

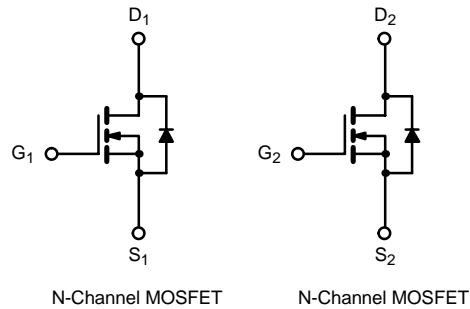
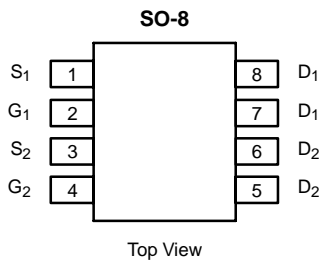


Dual N-Channel 2.5-V (G-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	0.020 @ $V_{GS} = 4.5$ V	8.2
	0.030 @ $V_{GS} = 2.5$ V	6.7

FEATURES

- TrenchFET® Power MOSFETS



Ordering Information: Si9926BDY
Si9926BDY-T1 (with Tape and Reel)

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}	± 12		
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	8.2	6.2	A
	$T_A = 70^\circ\text{C}$	6.5	4.9	
Pulsed Drain Current	I_{DM}	30		
Continuous Source Current (Diode Conduction) ^a	I_S	1.7	0.95	
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	2.0	1.14	W
	$T_A = 70^\circ\text{C}$	1.3	0.72	
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	52	62.5	$^\circ\text{C/W}$
	Steady State	90	110	
Maximum Junction-to-Foot (Drain)	Steady State	32	40	

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

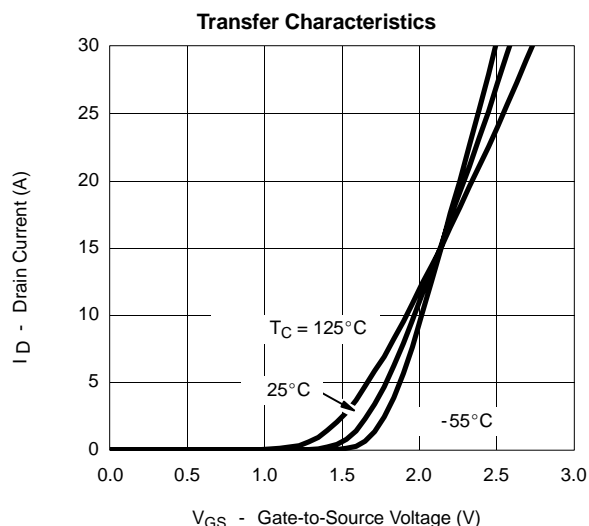
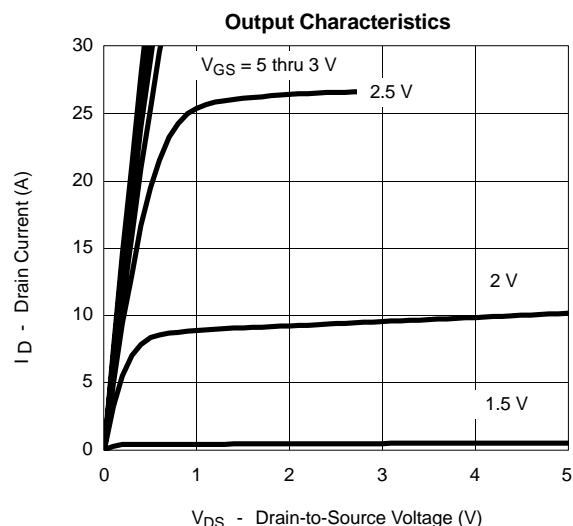
SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.6		1.5	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 12 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 = 55 °C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 8.2 A		0.016	0.020	Ω
		V _{GS} = 2.5 V, I _D = 3.3 A		0.024	0.030	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 8.2 A		29		S
Diode Forward Voltage ^a	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V		0.8	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 8.2 A		11	20	nC
Gate-Source Charge	Q _{gs}			2.5		
Gate-Drain Charge	Q _{gd}			3.2		
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		35	55	ns
Rise Time	t _r			50	75	
Turn-Off Delay Time	t _{d(off)}			31	50	
Fall Time	t _f			15	25	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.7 A, di/dt = 100 A/μs		30	60	

