



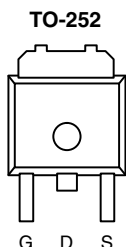
P-Channel 80-V (D-S) 175 °C MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A) ^a	Q_g (Typ)
- 80	0.0252 at $V_{GS} = - 10$ V	- 50	55 nC
	0.029 at $V_{GS} = - 4.5$ V	- 47	

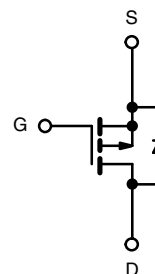
FEATURES

- TrenchFET[®] Power MOSFET

RoHS
COMPLIANT

Top View

Drain Connected to Tab



P-Channel MOSFET

Ordering Information: SUD50P08-25L-E3 (Lead (Pb)-free)

ABSOLUTE MAXIMUM RATINGS $T_A = 25$ °C, unless otherwise noted

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	- 80	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 175$ °C)	$T_C = 25$ °C	I_D	- 50 ^a	A
	$T_C = 70$ °C		- 42.5 ^a	
	$T_A = 25$ °C		- 12.5 ^{b, c}	
	$T_A = 70$ °C		- 10.5 ^{b, c}	
Pulsed Drain Current		I_{DM}	- 40	
Continuous Source-Drain Diode Current	$T_C = 25$ °C	I_S	- 50 ^a	
	$T_A = 25$ °C		- 6.9 ^{b, c}	
Avalanche Current	L = 0.1 mH	I_{AS}	- 45	mJ
Single-Pulse Avalanche Energy		E_{AS}	101	
Maximum Power Dissipation	$T_C = 25$ °C	P_D	136	W
	$T_C = 70$ °C		95	
	$T_A = 25$ °C		8.3 ^{b, c}	
	$T_A = 70$ °C		5.8 ^{b, c}	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	- 55 to 175	°C

THERMAL RESISTANCE RATINGS

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^{b, d}	$t \leq 10$ sec	R_{thJA}	15	18	°C/W
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	0.85	1.1	

Notes:

a. Package limited.

b. Surface mounted on 1" x 1" FR4 board.

c. $t = 10$ sec.

d. Maximum under steady state conditions is 40 °C/W.

