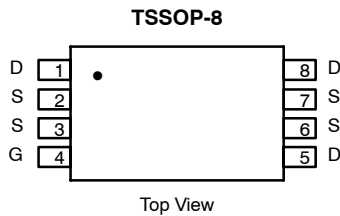


N-Channel 2.5-V (G-S) MOSFET

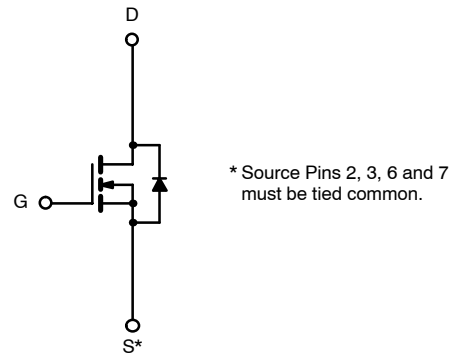
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	0.014 @ $V_{GS} = 4.5$ V	8.1
	0.020 @ $V_{GS} = 2.5$ V	6.6

FEATURES

- TrenchFET® Power MOSFET
- 100% R_g Tested



Ordering Information: Si6466ADQ-T1



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}	± 8		
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	8.1	6.8	A
	$T_A = 70^\circ\text{C}$		6.6	5.4	
Pulsed Drain Current (10 μs Pulse Width)		I_{DM}	30		
Continuous Source Current (Diode Conduction) ^a		I_S	1.35	0.95	
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	1.5	1.05	W
	$T_A = 70^\circ\text{C}$		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 ^a	$t \leq 10$ 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.

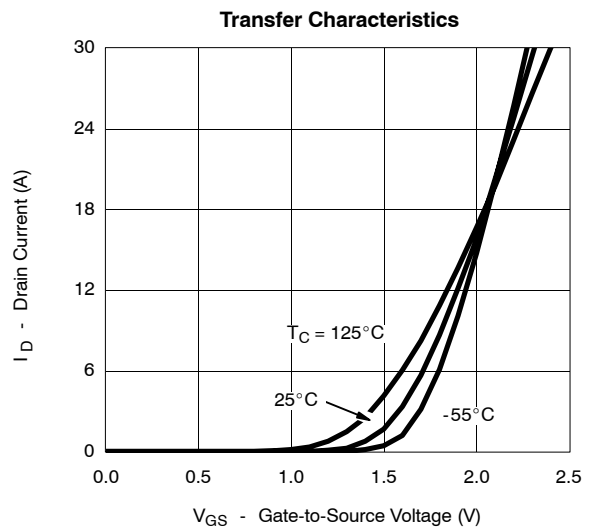
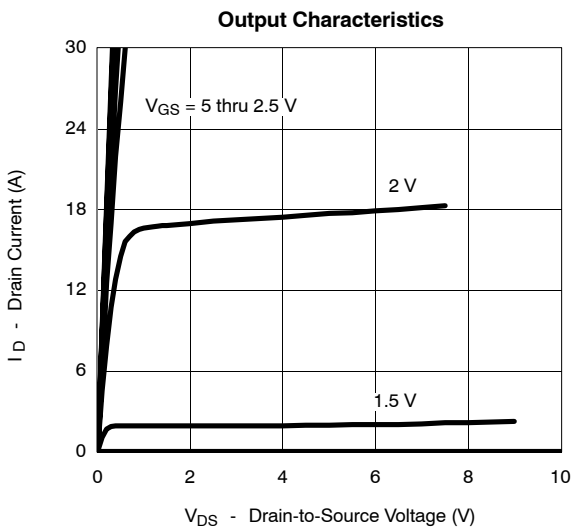


SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.45			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 8 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1	μA
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 70 °C			10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 8.1 A		0.011	0.014	Ω
		V _{GS} = 2.5 V, I _D = 6.6 A		0.017	0.020	
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 8.1 A		30		S
Diode Forward Voltage ^a	V _{SD}	I _S = 1.35 A, V _{GS} = 0 V		0.65	1.1	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 5 V, I _D = 8.1 A		18	27	nC
Gate-Source Charge	Q _{gs}			3.2		
Gate-Drain Charge	Q _{gd}			4		
Gate Resistance	R _g		0.5		1.8	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω		27	45	ns
Rise Time	t _r			34	50	
Turn-Off Delay Time	t _{d(off)}			76	120	
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 ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

