

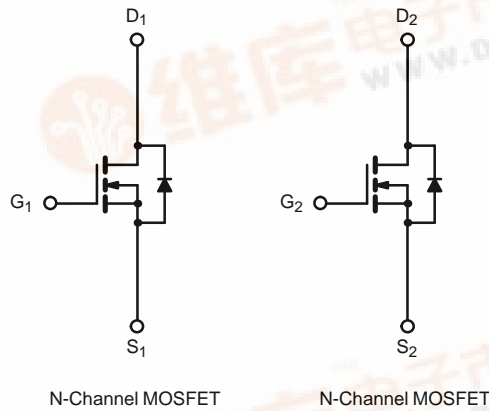
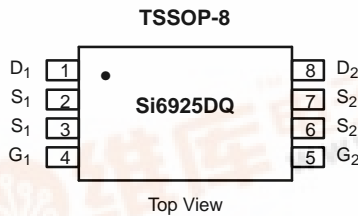


**Si6925DQ**  
Vishay Siliconix

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

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
20	0.05 @ $V_{GS} = 4.5$ V	$\pm 3.4$
	0.06 @ $V_{GS} = 3.0$ V	$\pm 3.1$
	0.08 @ $V_{GS} = 2.5$ V	$\pm 2.7$

**2.5-V Rated**



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$I_D$	$T_A = 25^\circ\text{C}$	$\pm 3.4$
		$T_A = 70^\circ\text{C}$	$\pm 2.7$
Pulsed Drain Current (10 $\mu\text{s}$ Pulse Width)	$I_{DM}$	$\pm 30$	A
Continuous Source Current (Diode Conduction) <sup>a</sup>	$I_S$	1.25	
Maximum Power Dissipation <sup>a</sup>	$P_D$	$T_A = 25^\circ\text{C}$	1
		$T_A = 70^\circ\text{C}$	0.64
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient <sup>a</sup>	$R_{thJA}$	125	$^\circ\text{C}/\text{W}$

