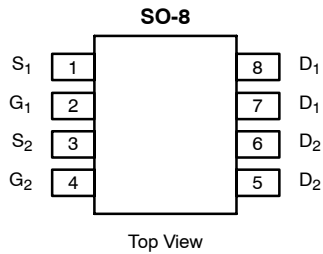


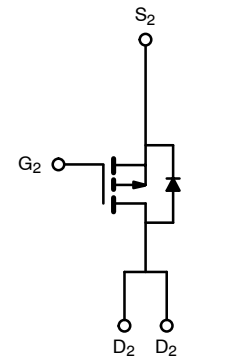
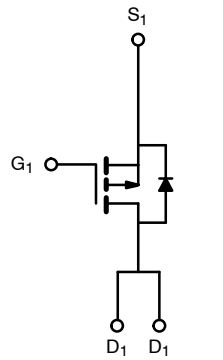
## Dual P-Channel 1.8-V (G-S) MOSFET

**TrenchFET<sup>®</sup>**  
Power MOSFETs  
1.8-V Rated

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-8	0.021 @ $V_{GS} = -4.5$ V	-8.0
	0.027 @ $V_{GS} = -2.5$ V	-7.0
	0.040 @ $V_{GS} = -1.8$ V	-5.8



Ordering Information: Si4965DY  
Si4965DY-T1 (with Tape and Reel)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	-8	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	-8.0	A
	$T_A = 70^\circ\text{C}$	-6.4	
Pulsed Drain Current	$I_{DM}$	-30	
Continuous Source Current (Diode Conduction) <sup>a, b</sup>	$I_S$	-1.7	
Maximum Power Dissipation <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	2.0	W
	$T_A = 70^\circ\text{C}$	1.3	
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>	$R_{thJA}$	93	62.5	$^\circ\text{C/W}$	
				Steady State	

Notes  
a. Surface Mounted on FR4 Board.  
b.  $t \leq 10$  sec.

