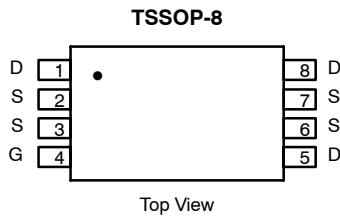


## N-Channel 2.5-V (G-S) MOSFET

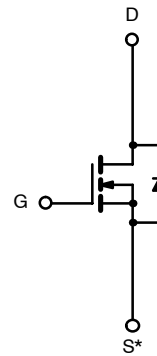
PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
20	0.014 @ $V_{GS} = 4.5$ V	8.1
	0.020 @ $V_{GS} = 2.5$ V	6.6

### FEATURES

- TrenchFET® Power MOSFET
- 100%  $R_g$  Tested



Ordering Information: Si6466ADQ-T1



\* Source Pins 2, 3, 6 and 7 must be tied common.

N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		$V_{DS}$	20		V
Gate-Source Voltage		$V_{GS}$	$\pm 8$		
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$T_A = 25^\circ\text{C}$	$I_D$	8.1	6.8	A
	$T_A = 70^\circ\text{C}$		6.6	5.4	
Pulsed Drain Current (10 $\mu\text{s}$ Pulse Width)		$I_{DM}$	30		
Continuous Source Current (Diode Conduction) <sup>a</sup>		$I_S$	1.35	0.95	W
Maximum Power Dissipation <sup>a</sup>	$T_A = 25^\circ\text{C}$	$P_D$	1.5	1.05	
	$T_A = 70^\circ\text{C}$		1.0	0.67	
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 <sup>a</sup>	$t \leq 10$ sec	$R_{thJA}$	65	83	$^\circ\text{C/W}$
	Steady State		100	120	
Maximum Junction-to-Foot	Steady State	$R_{thJF}$	43	52	

Notes

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

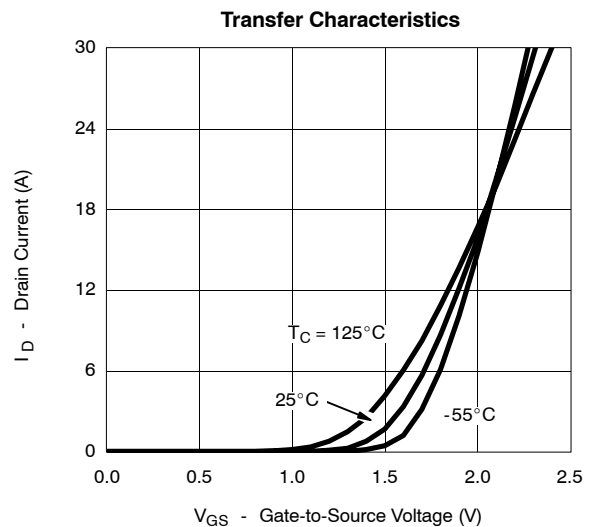
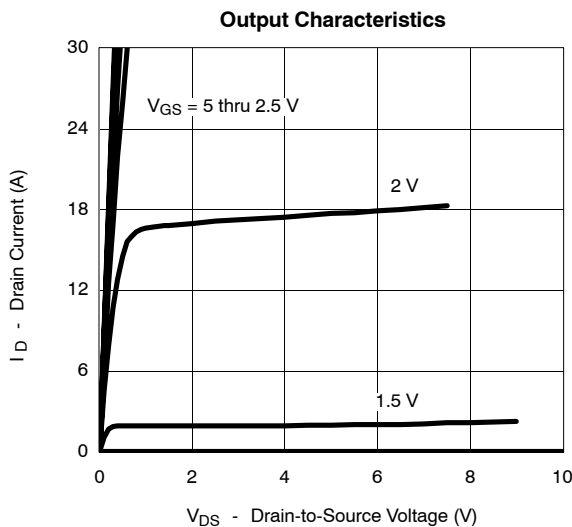


<b>SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	0.45			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ± 8 V			± 100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 16 V, V <sub>GS</sub> = 0 V			1	μA
		V <sub>DS</sub> = 16 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C			10	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 4.5 V	20			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 8.1 A		0.011	0.014	Ω
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 6.6 A		0.017	0.020	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 8.1 A		30		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.35 A, V <sub>GS</sub> = 0 V		0.65	1.1	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 5 V, I <sub>D</sub> = 8.1 A		18	27	nC
Gate-Source Charge	Q <sub>gs</sub>			3.2		
Gate-Drain Charge	Q <sub>gd</sub>			4		
Gate Resistance	R <sub>g</sub>		0.5		1.8	Ω
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 4.5 V, R <sub>G</sub> = 6 Ω		27	45	ns
Rise Time	t <sub>r</sub>			34	50	
Turn-Off Delay Time	t <sub>d(off)</sub>			76	120	
Fall Time	t <sub>f</sub>			30	50	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.5 A, di/dt = 100 A/μs		35	70	