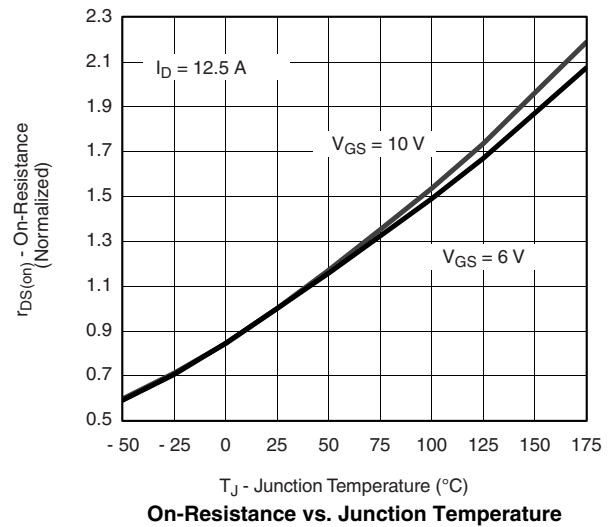
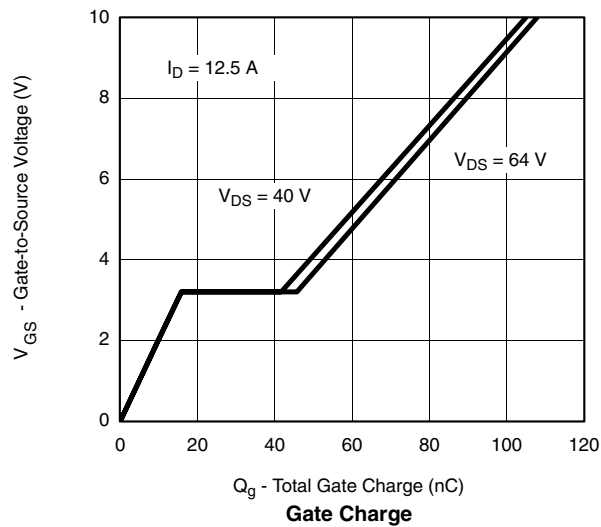
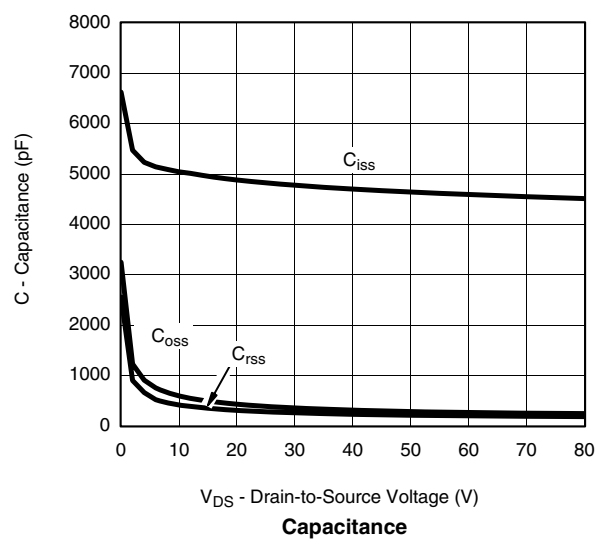
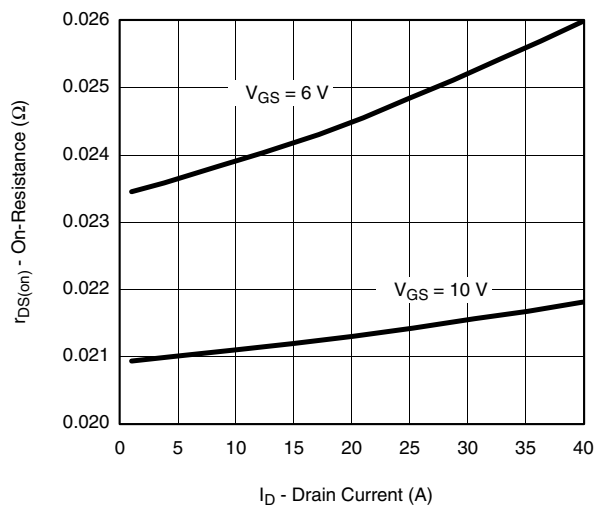
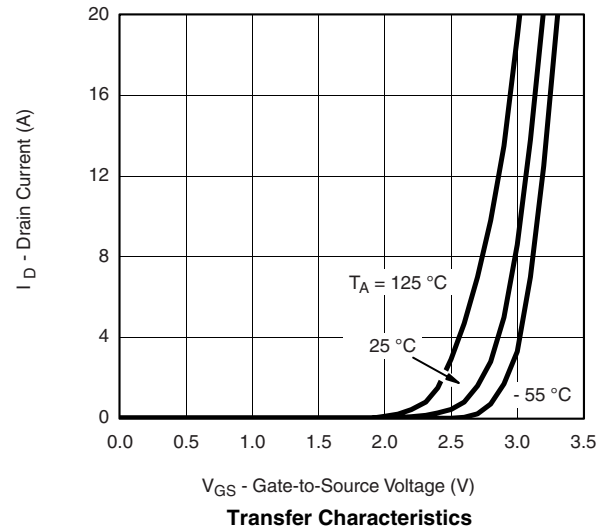
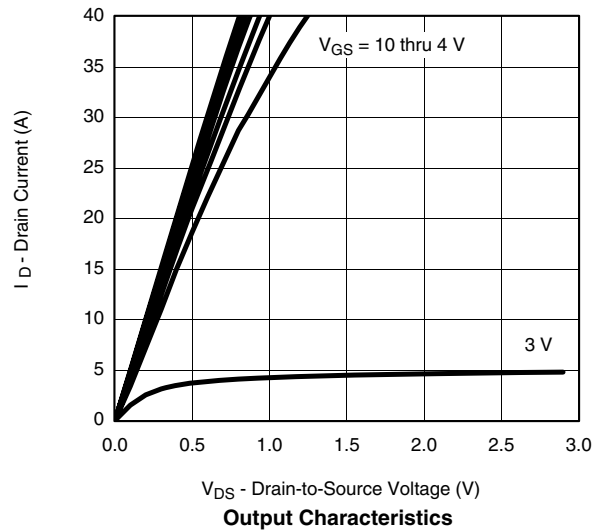
SPECIFICATIONS T _J = 25 °C, unless otherwise noted						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} = 0 V, I _D = - 250 μA	- 80			V
V _{DS} Temperature Coefficient	ΔV _{DS} /T _J	I _D = - 250 μA		- 73		mV/°C
V _{GS(th)} Temperature Coefficient	ΔV _{GS(th)} /T _J			- 5.5		
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = - 250 μA	- 1		- 3	V
Gate-Source Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = - 80 V, V _{GS} = 0 V			- 1	μA
		V _{DS} = - 80 V, V _{GS} = 0 V, T _J = 55 °C			- 10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = - 10 V				A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = - 10 V, I _D = - 12.5 A		0.021	0.0252	Ω
		V _{GS} = - 4.5 V, I _D = - 10.5 A		0.024	0.029	
Forward Transconductance ^a	g _{fs}	V _{DS} = - 15 V, I _D = - 12.5 A		52		S
Dynamic ^b						
Input Capacitance	C _{iss}	V _{DS} = - 40 V, V _{GS} = 0 V, f = 1 MHz		4700		pF
Output Capacitance	C _{oss}			320		
