

Vishay Siliconix

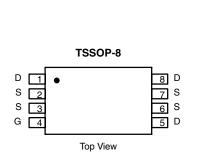
N-Channel 2.5-V (G-S) MOSFET

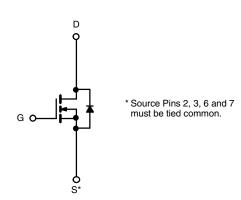
PRODUCT SUMMARY					
V _{DS} (V)	R_{DS(on)} (Ω)	I _D (A)			
20	0.014 at V _{GS} = 4.5 V	8.1			
	0.020 at V _{GS} = 2.5 V	6.6			

FEATURES

- Halogen-free
- TrenchFET[®] Power MOSFETs
- 100 % R_g Tested







Ordering Information: Si6466ADQ-T1-GE3 (Lead (Pb)-free and Halogen-free)

N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS $T_A = 25 \text{ °C}$, unless otherwise noted						
Parameter		Symbol	10 s	Steady State	Unit	
Drain-Source Voltage		V _{DS}	20		v	
Gate-Source Voltage		V _{GS}	± 8			
Continuous Drain Current (T ₁ = 150 °C) ^a	T _A = 25 °C	- I _D	8.1	6.8		
Continuous Drain Current $(T_j = 150^{\circ} \text{ C})^{\circ}$	T _A = 70 °C		6.6	5.4		
Pulsed Drain Current (10 µs Pulse Width)		I _{DM}	30		A	
Continuous Source Current (Diode Conduction) ^a		۱ _S	1.35	0.95	1	
Mariana Dissisationa	T _A = 25 °C	– P _D	1.5	1.05	W	
Maximum Power Dissipation ^a	T _A = 70 °C		1.0	0.67		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
	t ≤ 10 s	R _{thJA}	65	83	
Maximum Junction-to-Ambient ^a	Steady State		100	120	°C/W
Maximum Junction-to-Foot	Steady State		43	52]

Notes:

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

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Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static							
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}$, $I_D = 250 \ \mu A$	0.45			V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			± 100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	$V_{DS} = 16 V, V_{GS} = 0 V$			1		
		V_{DS} = 16 V, V_{GS} = 0 V, T_{J} = 70 °C			10	μA	
On-State Drain Current ^a	I _{D(on)}	$V_{DS} = 5 V, V_{GS} = 4.5 V$ 20				А	
Drain-Source On-State Resistance ^a	R _{DS(on)}	V _{GS} = 4.5 V, I _D = 8.1 A		0.011	0.014		
		$V_{GS} = 2.5 \text{ V}, \text{ I}_{D} = 6.6 \text{ A}$		0.017	0.020	Ω	
Forward Transconductance ^a	9 _{fs}	$V_{DS} = 10 \text{ V}, \text{ I}_{D} = 8.1 \text{ A}$		30		S	
Diode Forward Voltage ^a	V _{SD}	$I_{S} = 1.35 \text{ A}, V_{GS} = 0 \text{ V}$		0.65	1.1	V	
Dynamic ^b							
Total Gate Charge	Qg			18	27	nC	
Gate-Source Charge	Q _{gs}	V_{DS} = 10 V, V_{GS} = 5 V, I_{D} = 8.1 A		3.2			
Gate-Drain Charge	Q _{gd}			4		1	
Gate Resistance	Rg		0.5		1.8	Ω	
Turn-On Delay Time	t _{d(on)}			27	45		
Rise Time	t _r	V_{DD} = 10 V, R_L = 10 Ω		34	50		
Turn-Off Delay Time	t _{d(off)}	$I_D \cong$ 1 A, V_{GEN} = 4.5 V, R_G = 6 Ω		76	120	ns	
Fall Time	t _f			30	50		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.5 A, di/dt = 100 A/μs		35	70		

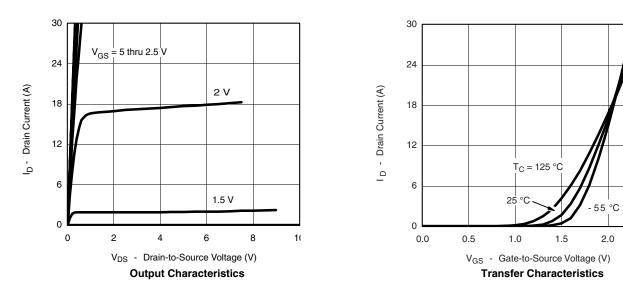
Notes:

a. Pulse test; pulse width \leq 300 µs, 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 otherwise noted