Notes

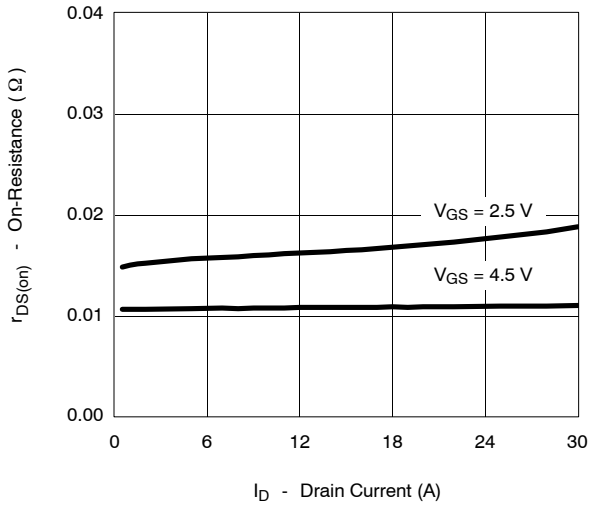
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**

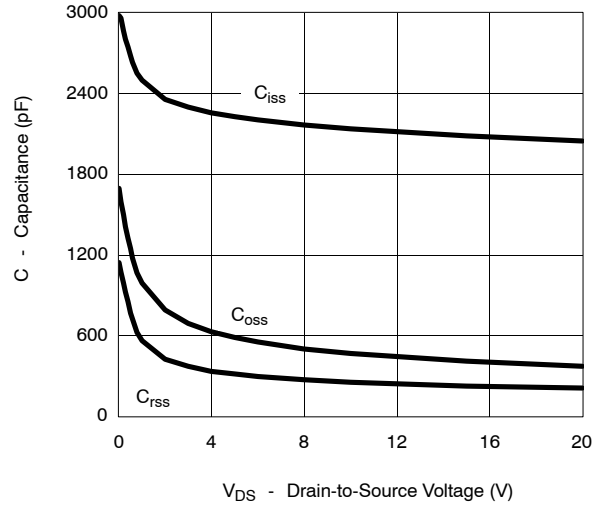


**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**

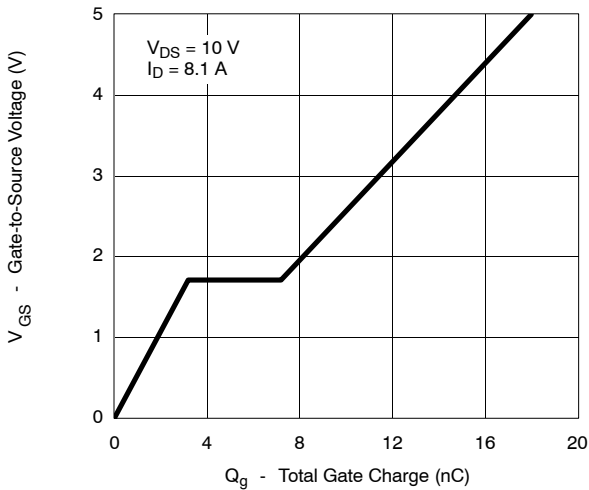
**On-Resistance vs. Drain Current**



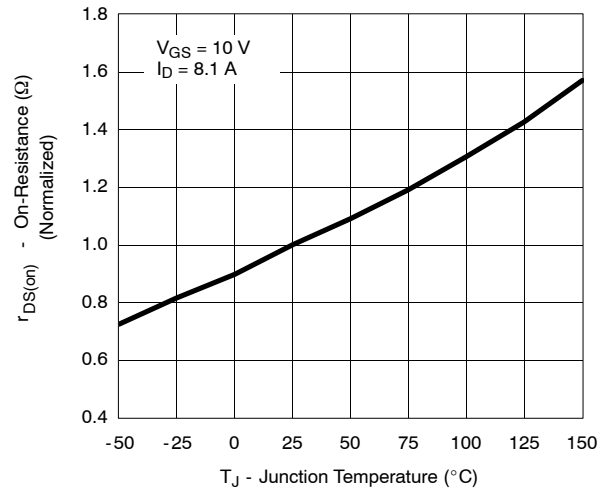
**Capacitance**



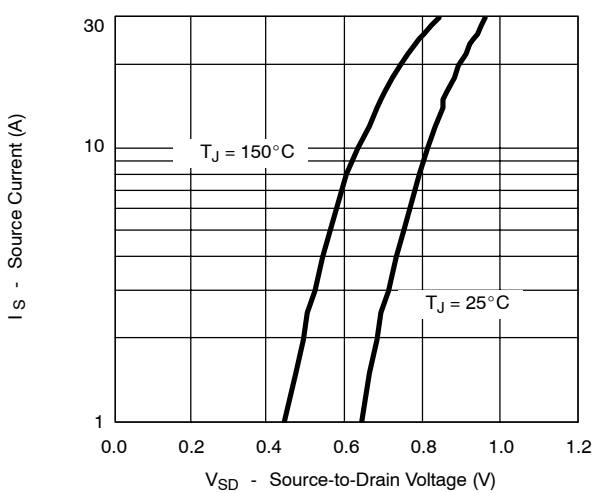
**Gate Charge**



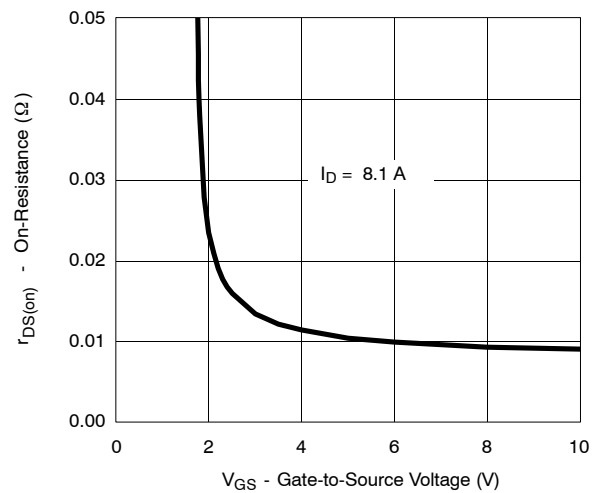
**On-Resistance vs. Junction Temperature**