Notes

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

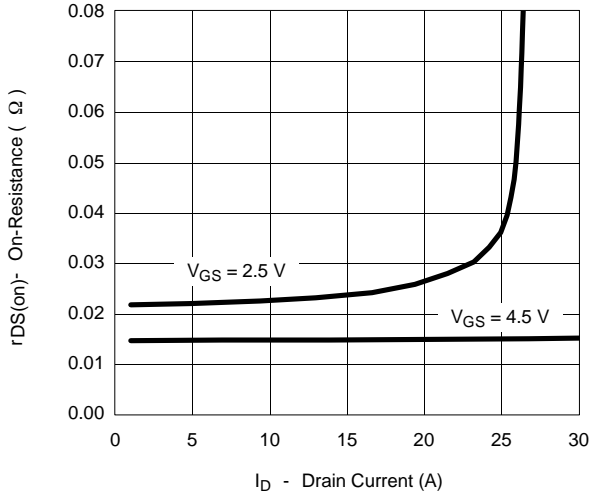
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



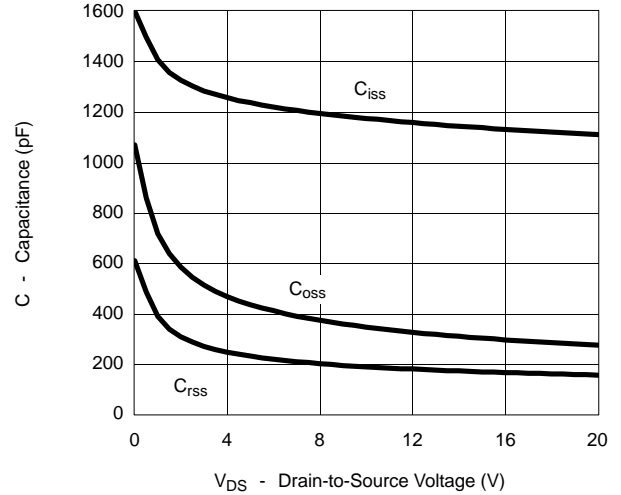


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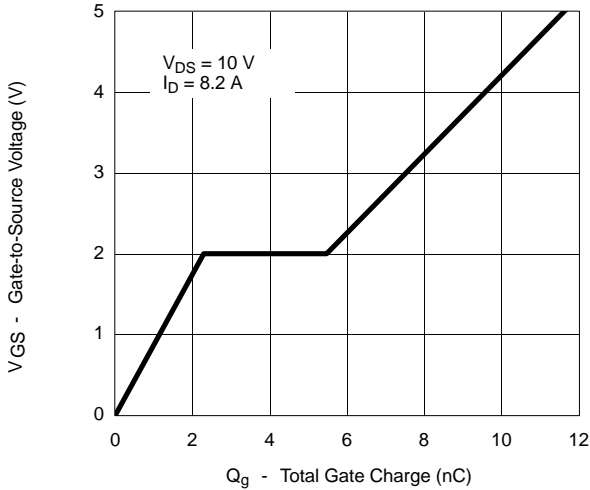
On-Resistance vs. Drain Current