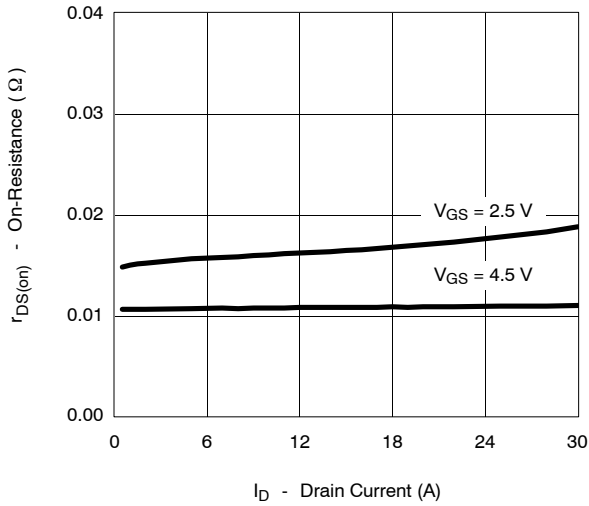
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



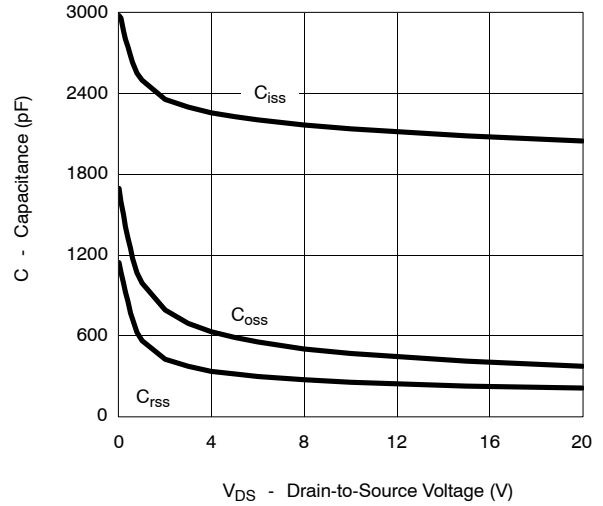


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

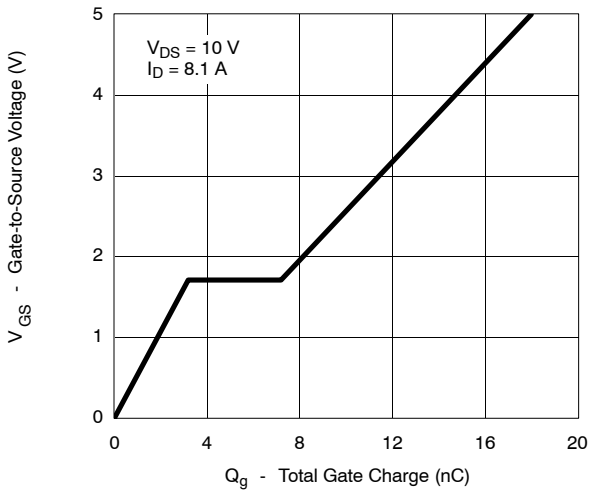