**Source-Drain Diode Forward Voltage**

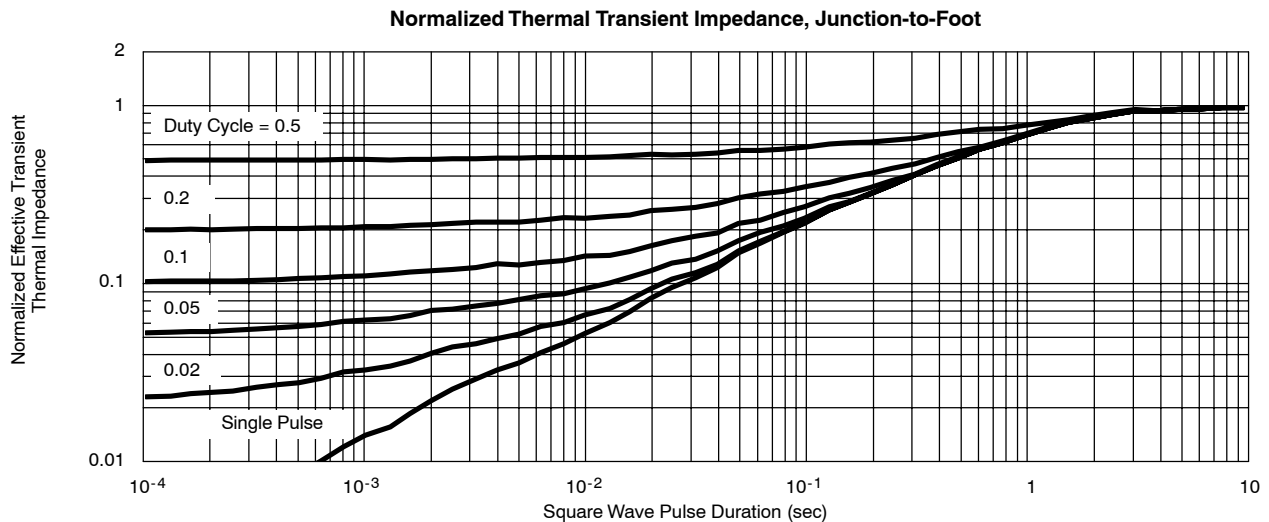
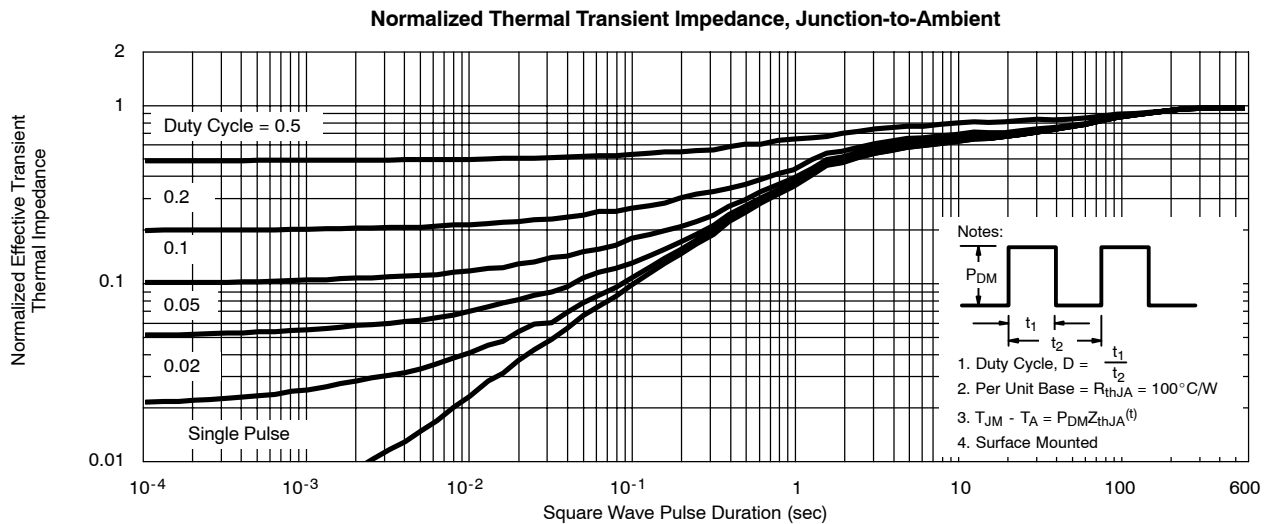
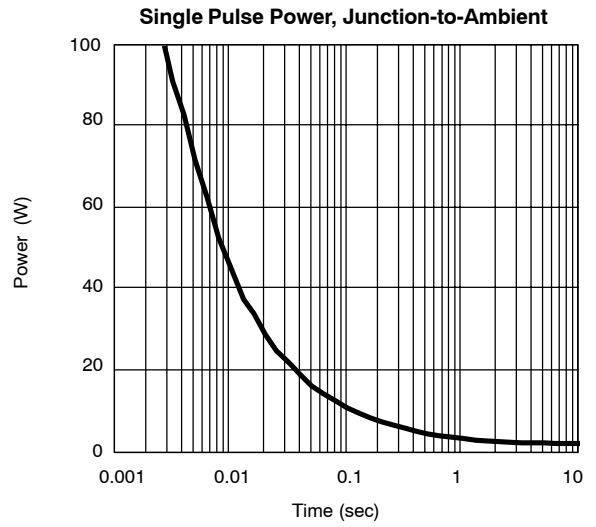
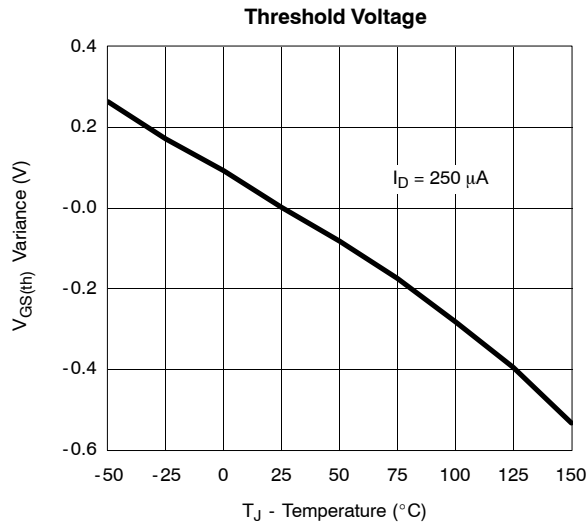


**On-Resistance vs. Gate-to-Source Voltage**





**TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)**





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