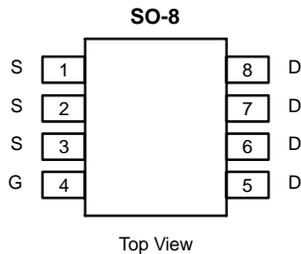




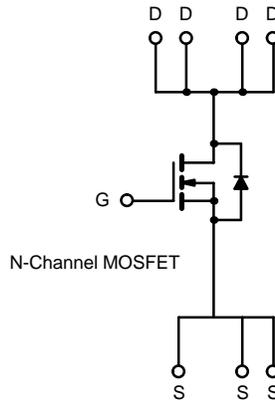
N-Channel Reduced Q_g , Fast Switching MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.0185 @ $V_{GS} = 10$ V	9
	0.033 @ $V_{GS} = 4.5$ V	7

TrenchFET[®]
Power MOSFETs
High-Efficiency
PWM Optimized



Ordering Information: Si4800DY
Si4800DY-T1 (with Tape and Reel)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 25	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^{a, b}	$T_A = 25^\circ\text{C}$	I_D	9	A
	$T_A = 70^\circ\text{C}$		7	
Pulsed Drain Current (10 μs Pulse Width)		I_{DM}	40	
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	2.3	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	2.5	W
	$T_A = 70^\circ\text{C}$		1.6	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient (MOSFET) ^a	$t \leq 10$ sec	R_{thJA}		50	$^\circ\text{C/W}$
	Steady State		70		

Notes

- a. Surface Mounted on FR4 Board.
- b. $t \leq 10$ sec.

MOSFET SPECIFICATIONS (T_J = 25° C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.8			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V			1	μA
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 55° C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 9 A		0.0155	0.0185	Ω
		V _{GS} = 4.5 V, I _D = 7 A		0.0275	0.033	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 9 A		16		S
Diode Forward Voltage ^a	V _{SD}	I _S = 2.3 A, V _{GS} = 0 V		0.71	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 5.0 V, I _D = 9 A		8.7	13	nC
Gate-Source Charge	Q _{gs}			2.25		
Gate-Drain Charge	Q _{gd}			4.2		
Gate Resistance	R _g		0.5	1.5	2.6	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15 V, R _L = 15 Ω I _D = 1 A, V _{GEN} = 10 V, R _G = 6 Ω		11	16	ns
Rise Time	t _r			8	15	
Turn-Off Delay Time	t _{d(off)}			22	30	
Fall Time	t _f			9	15	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2.3 A, di/dt = 100 A/μs		50	80	

