

## 阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

## Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .



## N-Channel JFETs

2N4117A PN4117A SST4117  
 2N4118A PN4118A SST4118  
 2N4119A PN4119A SST4119

PRODUCT SUMMARY				
Part Number	V <sub>GS(off)</sub> (V)	V <sub>(BR)GSS</sub> Min (V)	g <sub>fs</sub> Min (μS)	I <sub>DSS</sub> Min (μA)
4117	-0.6 to -1.8	-40	70	30
4118	-1 to -3	-40	80	80
4119	-2 to -6	-40	100	200

### FEATURES

- Ultra-Low Leakage: 0.2 pA
- Very Low Current/Voltage Operation
- Ultrahigh Input Impedance
- Low Noise

### BENEFITS

- Insignificant Signal Loss/Error Voltage with High-Impedance Source
- Low Power Consumption (Battery)
- Maximum Signal Output, Low Noise
- High Sensitivity to Low-Level Signals

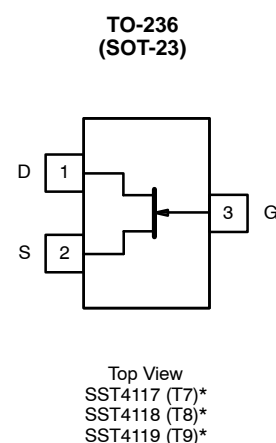
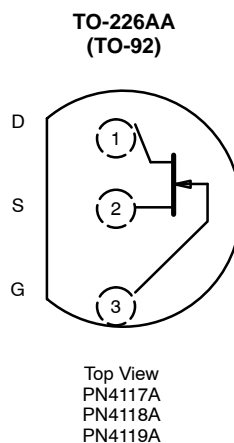
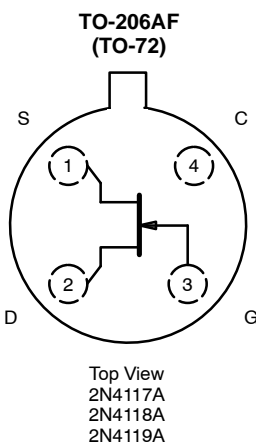
### APPLICATIONS

- High-Impedance Transducer Amplifiers
- Smoke Detector Input
- Infrared Detector Amplifier
- Precision Test Equipment

### DESCRIPTION

The 2N/PN/SST4117A series of n-channel JFETs provide ultra-high input impedance. These devices are specified with a 1-pA limit and typically operate at 0.2 pA. This makes them perfect choices for use as high-impedance sensitive front-end amplifiers.

The hermetically sealed TO-206AF package allows full military processing per MIL-S-19500 (see Military Information). The TO-226A (TO-92) plastic package provides a low-cost option. The TO-236 (SOT-23) package provides surface-mount capability. Both the PN and SST series are available in tape-and-reel for automated assembly (see Packaging Information).



\*Marking Code for TO-236

For applications information see AN105.



## Vishay Siliconix

### ABSOLUTE MAXIMUM RATINGS

Gate-Source/Gate-Drain Voltage	-40V
Forward Gate Current	50 mA
Storage Temperature :	(2N Prefix) -65 to 175°C
	(PN, SST Prefix) -55 to 150°C
Operating Junction Temperature :	(2N Prefix) -55 to 175°C
	(PN, SST Prefix) -55 to 150°C

Lead Temperature ( <sup>1</sup> / <sub>16</sub> " from case for 10 sec.)	300°C
Power Dissipation (case 25°C) :	(2N Prefix) <sup>a</sup> 300 mW
	(PN, SST Prefix) <sup>b</sup> 350 mW