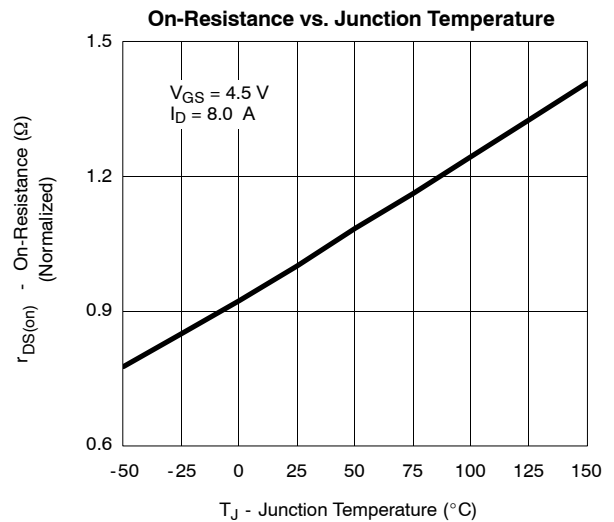
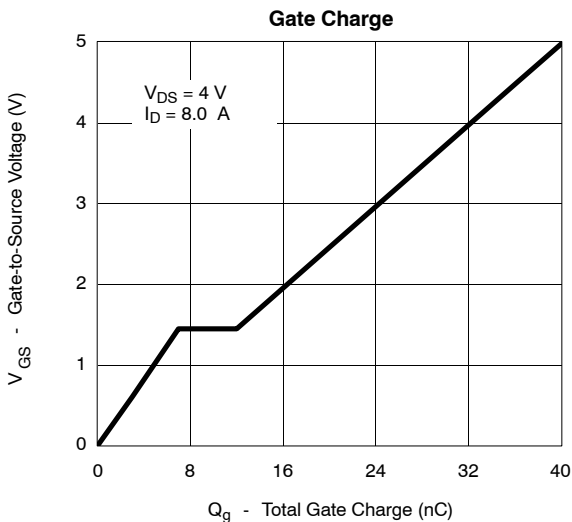
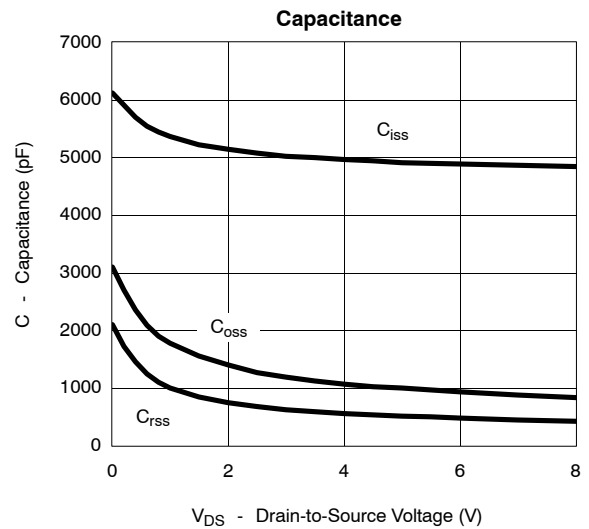
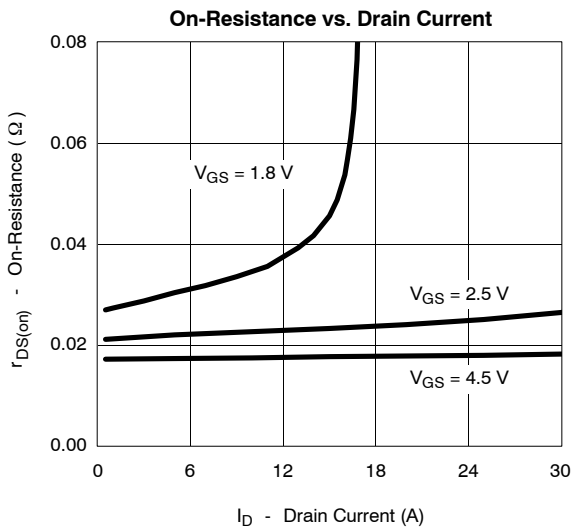
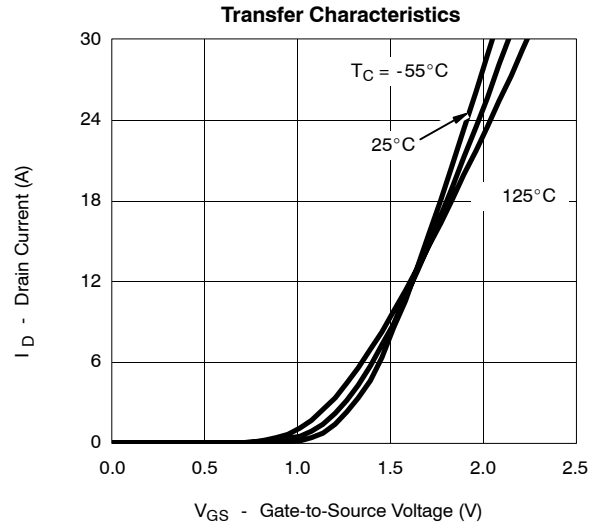
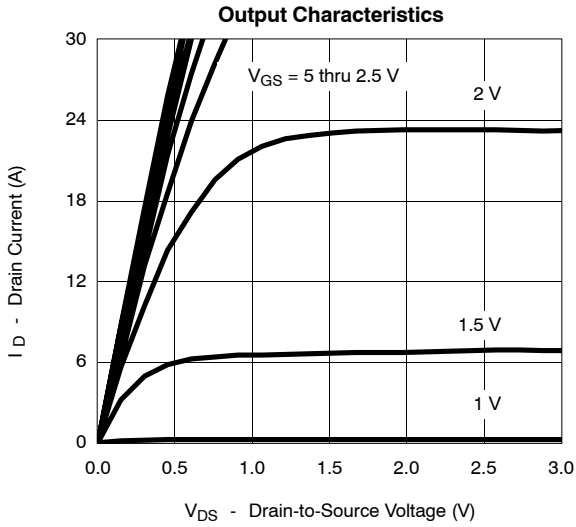
**SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)**

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> = -8 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -8 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70°C			-5	
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> = -8.0 A		0.0175	0.021	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -7.0 A		0.022	0.027	
		V <sub>GS</sub> = -1.8 V, I <sub>D</sub> = -5.8 A		0.031	0.040	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -5 V, I <sub>D</sub> = -8.0 A		27		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1.7 A, V <sub>GS</sub> = 0 V			-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -4 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -8.0 A		36	55	nC
Gate-Source Charge	Q <sub>gs</sub>			7.5		
Gate-Drain Charge	Q <sub>gd</sub>			5.0		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -4 V, R <sub>L</sub> = 4 Ω I <sub>D</sub> ≅ -1 A, V <sub>GEN</sub> = -4.5 V, R <sub>G</sub> = 6 Ω		35	70	ns
Rise Time	t <sub>r</sub>			45	90	
Turn-Off Delay Time	t <sub>d(off)</sub>			170	340	
Fall Time	t <sub>f</sub>			90	180	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = -1.7 A, di/dt = 100 A/μs		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)



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