Reverse Transfer Capacitance	C _{rss}			235		
Total Gate Charge	Q _g	V _{DS} = - 40 V, V _{GS} = - 10 V, I _D = - 12.5 A		105	160	nC
		V _{DS} = - 40 V, V _{GS} = - 4.5 V, I _D = - 12.5 A		55	85	
Gate-Source Charge	Q _{gs}			16		
Gate-Drain Charge	Q _{gd}			26		
Gate Resistance	R _g	f = 1 MHz		4		Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = - 40 V, R _L = 3.8 Ω I _D ≅ - 10.5 A, V _{GEN} = - 10 V, R _g = 1 Ω		45	70	ns
Rise Time	t _r			220	330	
Turn-Off Delay Time	t _{d(off)}			95	145	
Fall Time	t _f			110	165	
Turn-On Delay Time	t _{d(on)}	V _{DD} = - 40 V, R _L = 3.8 Ω I _D ≅ - 10.5 A, V _{GEN} = - 4.5 V, R _g = 1 Ω		15	25	ns
Rise Time	t _r			25	40	
Turn-Off Delay Time	t _{d(off)}			105	160	
Fall Time	t _f			100	150	
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I _S	T _C = 25 °C			- 50	A
Pulse Diode Forward Current ^a	I _{SM}				- 40	
Body Diode Voltage	V _{SD}	I _S = - 10.5 A		- 0.8	- 1.2	V
Body Diode Reverse Recovery Time	t _{rr}	I _F = - 10.5 A, di/dt = 100 A/μs, T _J = 25 °C		55	85	ns
Body Diode Reverse Recovery Charge	Q _{rr}			110	165	nC
Reverse Recovery Fall Time	t _a			37		ns
Reverse Recovery Rise Time	t _b			18		

