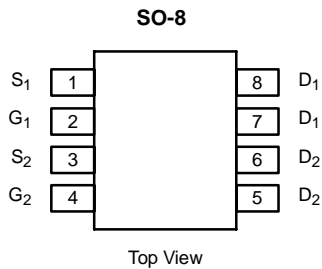




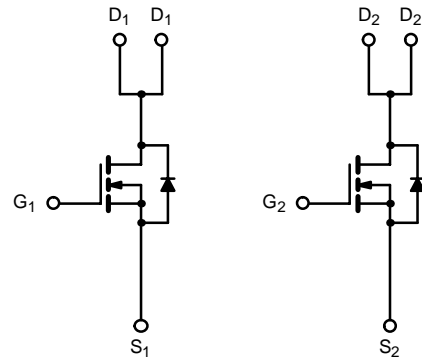
## Dual N-Channel 2.5-V (G-S) MOSFET

**2.5-V Rated**

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
20	0.05 @ V <sub>GS</sub> = 4.5 V	5.0
	0.06 @ V <sub>GS</sub> = 3.0 V	4.2
	0.08 @ V <sub>GS</sub> = 2.5 V	3.6



Ordering Information: Si9925DY  
Si9925DY-T1 (with Tape and Reel)



N-Channel MOSFET      N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V <sub>DS</sub>	20	V
Gate-Source Voltage	V <sub>GS</sub>	± 12	
Continuous Drain Current (T <sub>J</sub> = 150 °C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25 °C	5.0
		T <sub>A</sub> = 70 °C	4.0
Pulsed Drain Current	I <sub>DM</sub>	48	A
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	1.7	
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25 °C	2
		T <sub>A</sub> = 70 °C	1.3
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>	62.5	°C/W

Notes  
a. Surface Mounted on FR4 Board, t ≤ 10 sec.  
For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