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

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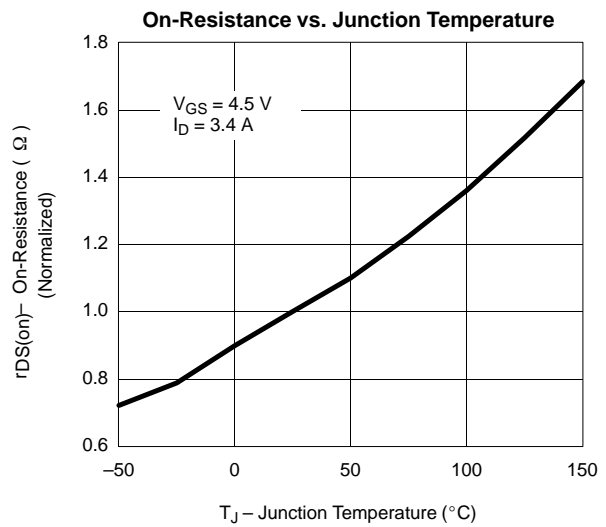
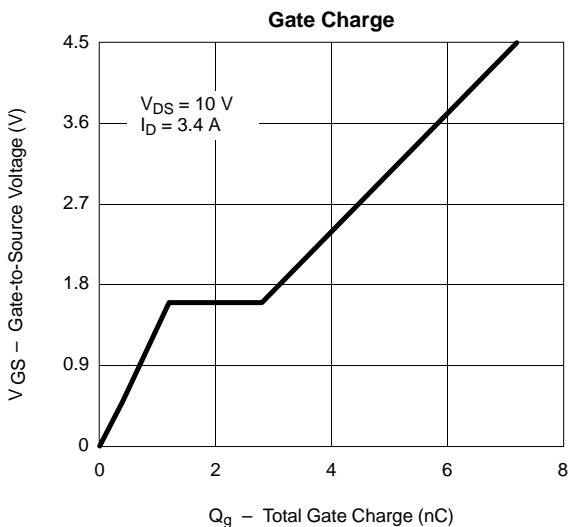
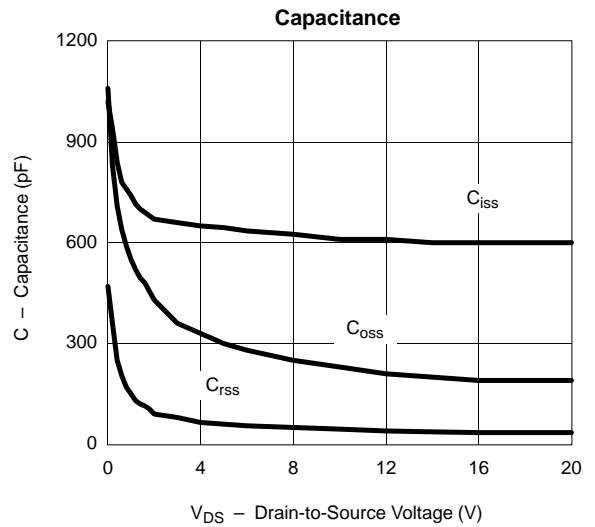
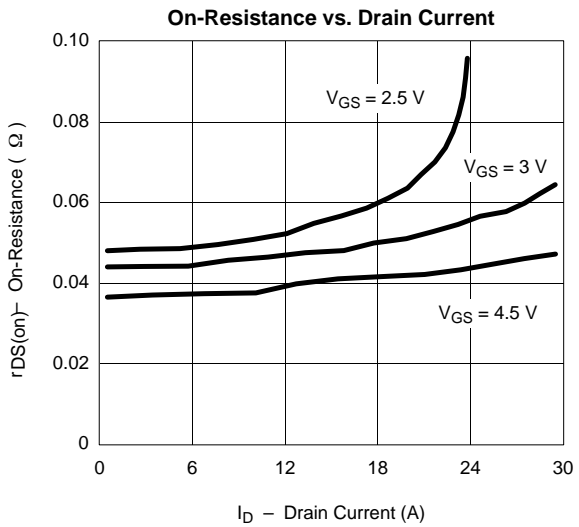
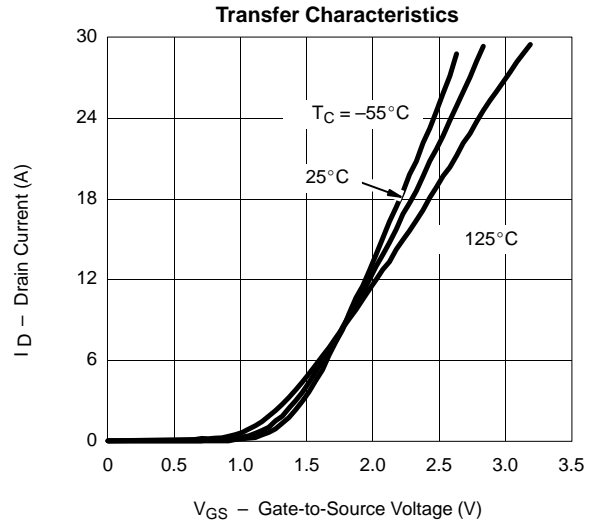
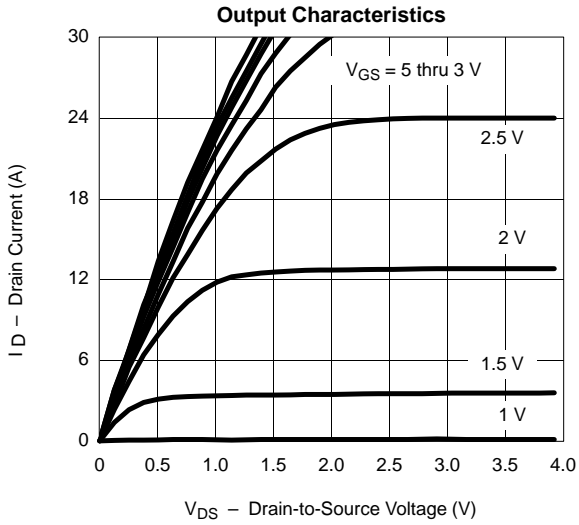
SPECIFICATIONS (T <sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ <sup>a</sup>	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	0.5			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ± 12 V			± 100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 20 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> = 4.5 V	10			A
Drain-Source On-State Resistance <sup>b</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 3.4 A		0.038	0.05	Ω
		V <sub>GS</sub> = 3.0 V, I <sub>D</sub> = 3.1 A		0.044	0.07	
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 2.7 A		0.048	0.08	
Forward Transconductance <sup>b</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 3.4 A		18		S
Diode Forward Voltage <sup>b</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.25 A, V <sub>GS</sub> = 0 V		0.7	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> = 3.4 A		7.5	15	nC
Gate-Source Charge	Q <sub>gs</sub>			1.2		
Gate-Drain Charge	Q <sub>gd</sub>			1.8		
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		10	20	ns
Rise Time	t <sub>r</sub>			25	50	
Turn-Off Delay Time	t <sub>d(off)</sub>			40	60	
Fall Time	t <sub>f</sub>			10	20	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = 1.25 A, di/dt = 100 A/μs		50	

**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)