Notes:

a. Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.

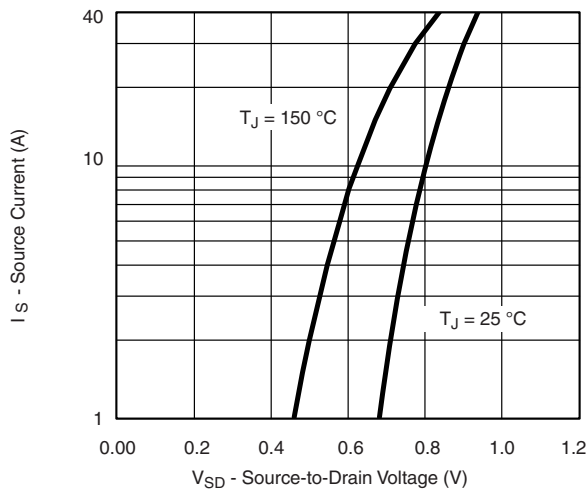
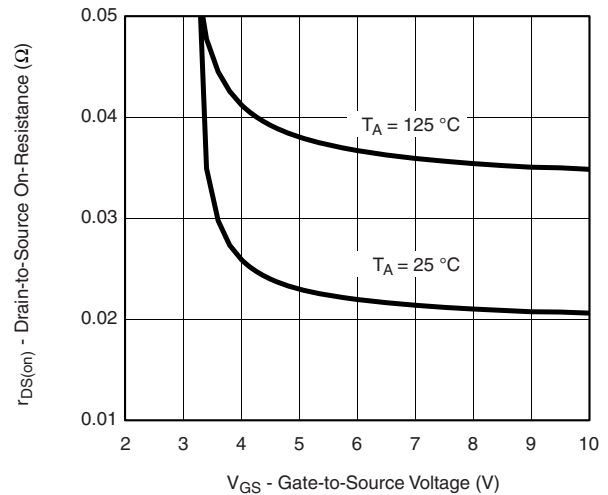
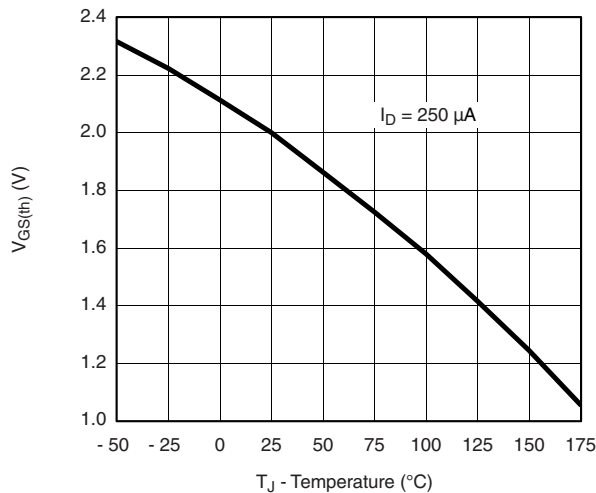
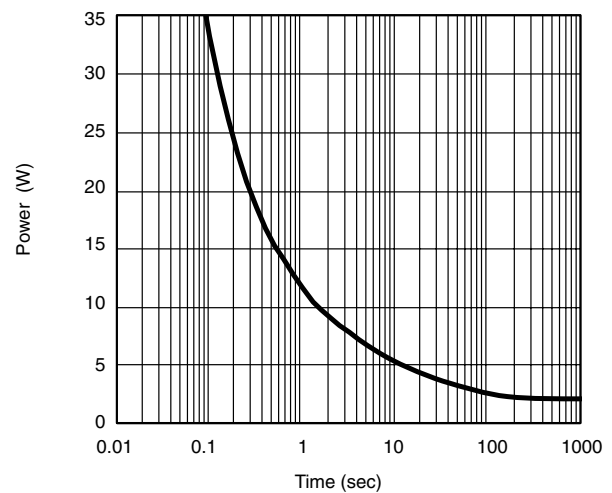
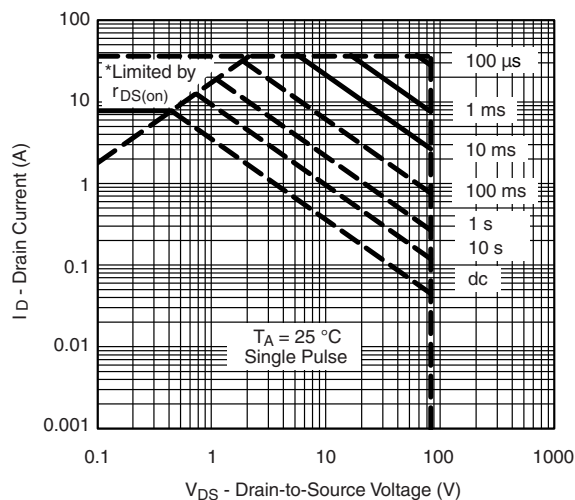
b. Guaranteed by design, not subject to production testing.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