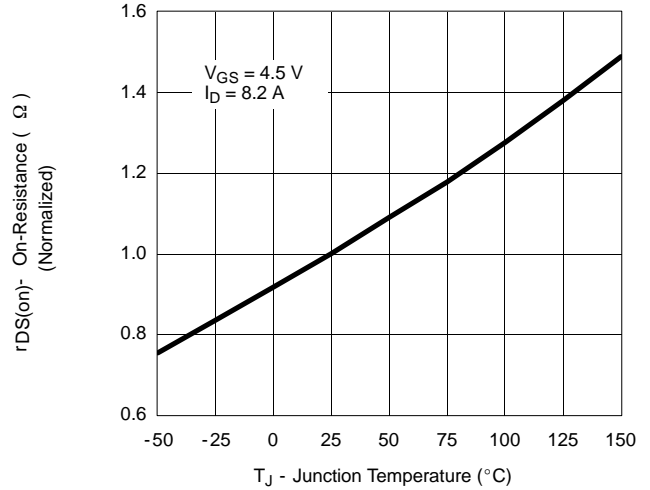
Capacitance



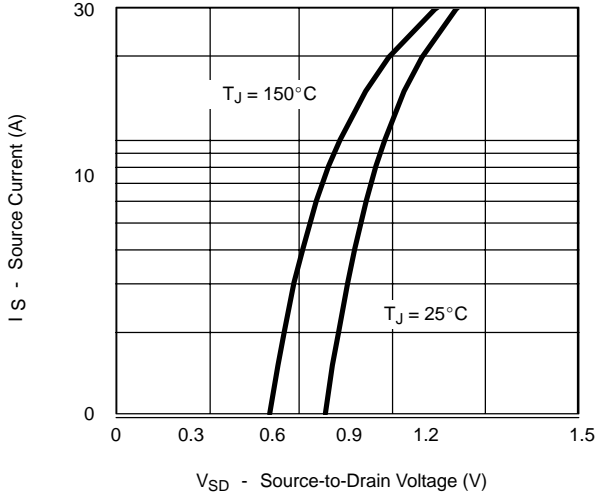
Gate Charge



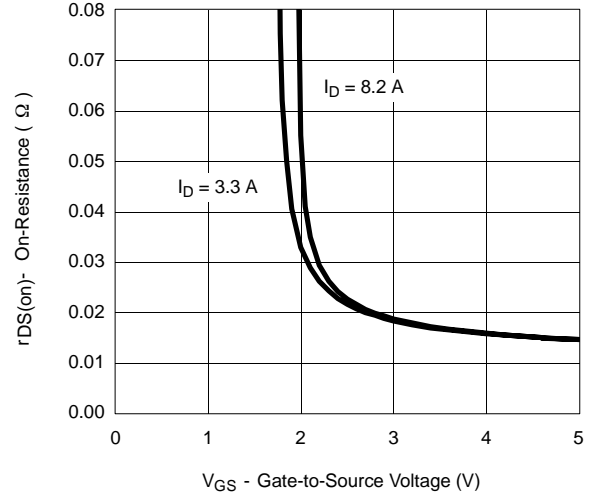
On-Resistance vs. Junction Temperature