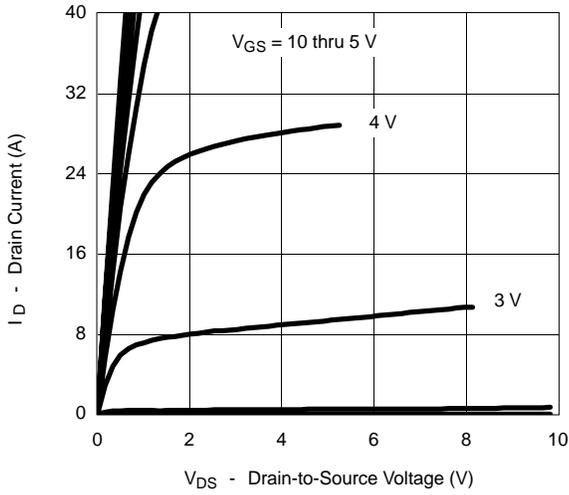
Notes

- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

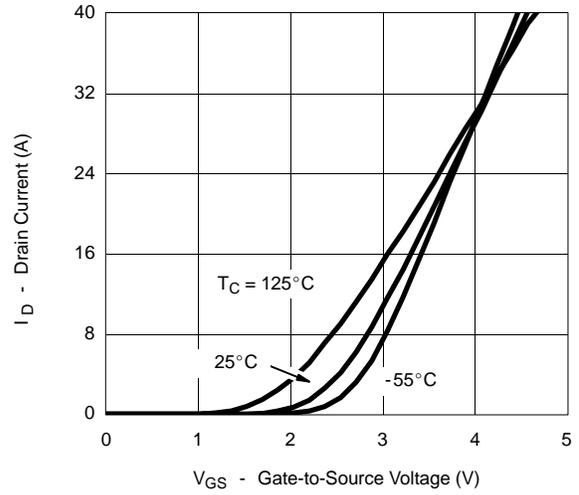


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

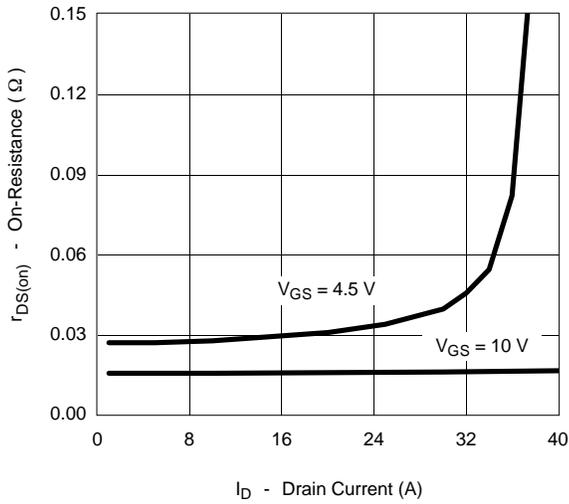
Output Characteristics



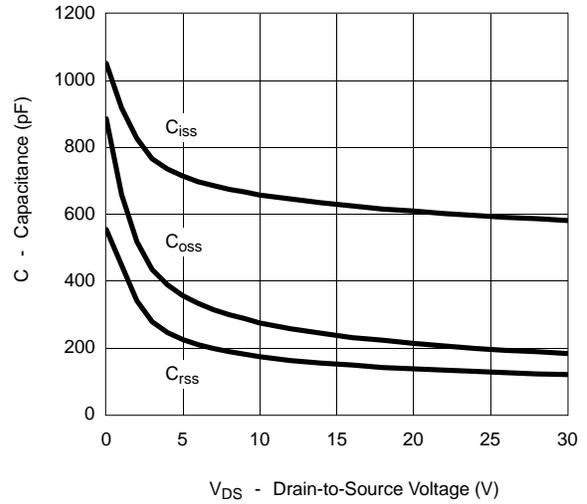
Transfer Characteristics



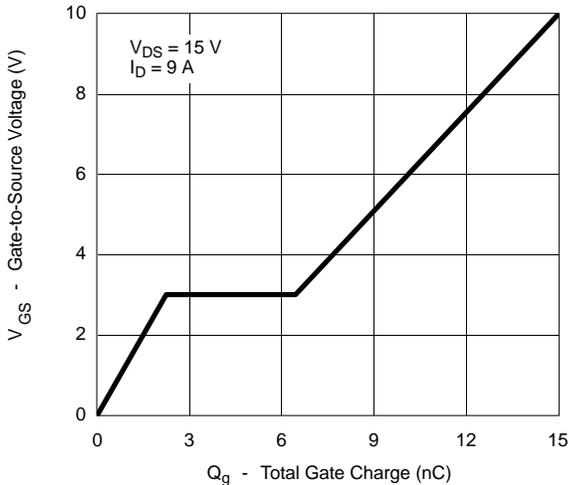
On-Resistance vs. Drain Current



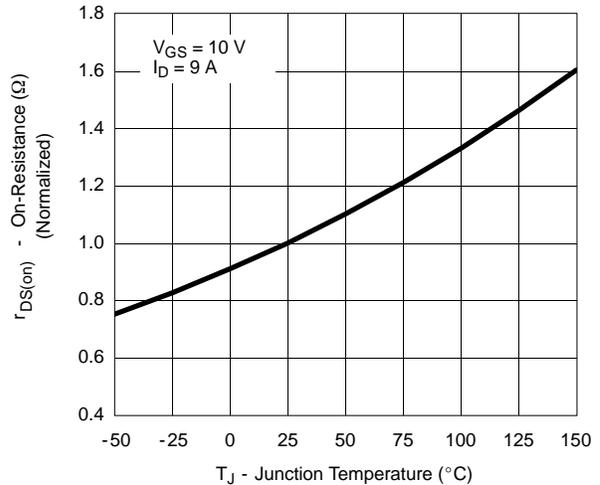