**TYPICAL CHARACTERISTICS** 25 °C unless noted

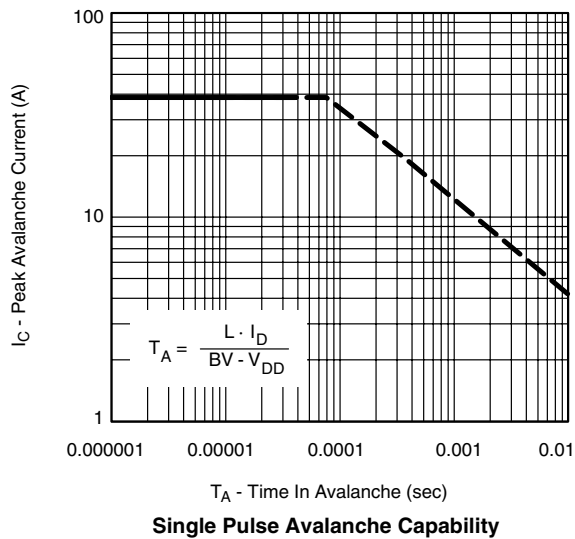
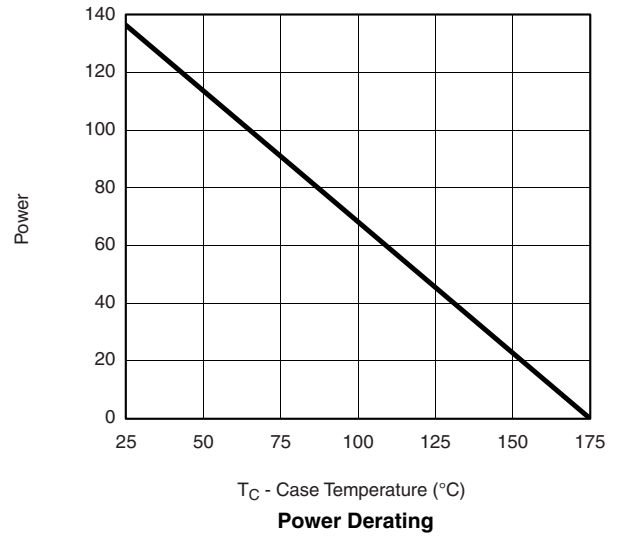
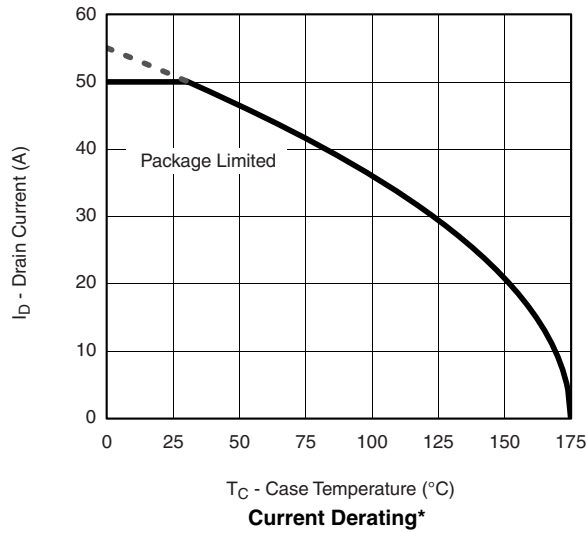
SUD50P08-25L