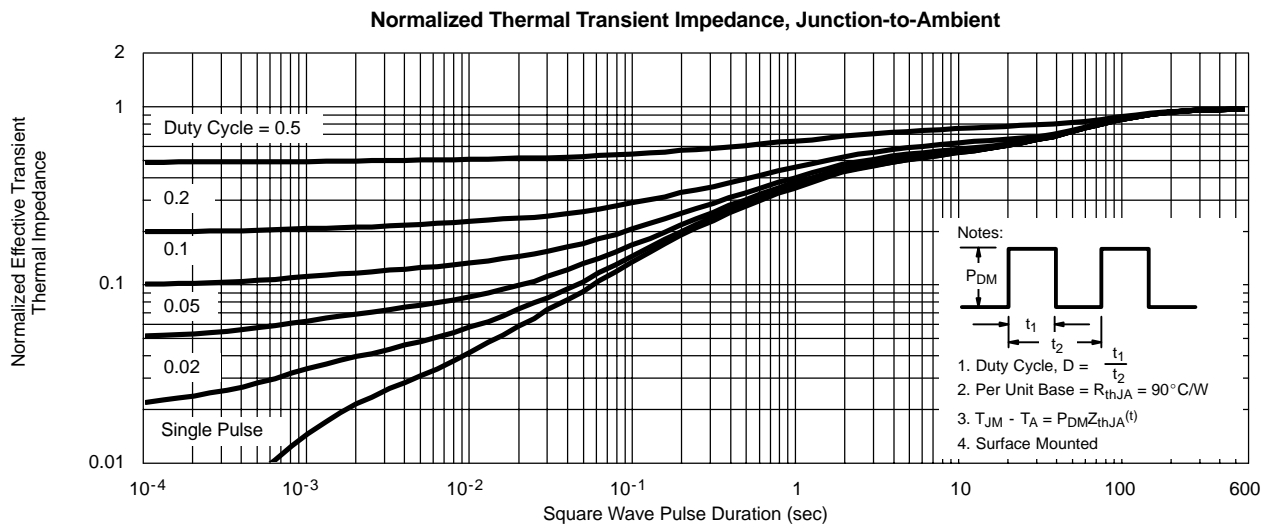
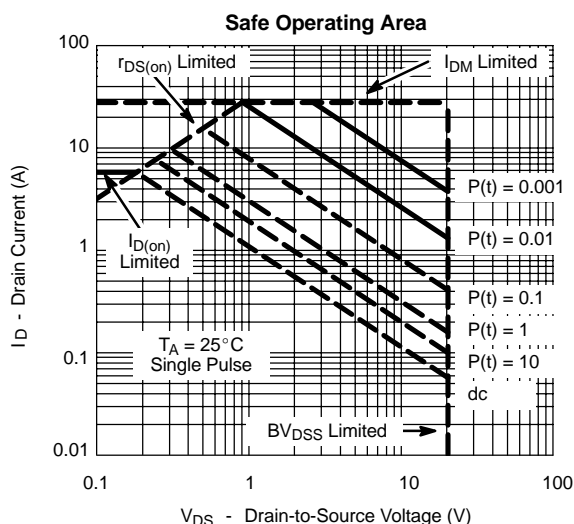
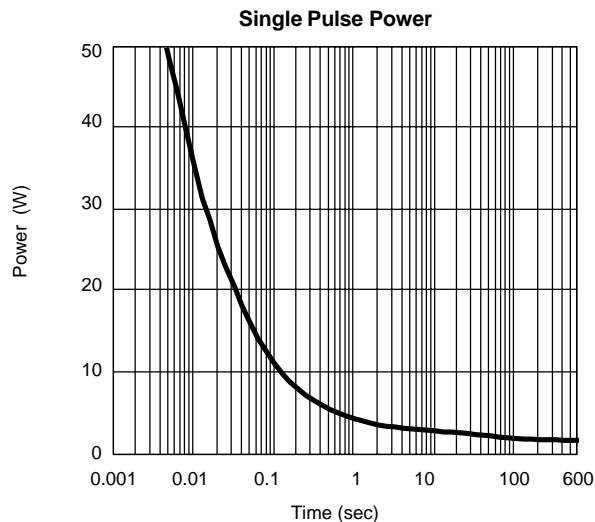
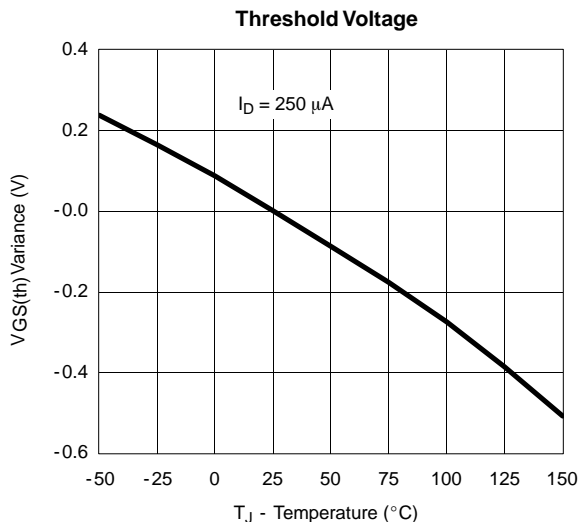
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