- Notes  
a. Derate 2 mW/°C above 25°C  
b. Derate 2.8 mW/°C above 25°C

### SPECIFICATIONS (T<sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)

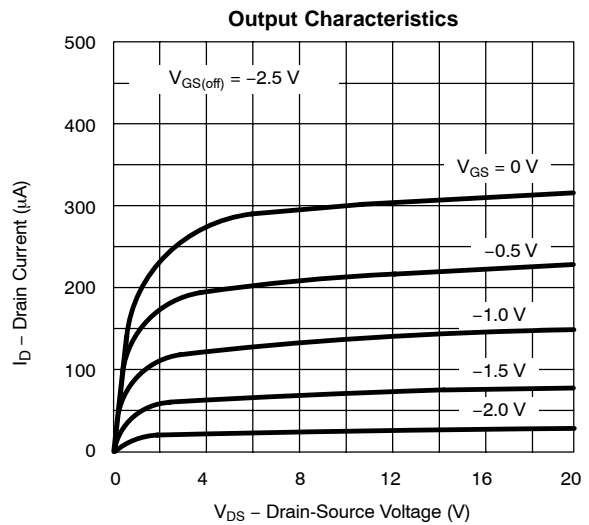
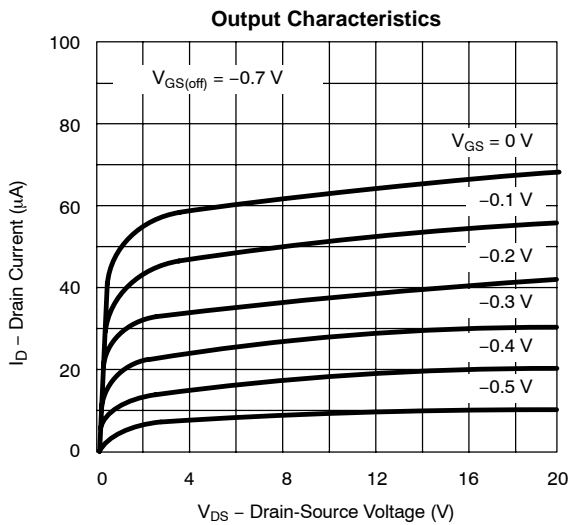
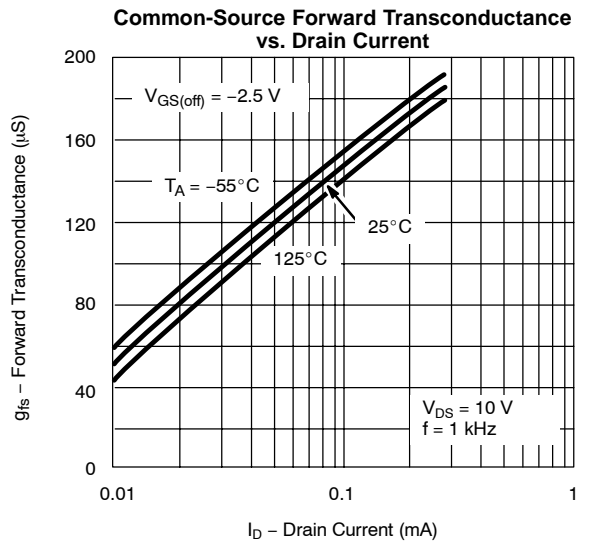
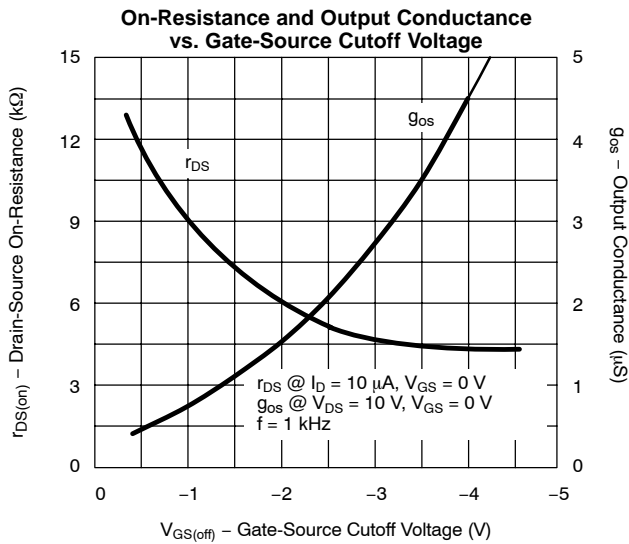
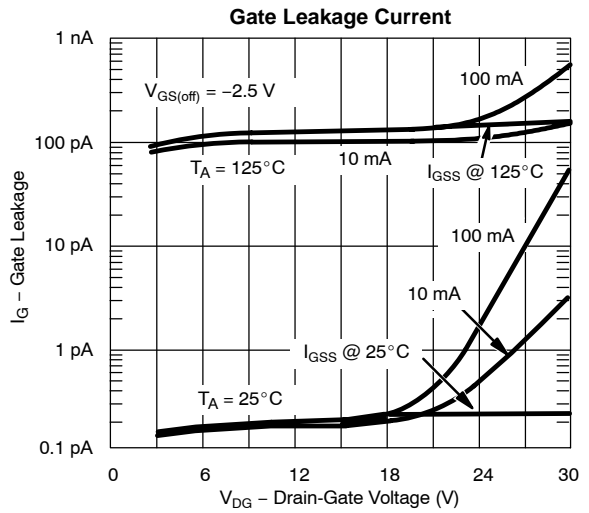
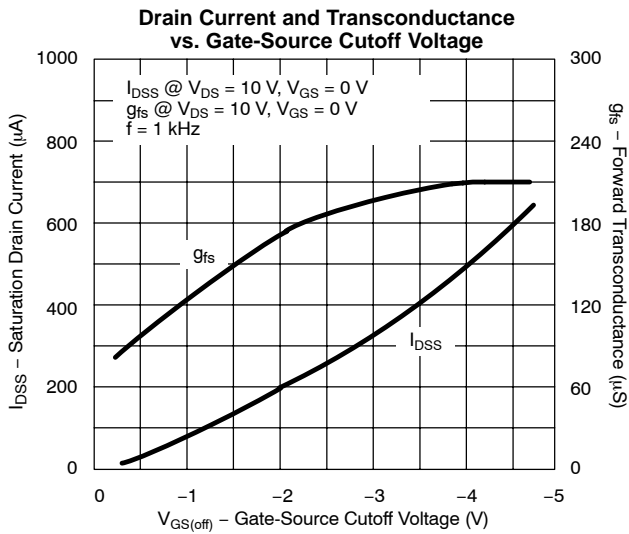
Parameter	Symbol	Test Conditions	Typ <sup>a</sup>	Limits						Unit
				4117		4118		4119		
				Min	Max	Min	Max	Min	Max	
<b>Static</b>										
Gate-Source Breakdown Voltage	V <sub>(BR)GSS</sub>	I <sub>G</sub> = -1 μA, V <sub>DS</sub> = 0 V	-70	-40		-40		-40		V
Gate-Source Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 1 nA		-0.6	-1.8	-1	-3	-2	-6	
Saturation Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0 V		30	90	80	240	200	600	μA
Gate Reverse Current	I <sub>GSS</sub>	V <sub>GS</sub> = -20 V V <sub>DS</sub> = 0 V	2N	-0.2		-1		-1		pA
		V <sub>GS</sub> = -20 V V <sub>DS</sub> = 0 V T <sub>A</sub> = 150°C		-0.4		-2.5		-2.5		nA
		V <sub>GS</sub> = -10 V V <sub>DS</sub> = 0 V	PN	-0.2		-1		-1		pA