Vishay Siliconix

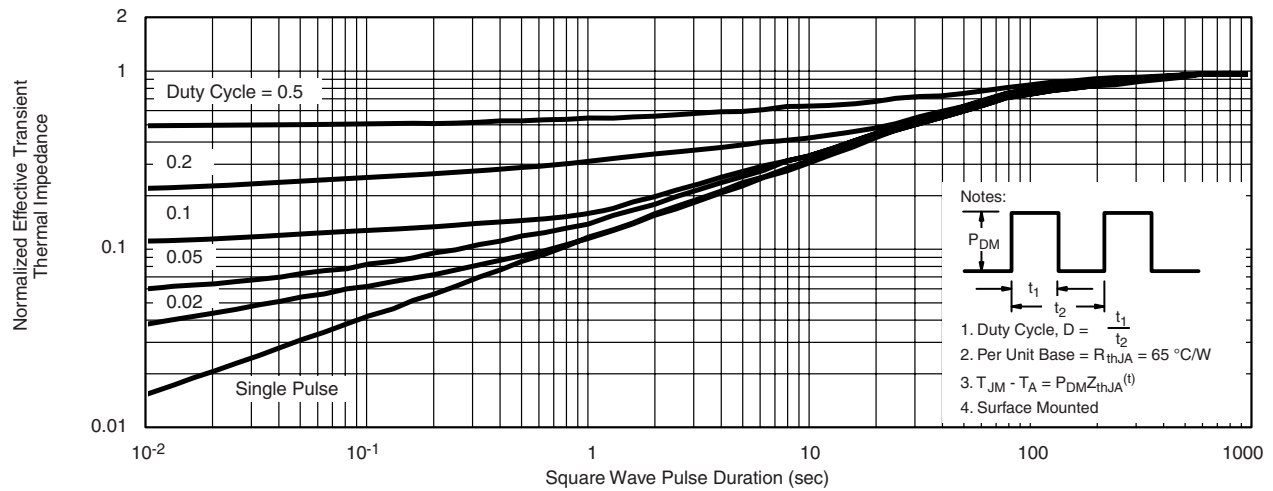
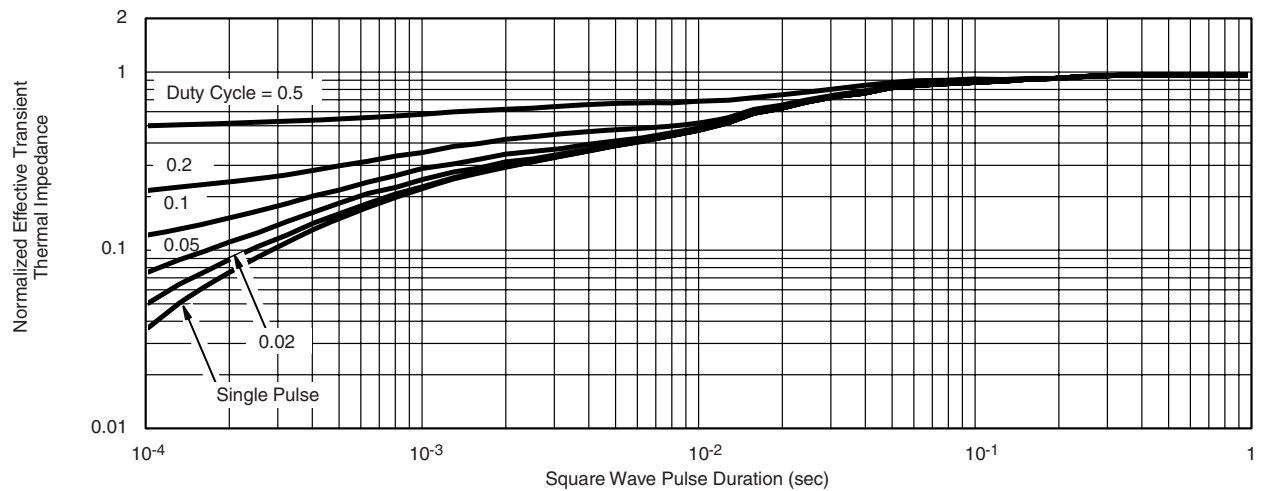
**TYPICAL CHARACTERISTICS** 25 °C unless noted**Source-Drain Diode Forward Voltage****On-Resistance vs. Gate-to-Source Voltage****Threshold Voltage****Single Pulse Power, Junction-to-Ambient*** $V_{GS} >$ minimum V_{GS} at which $r_{DS(on)}$ is specified**Safe Operating Area, Junction-to-Ambient**



TYPICAL CHARACTERISTICS 25 °C unless noted



*The power dissipation P_D is based on $T_{J(max)} = 175$ °C, using junction-to-case thermal resistance, and is more useful in settling the upper dissipation limit for cases where additional heatsinking is used. It is used to determine the current rating, when this rating falls below the package limit.

**TYPICAL CHARACTERISTICS** 25 °C unless noted**Normalized Thermal Transient Impedance, Junction-to-Ambient****Normalized Thermal Transient Impedance, Junction-to-Case**

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package/tape drawings, part marking, and reliability data, see <http://www.vishay.com/ppg?73443>.



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.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru