

**Features**

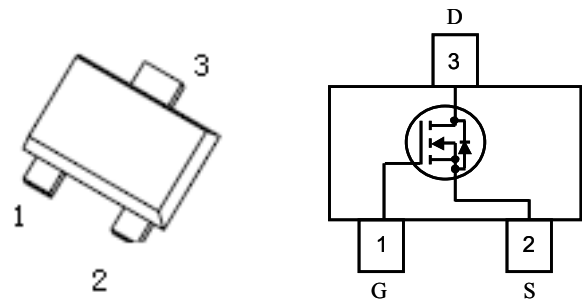
- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

**Product Summary**

BVDSS	RDSON (TYP.)	ID (MAX)
20V	240mΩ	0.6A
20V	280mΩ	
20V	410mΩ	
20V	450mΩ	

**Applications**

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

**SOT-723 Pin Configuration**

**Absolute Maximum Ratings**

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	20	V
$V_{GS}$	Gate-Source Voltage	$\pm 8$	V
$I_D@T_A=25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V^1$	400	mA
$I_{DM}$	Pulsed Drain Current <sup>2</sup>	1.2	A
$P_D@T_A=25^\circ C$	Total Power Dissipation <sup>3</sup>	0.150	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient (note 1)	823	$^\circ C/W$
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_L$	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	$^\circ C$

**Electrical Characteristics (T<sub>J</sub>=25 °C, unless otherwise noted)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	20	---	---	V
ΔBV <sub>DSS</sub> /ΔT <sub>J</sub>	BV <sub>DSS</sub> Temperature Coefficient	Reference to 25 °C, I <sub>D</sub> =1mA	---	0.05	---	V/°C
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =4.5V, I <sub>D</sub> =0.4A	---	240	450	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =0.3A	---	280	765	
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =0.2A	---	410	850	mΩ
		V <sub>GS</sub> =1.5V, I <sub>D</sub> =0.1A	---	450	950	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	0.35	---	1.0	V
ΔV <sub>GS(th)</sub>	V <sub>GS(th)</sub> Temperature Coefficient		---	-3.7	---	mV/°C
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =16V, V <sub>GS</sub> =0V, T <sub>J</sub> =25 °C	---	---	1	uA
		V <sub>DS</sub> =16V, V <sub>GS</sub> =0V, T <sub>J</sub> =55 °C	---	---	5	
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V	---	---	±10	uA
gfs	Forward Transconductance	V <sub>DS</sub> =5V, I <sub>D</sub> =0.1A	---	1.5	---	S
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =15V, V <sub>GS</sub> =10V, R <sub>G</sub> =6Ω, I <sub>D</sub> =0.1A	---	5.8	---	ns
T <sub>r</sub>	Rise Time		---	2.9	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	18	---	
T <sub>f</sub>	Fall Time		---	9	---	
C <sub>iSS</sub>	Input Capacitance	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz	---	88	---	pF
C <sub>oSS</sub>	Output Capacitance		---	15	---	
C <sub>rSS</sub>	Reverse Transfer Capacitance		---	10	---	

**Diode Characteristics**

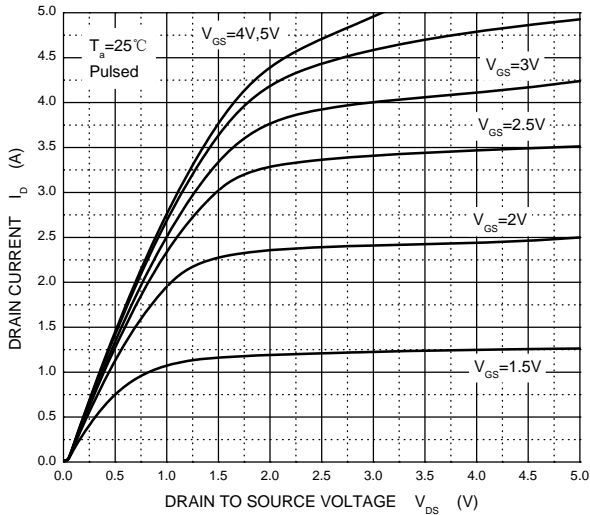
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>S</sub>	Continuous Source Current <sup>1,4</sup>	V <sub>G</sub> =V <sub>D</sub> =0V, Force Current	---	---	100	mA
I <sub>SM</sub>	Pulsed Source Current <sup>2,4</sup>		---	---	0.5	A
V <sub>SD</sub>	Diode Forward Voltage <sup>2</sup>	V <sub>GS</sub> =0V, I <sub>S</sub> =0.2A, T <sub>J</sub> =25 °C	---	---	1.2	V