On-Resistance vs. Drain Current



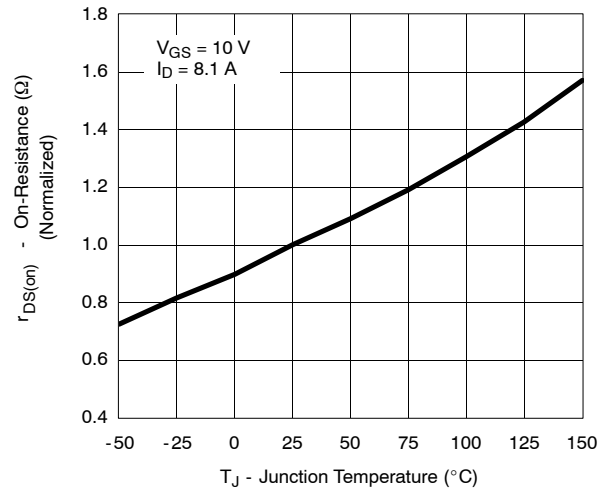
Capacitance



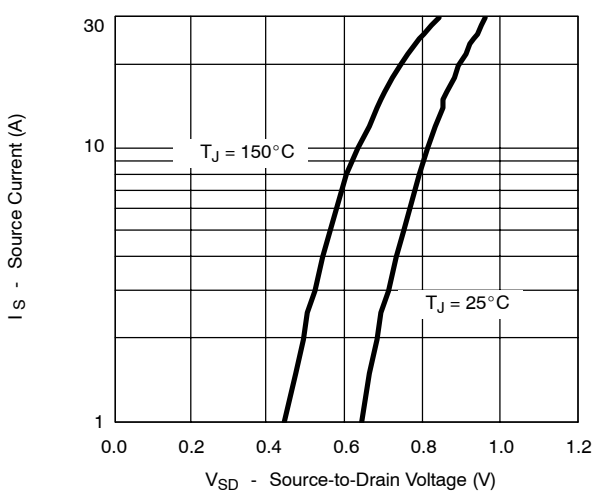
Gate Charge



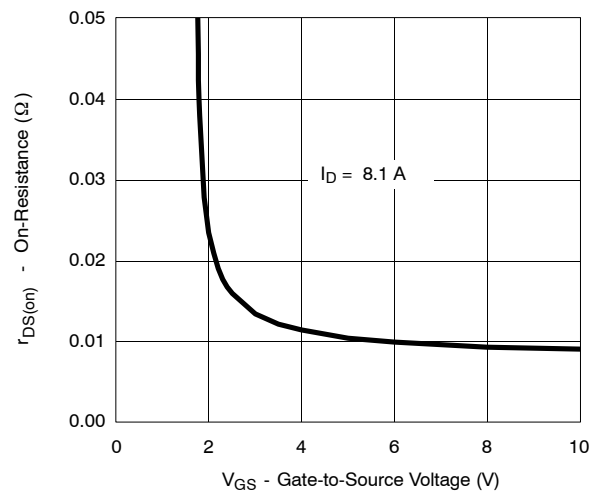
On-Resistance vs. Junction Temperature



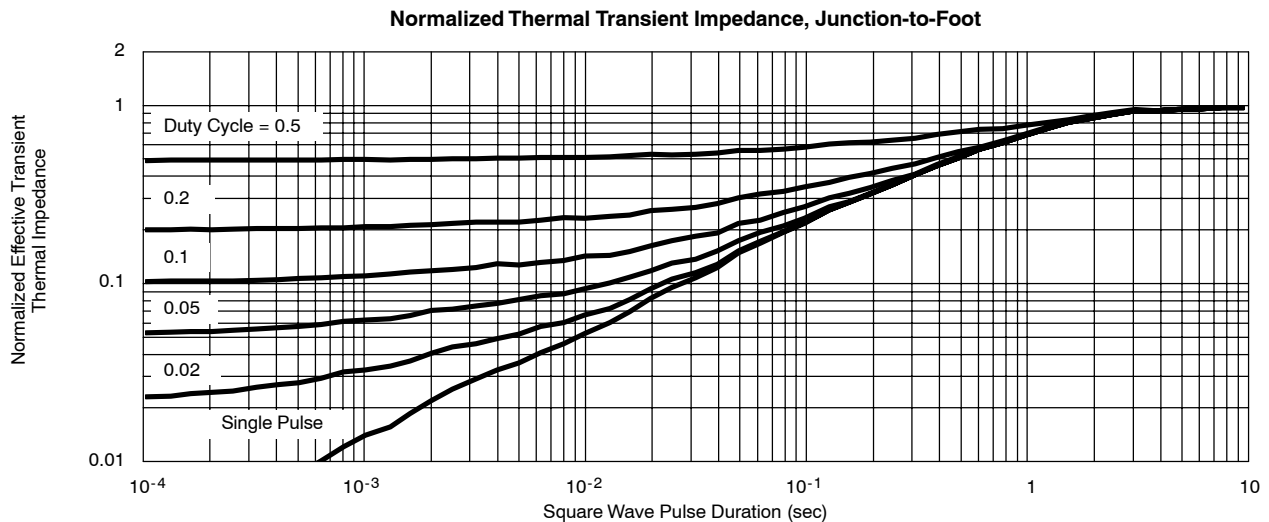