			SST	-0.2		-10		-10		pA
		V <sub>GS</sub> = -10 V V <sub>DS</sub> = 0 V T <sub>A</sub> = 100°C	PN/SST	-0.03		-2.5		-2.5		nA
Gate Operating Current <sup>b</sup>	I <sub>G</sub>	V <sub>DG</sub> = 15 V, I <sub>D</sub> = 30 μA	-0.2							pA
Drain Cutoff Current <sup>b</sup>	I <sub>D(off)</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = -8 V	0.2							
Gate-Source Forward Voltage <sup>b</sup>	V <sub>GS(F)</sub>	I <sub>G</sub> = 1 mA, V <sub>DS</sub> = 0 V	0.7							V
<b>Dynamic</b>										
Common-Source Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0 V f = 1 kHz		70	210	80	250	100	330	μS
Common-Source Output Conductance	g <sub>os</sub>				3		5		10	
Common-Source Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 10 V V <sub>GS</sub> = 0 V f = 1 MHz	2N/PN	1.2		3		3		pF
			SST	1.2						
Common-Source Reverse Transfer Capacitance	C <sub>rss</sub>		2N/PN	0.3		1.5		1.5		
			SST	0.3						
Equivalent Input Noise Voltage <sup>b</sup>	e <sub>n</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0 V f = 1 kHz	15							nV/ √Hz