**Notes :**

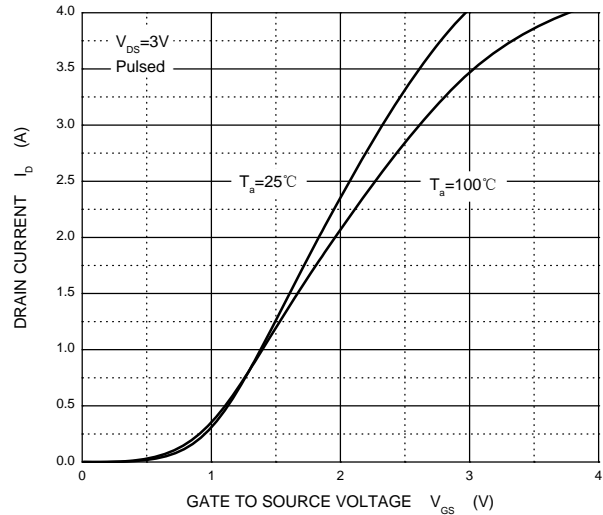
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

**Typical Performance Characteristics**

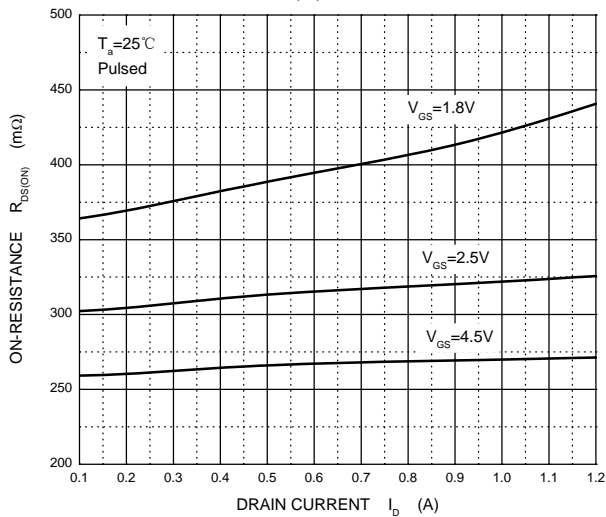
**Output Characteristics**



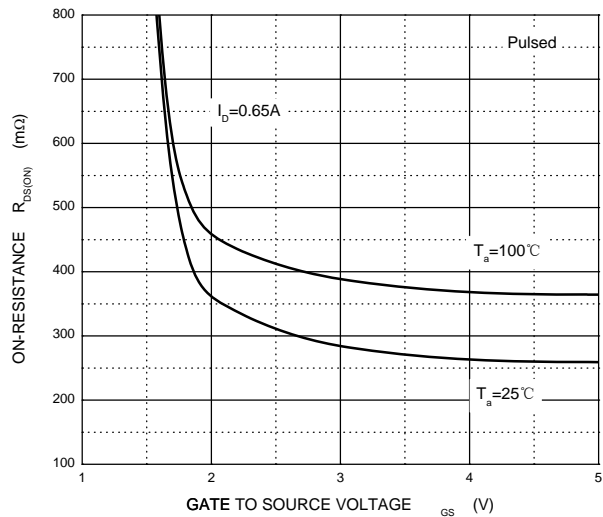
**Transfer Characteristics**



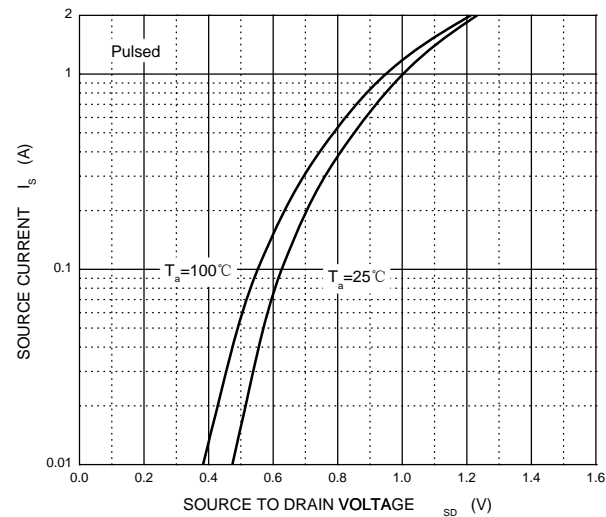
**$R_{DS(ON)}$  —  $I_D$**



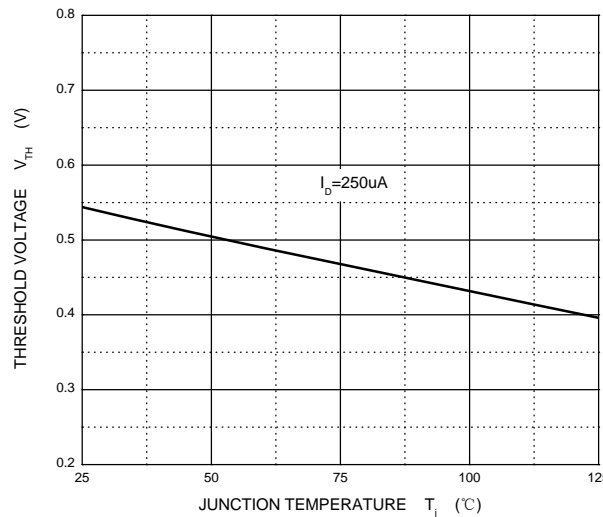
**$R_{DS(ON)}$  —  $V_{GS}$**



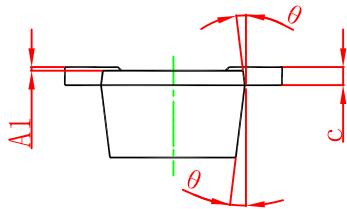
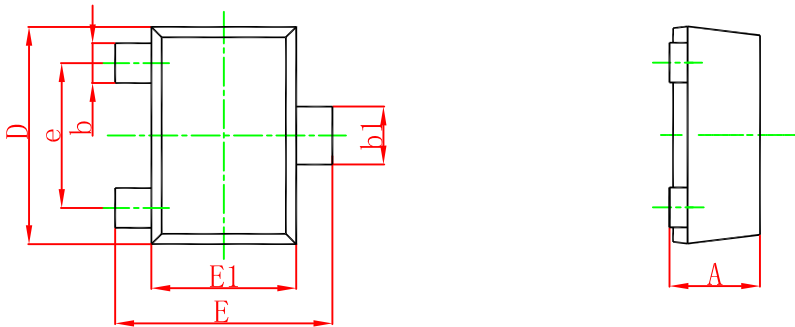
**$I_S$  —  $V_{SD}$**



**Threshold Voltage**

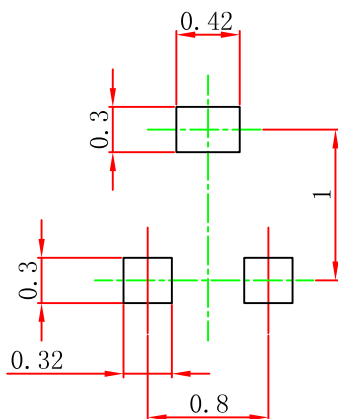


**SOT-723 Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
$\theta$	7° REF.		7° REF.	

**SOT-723 Suggested Pad Layout**



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

**NOTICE**

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

## Attention

- 1, Any and all Winsok power products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your Winsok power representative nearest you before using any Winsok power products described or contained herein in such applications.
- 2, Winsok power assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all Winsok power products described or contained herein.
- 3, Specifications of any and all Winsok power products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- 4, Winsok power Semiconductor CO., LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- 5, In the event that any or all Winsok power products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- 6, No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of Winsok power Semiconductor CO., LTD.
- 7, Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. Winsok power believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.
- 8, Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the Winsok power product that you intend to use.
- 9, this catalog provides information as of Sep. 2014. Specifications and information herein are subject to change without notice.

单击下面可查看定价，库存，交付和生命周期等信息

[>>WINSOK\(微硕\)](#)