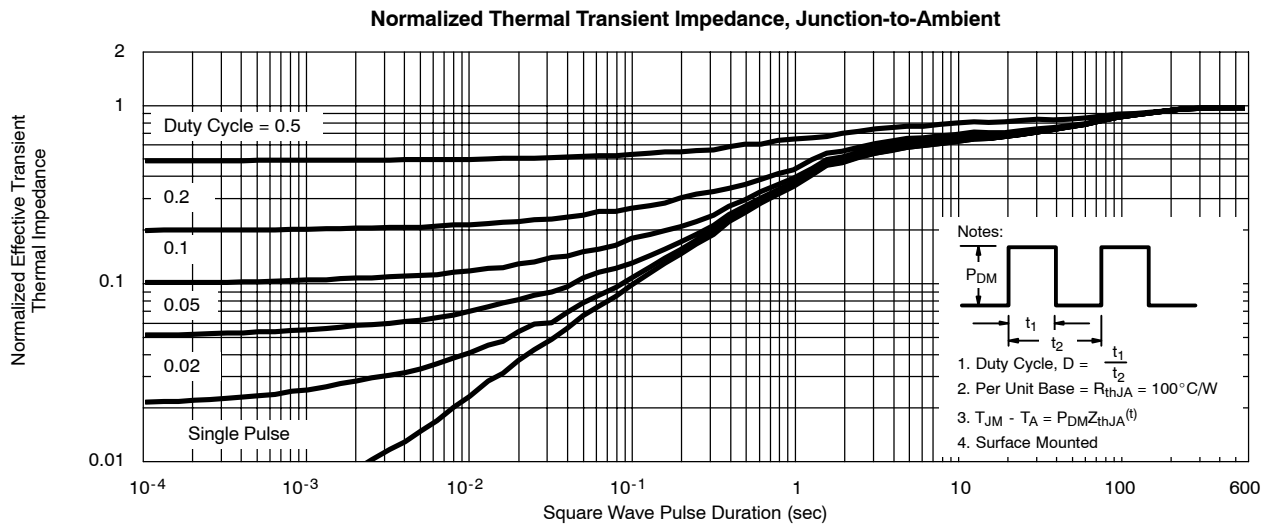
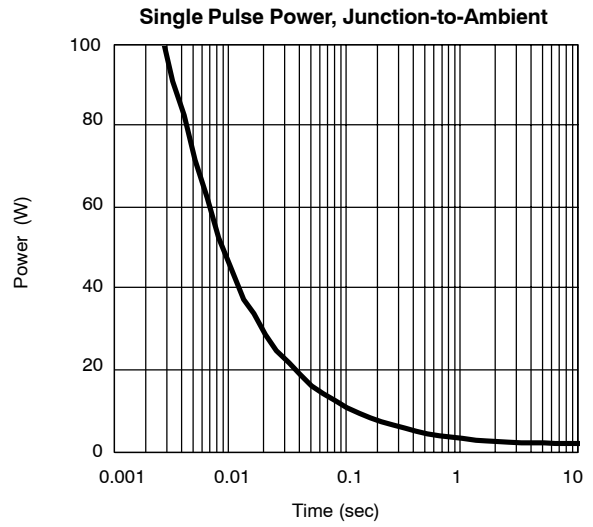
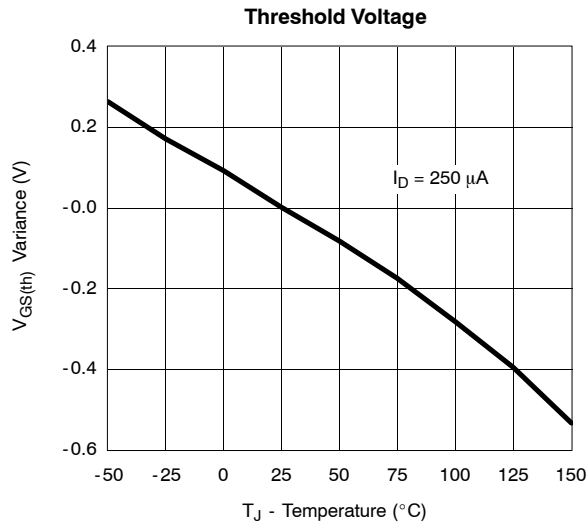
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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