

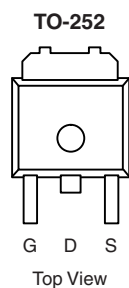
N-Channel 60-V (D-S) 175 °C MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A) ^c	Q_g (Typ)
60	0.0078 at $V_{GS} = 10$ V	93	94

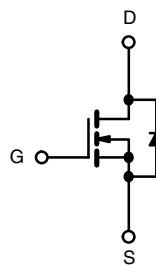
FEATURES

- TrenchFET[®] Power MOSFET
- 175 °C Junction Temperature
- 100 % R_g Tested
- High Threshold at High Temperature


RoHS
COMPLIANT


Drain Connected to Tab

Ordering Information: SUD50N06-08H0-E3 (Lead (Pb)-free)



N-Channel MOSFET

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ($T_J = 175$ °C) ^b	I_D	$T_C = 25$ °C 93 ^c	A
		$T_C = 125$ °C 54 ^c	
Pulsed Drain Current	I_{DM}	100	
Continuous Source Current (Diode Conduction)	I_S	91 ^c	
Avalanche Current, Single Pulse	I_{AS}	50	
Avalanche Energy	E_{AS}	125	mJ
Maximum Power Dissipation	P_D	$T_C = 25$ °C 136 ^b	W
		$T_A = 25$ °C 3 ^a	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to 175	°C

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Typical	Maximum	Unit
Junction-to-Ambient ^a	R_{thJA}	$t \leq 10$ sec 15	18	°C/W
		Steady State 40	50	
Junction-to-Case	R_{thJC}	0.85	1.1	

Notes:

a. Surface Mounted on 1" x 1" FR4 Board.

b. See SOA curve for voltage derating.

c. Calculate continuous current based on maximum allowable junction temperature when using infinite heat sink. Package limitation current is 50 A.

SPECIFICATIONS $T_J = 25\text{ }^{\circ}\text{C}$, unless otherwise noted						
Parameter	Symbol	Test Conditions	Min	Typ ^a	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$, $I_D = 250\text{ }\mu\text{A}$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\text{ }\mu\text{A}$	3.4		4.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}$, $V_{GS} = \pm 20\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60\text{ V}$, $V_{GS} = 0\text{ V}$			1	μA
		$V_{DS} = 60\text{ V}$, $V_{GS} = 0\text{ V}$, $T_J = 125\text{ }^{\circ}\text{C}$			50	
		$V_{DS} = 60\text{ V}$, $V_{GS} = 0\text{ V}$, $T_J = 175\text{ }^{\circ}\text{C}$			250	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} = 5\text{ V}$, $V_{GS} = 10\text{ V}$	50			A
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 20\text{ A}$		0.0065	0.0078	Ω
		$V_{GS} = 10\text{ V}$, $I_D = 20\text{ A}$, $T_J = 125\text{ }^{\circ}\text{C}$			0.013	
		$V_{GS} = 10\text{ V}$, $I_D = 20\text{ A}$, $T_J = 175\text{ }^{\circ}\text{C}$			0.0156	
Forward Transconductance ^b	g_{fs}	$V_{DS} = 15\text{ V}$, $I_D = 20\text{ A}$		25		S
Dynamic ^a						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $F = 1\text{ MHz}$		7000		pF
Output Capacitance	C_{oss}			450		
Reverse Transfer Capacitance	C_{rss}			240		
Gate Resistance	R_g	$f = 1\text{ MHz}$	0.75	1.5	2.3	Ω
Total Gate Charge ^c	Q_g	$V_{DS} = 30\text{ V}$, $V_{GS} = 10\text{ V}$, $I_D = 50\text{ A}$		94	145	nC
Gate-Source Charge ^c	Q_{gs}			35		
Gate-Drain Charge ^c	Q_{gd}			20		
Turn-On Delay Time ^c	$t_{d(on)}$	$V_{DD} = 30\text{ V}$, $R_L = 0.6\text{ }\Omega$ $I_D \cong 50\text{ A}$, $V_{GEN} = 10\text{ V}$, $R_g = 2.5\text{ }\Omega$		28	45	ns
Rise Time ^c	t_r			13	20	
Turn-Off Delay Time ^c	$t_{d(off)}$			50	75	
Fall Time ^c	t_f			10	15	
Source-Drain Diode Ratings and Characteristics ($T_C = 25\text{ }^{\circ}\text{C}$)						
Pulsed Current	I_{SM}				100	A
Diode Forward Voltage ^b	V_{SD}	$I_F = 50\text{ A}$, $V_{GS} = 0\text{ V}$		1.0	1.5	V
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 50\text{ A}$, $di/dt = 100\text{ A}/\mu\text{s}$		45	70	ns

