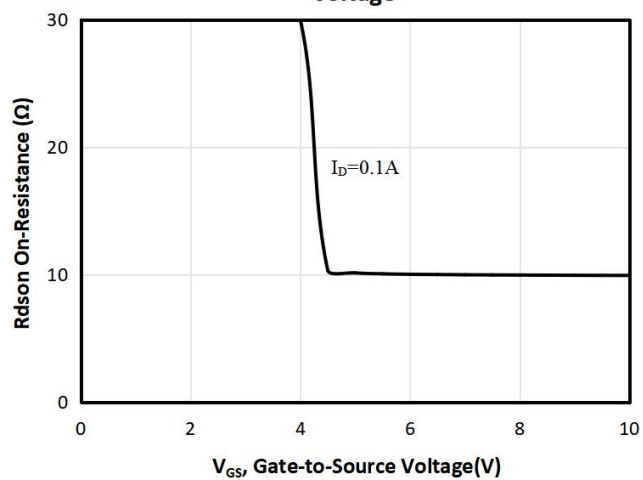


Figure 7. On-Resistance vs. Gate-to-Source Voltage

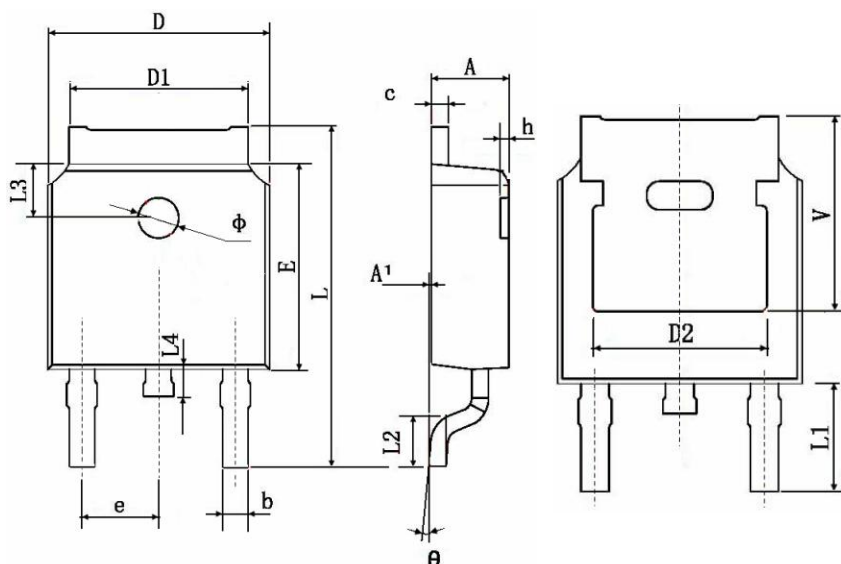




Package Information

TO-252

Dimensions in mm



SYMBOL	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.256	0.264
D	6.500	6.700	0.201	0.215
D1	5.100	5.460		
D2	0.483 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	



Shikues Disclaimer

1.Accuracy of Information and Right to Modify

The information provided in this document is for reference only. Shikues reserves the right to make changes to this document and to the specifications of the products described herein at any time, without prior notice, for the purpose of improving reliability, function, design, or for any other reason. It is the customer's responsibility to obtain and verify the latest product information and specifications before making any final design, procurement, or usage decisions.

2.No Warranty

Shikues makes no express or implied warranties, representations, or guarantees regarding the suitability of its products for any particular purpose.

Shikues assumes no liability for any assistance provided or for the design of customer products. All products are supplied "as is."

3.Intended Use and Limitation of Liability

The products described in this document are intended for use in general-purpose electronic devices. They are neither designed nor tested nor authorized for use in transportation equipment or applications requiring high reliability. Unless expressly authorized in writing by Shikues, these products must not be used as critical components in life-support systems or any applications where failure could directly pose a risk to human life (including, but not limited to, medical devices, transportation systems, aerospace equipment, nuclear facilities, and safety-critical systems).

Shikues assumes no responsibility or liability for any consequences arising from the use of its products in unauthorized or unintended applications.

Neither Shikues nor its representatives shall be held liable for any resulting damages.

4.Intellectual Property

This document does not grant any express or implied license—whether by estoppel, implication, or otherwise—to use any intellectual property rights of Shikues.