- Notes  
a. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.  
b. This parameter not registered with JEDEC.

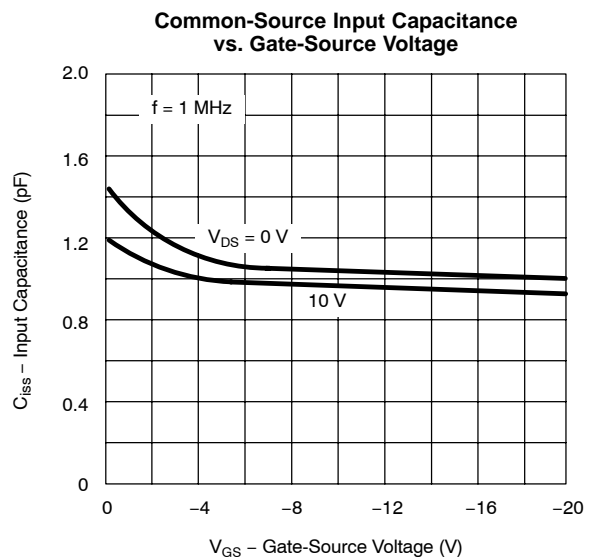
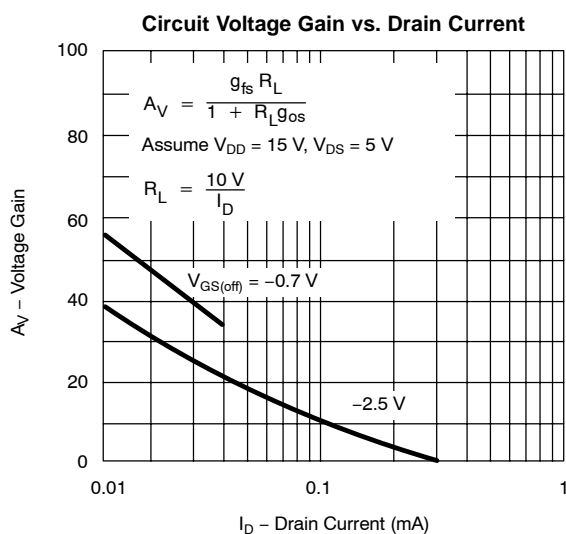