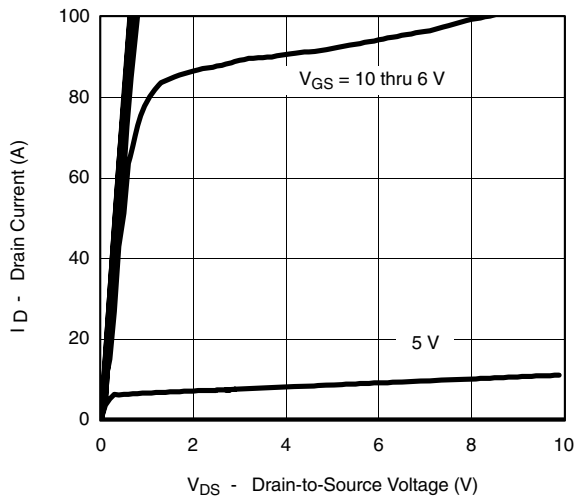
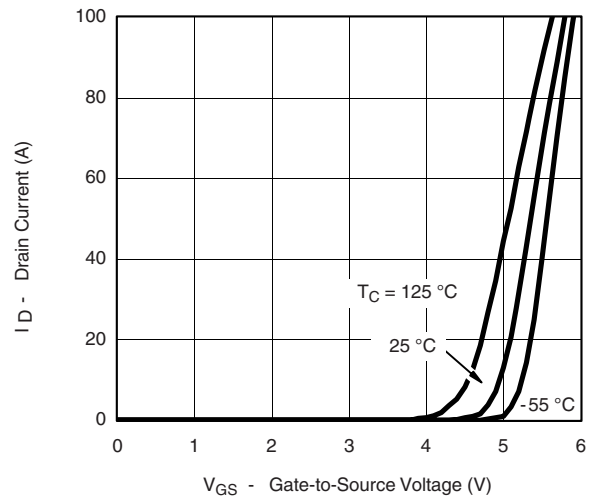
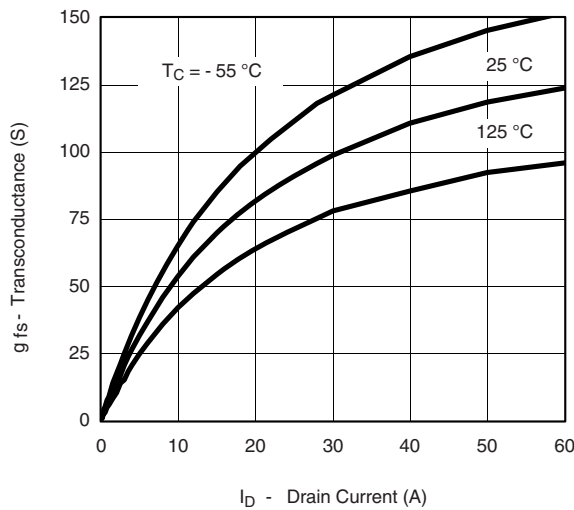
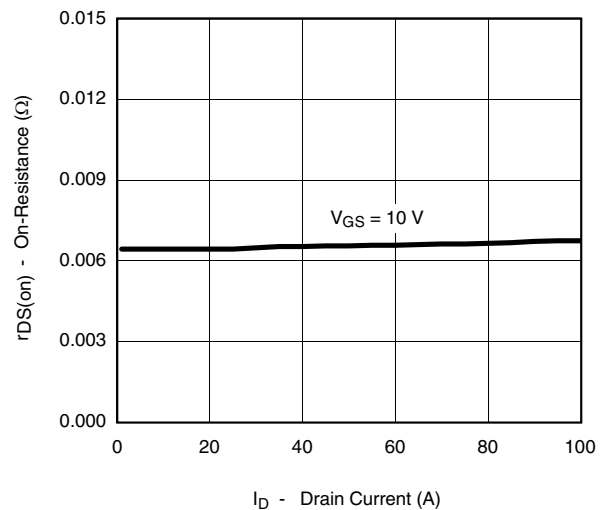
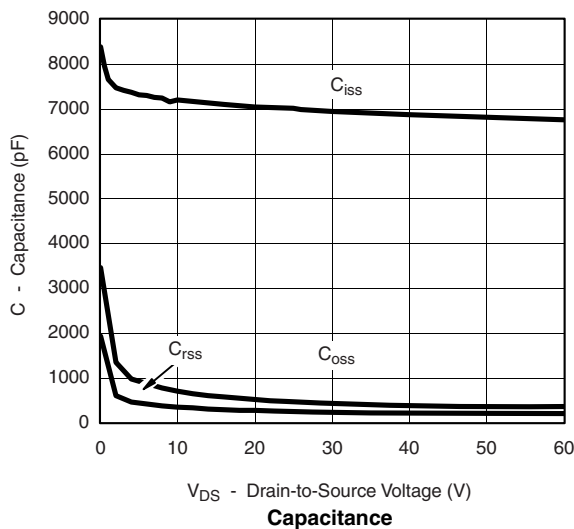
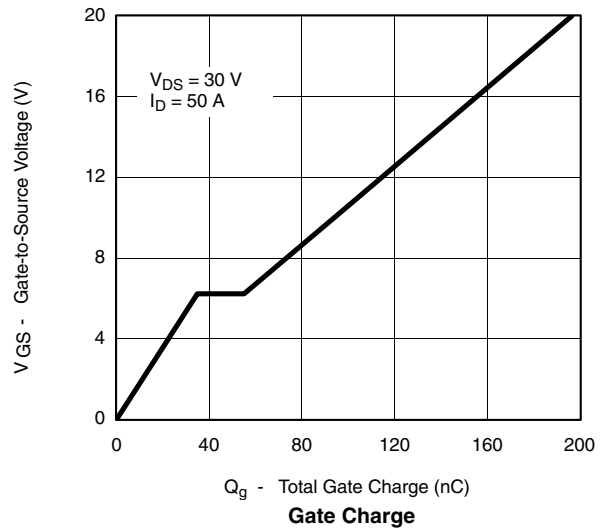
Notes:

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

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

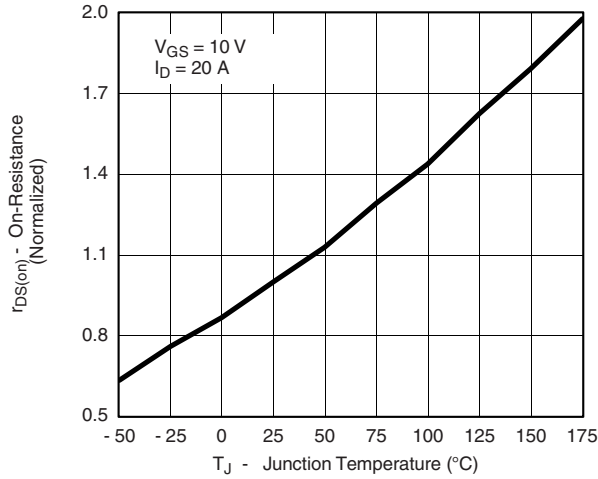
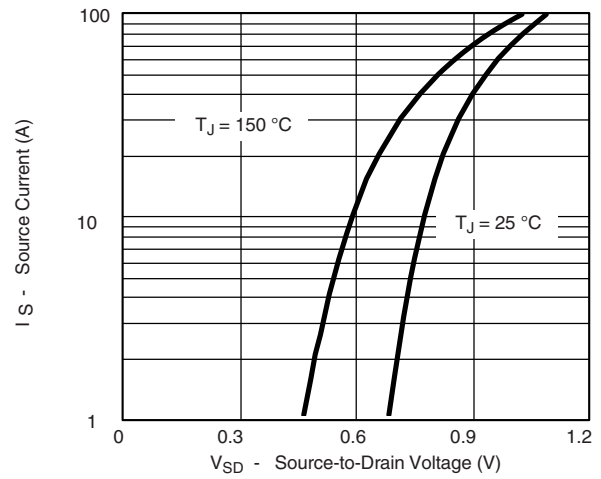
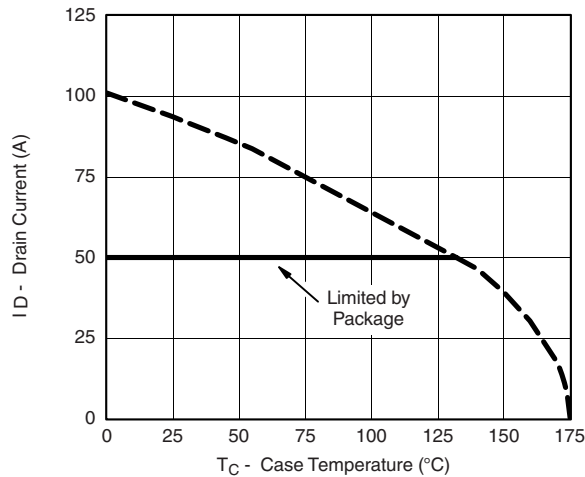
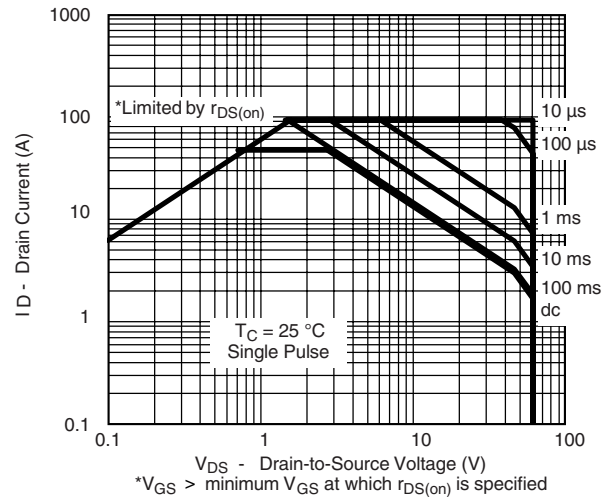
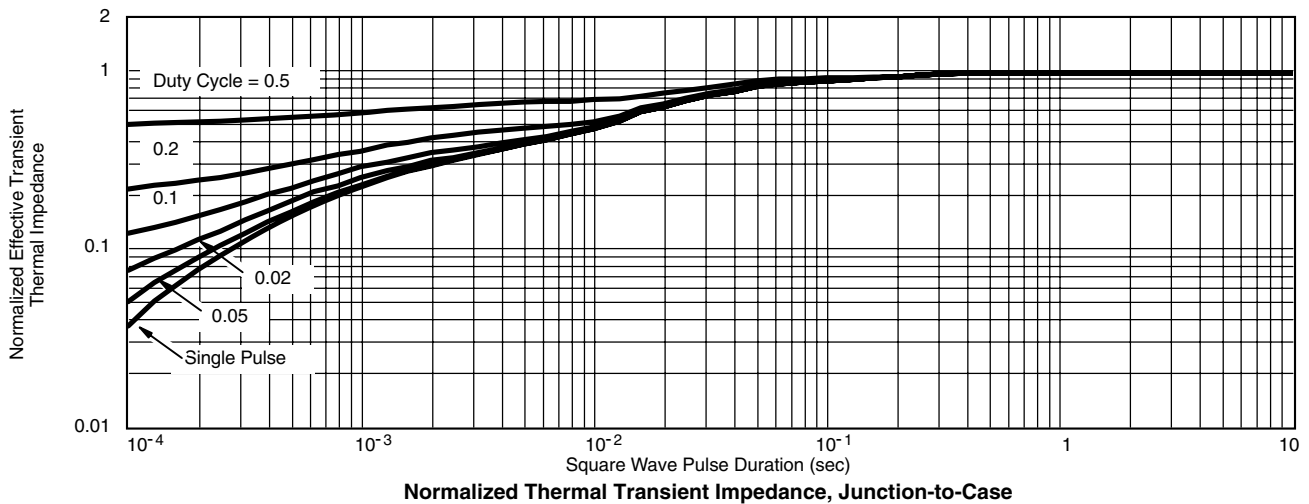
c. Independent of operating temperature.

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 otherwise noted**Output Characteristics****Transfer Characteristics****Transconductance****On-Resistance vs. Drain Current****Capacitance****Gate Charge**

SUD50N06-08H

Vishay Siliconix

**TYPICAL CHARACTERISTICS** 25 °C, unless otherwise noted**On-Resistance vs. Junction Temperature****Source-Drain Diode Forward Voltage****THERMAL RATINGS****Maximum Avalanche Drain Current vs. Case Temperature****Safe Operating Area****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/ppg73160>.



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