2.5

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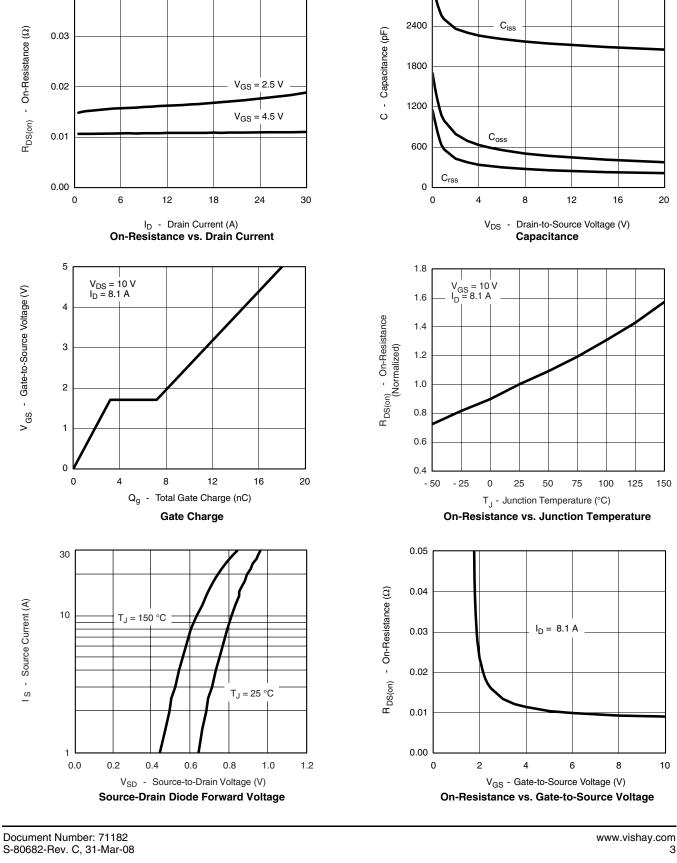
16

125

150

20

3000



TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted

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Gate-to-Source Voltage (V)

0.04

8

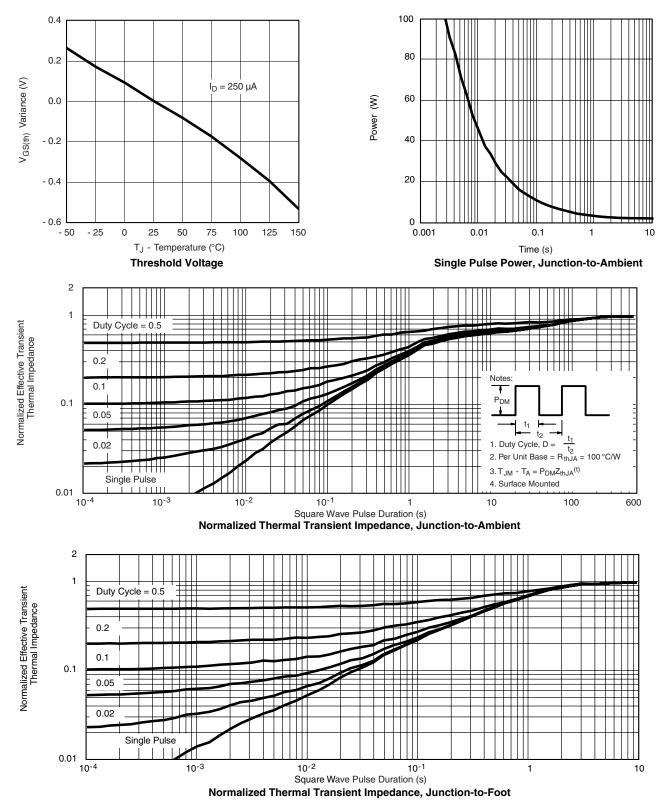
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TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



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?71182.

/ISHA



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