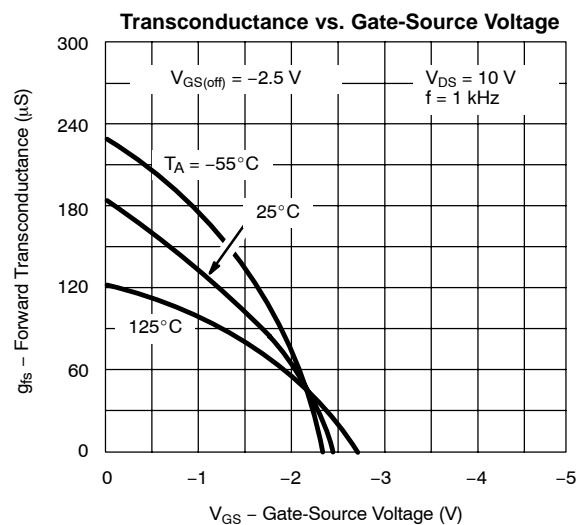
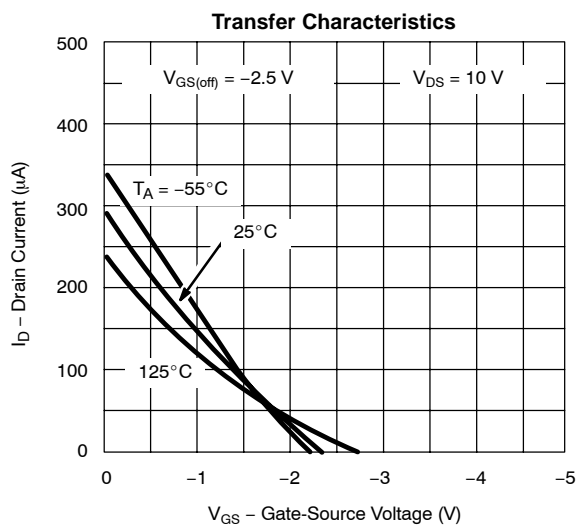
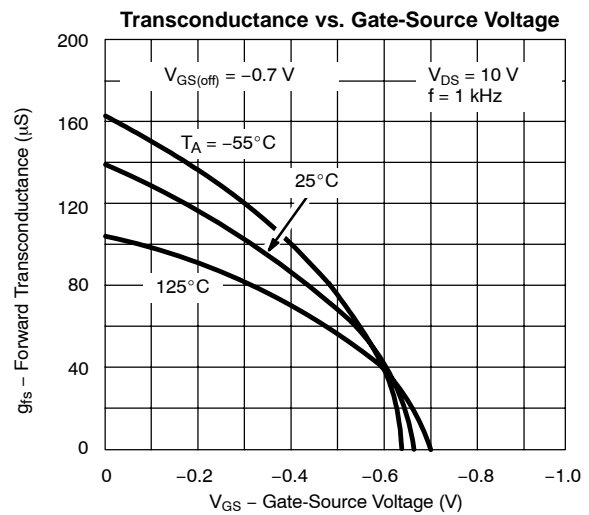
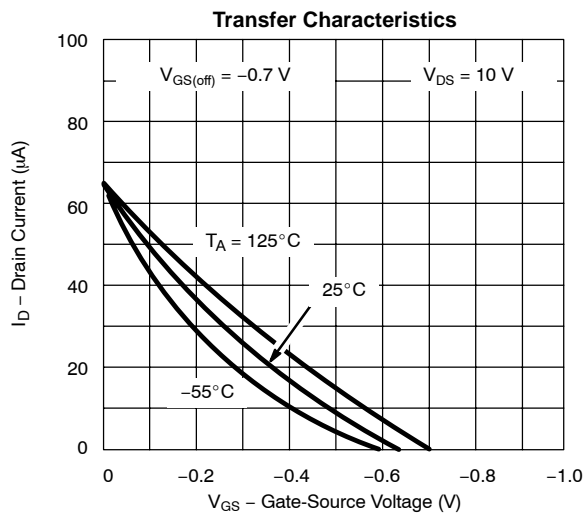
NT



**TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  UNLESS OTHERWISE NOTED)**



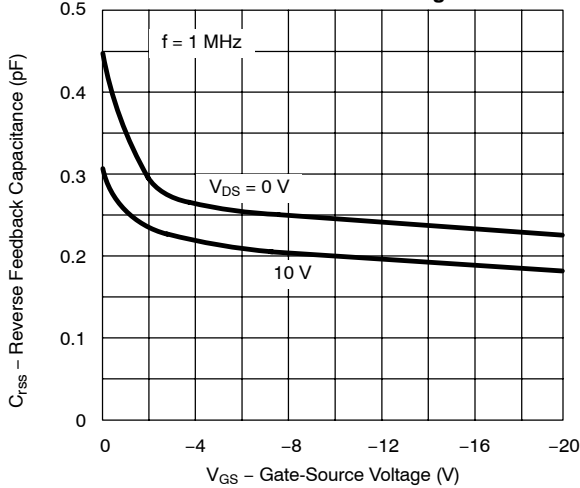
### TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)



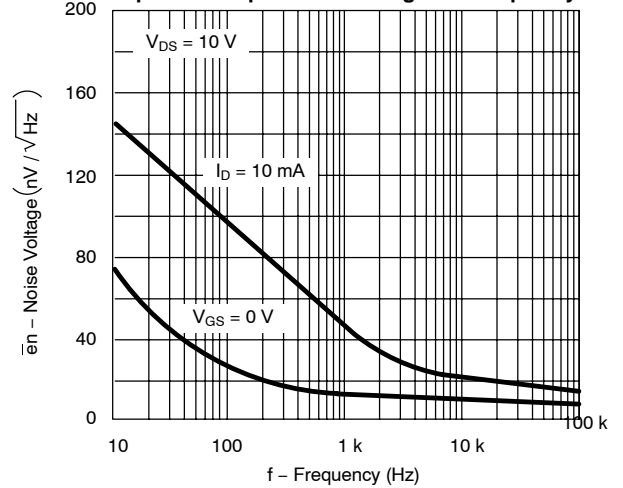


**TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  UNLESS OTHERWISE NOTED)**

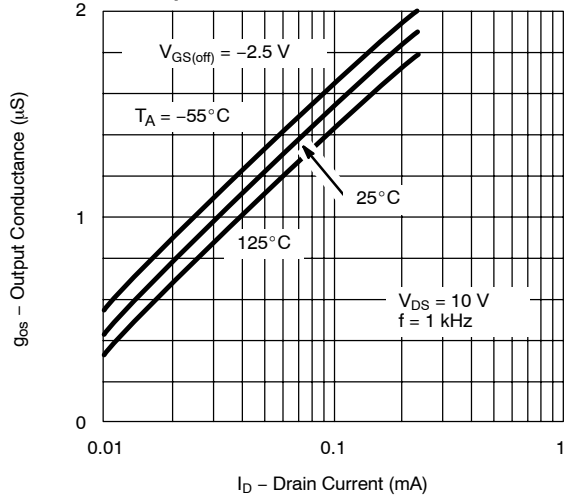
**Common-Source Reverse Feedback Capacitance vs. Gate-Source Voltage**



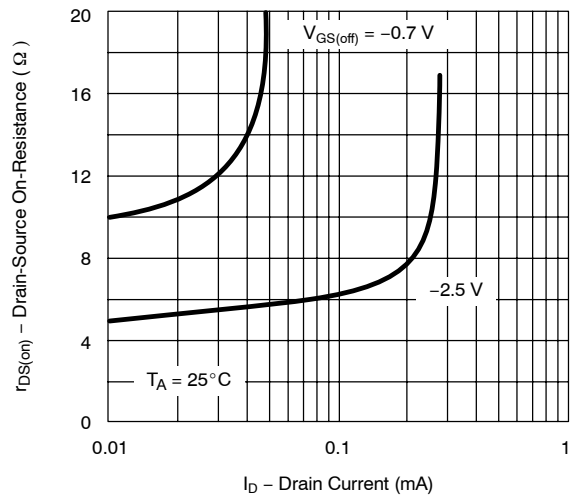
**Equivalent Input Noise Voltage vs. Frequency**



**Output Conductance vs. Drain Current**



**On-Resistance vs. Drain Current**





## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.