Capacitance



Gate Charge

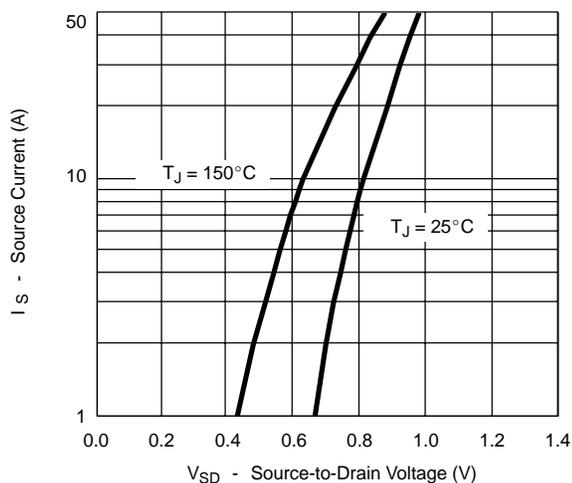


On-Resistance vs. Junction Temperature

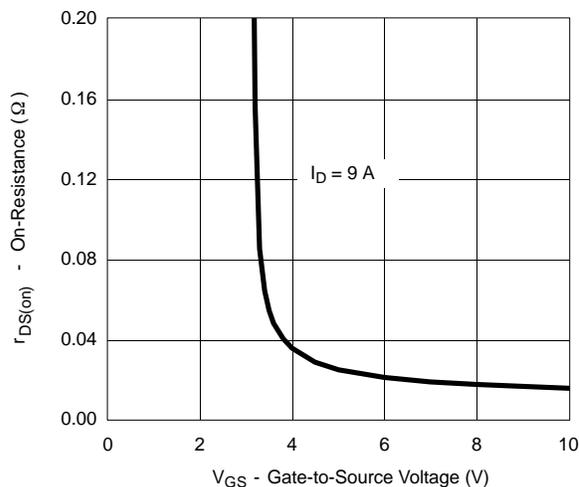


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

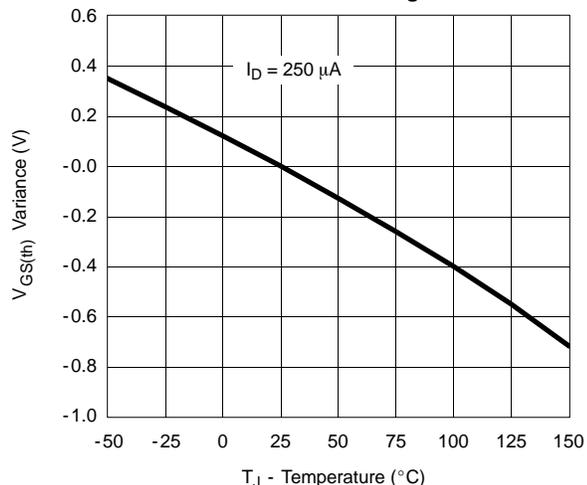
Source-Drain Diode Forward Voltage



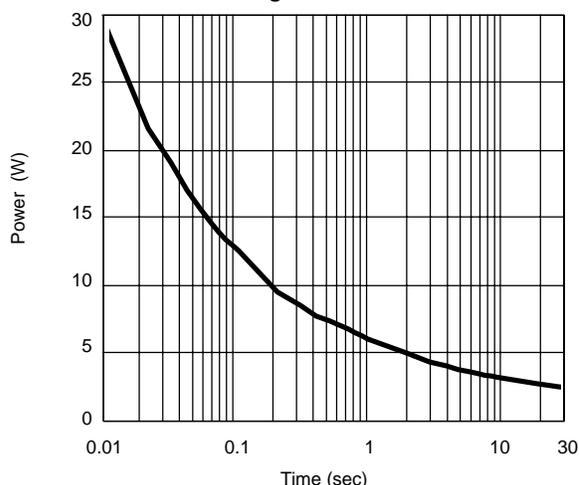
On-Resistance vs. Gate-to-Source Voltage



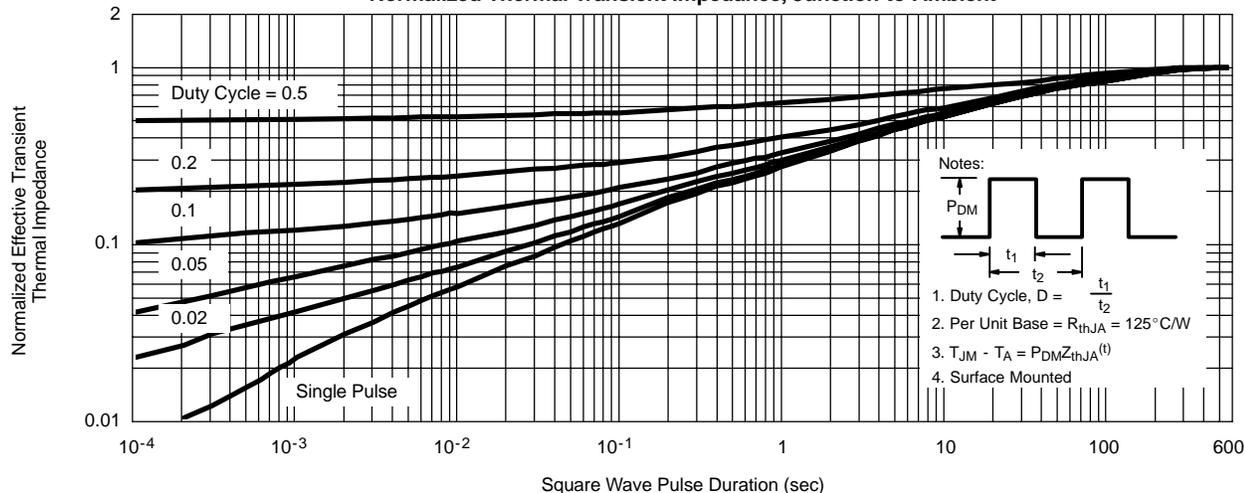
Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.