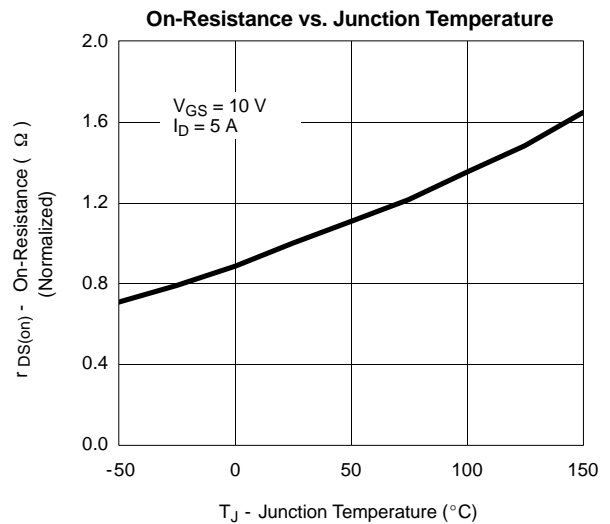
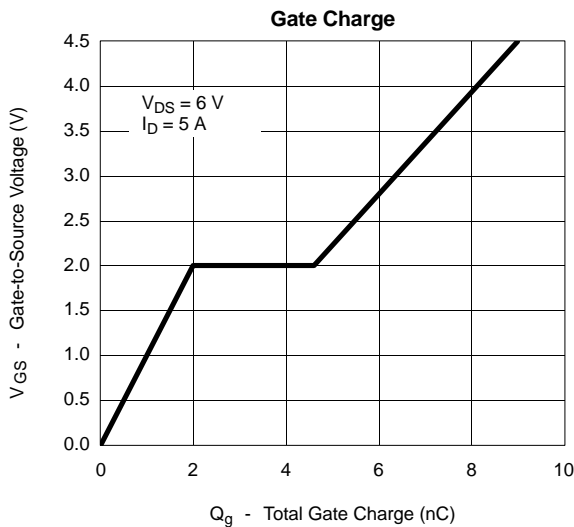
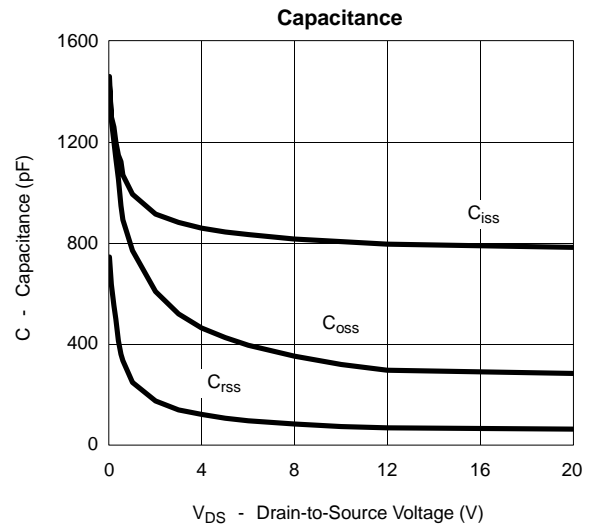
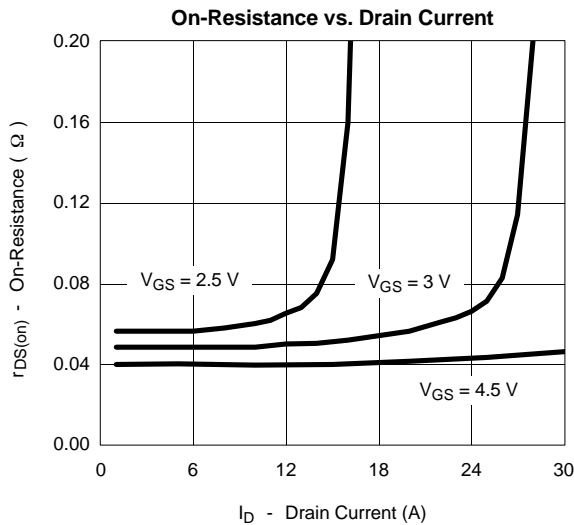
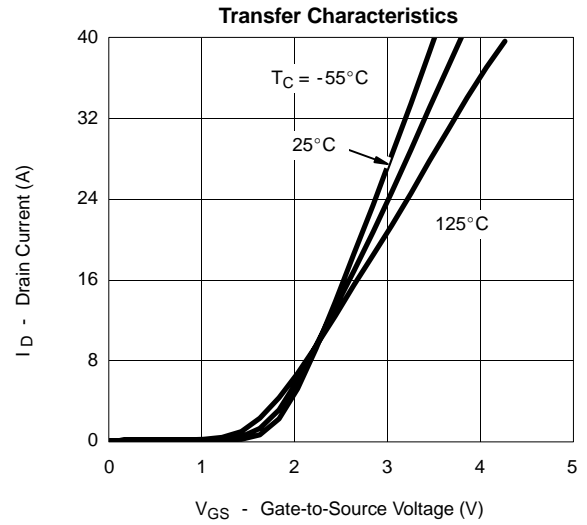
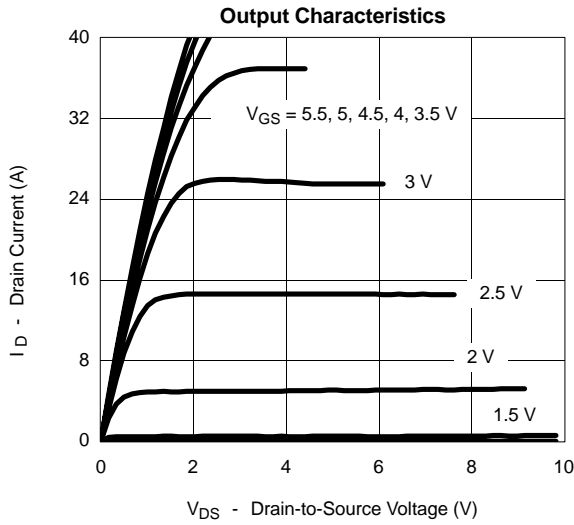
Specifications (T <sub>J</sub> = 25°C Unless Otherwise Noted)						
Parameter	Symbol	Test Condition	Min	Typ <sup>a</sup>	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	0.8			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±12 V			± 100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 10 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			5	
On-State Drain Current <sup>b</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 5 V, V <sub>GS</sub> = 5 V	30			A
Drain-Source On-State Resistance <sup>b</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 7.2 V, I <sub>D</sub> = 5.0 A	0.025	0.038	0.045	Ω
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 5.0 A		0.041	0.05	
		V <sub>GS</sub> = 3.0 V, I <sub>D</sub> = 3.9 A		0.050	0.06	
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 1 A		0.062	0.08	
Forward Transconductance <sup>b</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 5.0 A		14		S
Diode Forward Voltage <sup>b</sup>	V <sub>SD</sub>	I <sub>S</sub> = 5.0 A, V <sub>GS</sub> = 0 V		0.81	1.2	V
<b>Dynamic<sup>a</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 6 V, V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 5.0 A		9	20	nC
Gate-Source Charge	Q <sub>gs</sub>			2		
Gate-Drain Charge	Q <sub>gd</sub>			2.6		
Gate Resistance	R <sub>g</sub>		1		2.9	Ω
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 6 V, R <sub>L</sub> = 6 Ω I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 4.5 V, R <sub>G</sub> = 6 Ω		14	40	ns
Rise Time	t <sub>r</sub>			13	30	
Turn-Off Delay Time	t <sub>d(off)</sub>			35	60	
Fall Time	t <sub>f</sub>			9	30	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 5.0 A, di/dt = 100 A/μs		60	150	

## Notes

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



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



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

