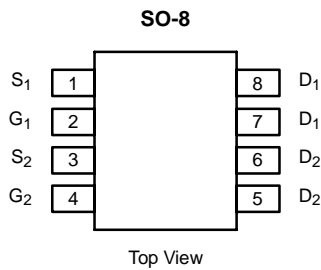




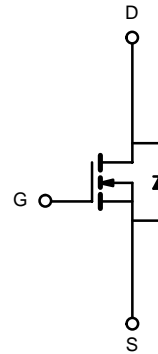
## Dual N-Channel 100-V (D-S) MOSFET

**TrenchFET®**  
Power MOSFETS

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
100	0.150 @ V <sub>GS</sub> = 10 V	2.6
	0.180 @ V <sub>GS</sub> = 6 V	2.4



Ordering Information: Si4982DY  
Si4982DY-T1 (with Tape and Reel)



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V <sub>DS</sub>	100	V
Gate-Source Voltage	V <sub>GS</sub>	±20	
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25°C	A
		T <sub>A</sub> = 70°C	
Pulsed Drain Current	I <sub>DM</sub>	20	
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	W
		T <sub>A</sub> = 70°C	
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

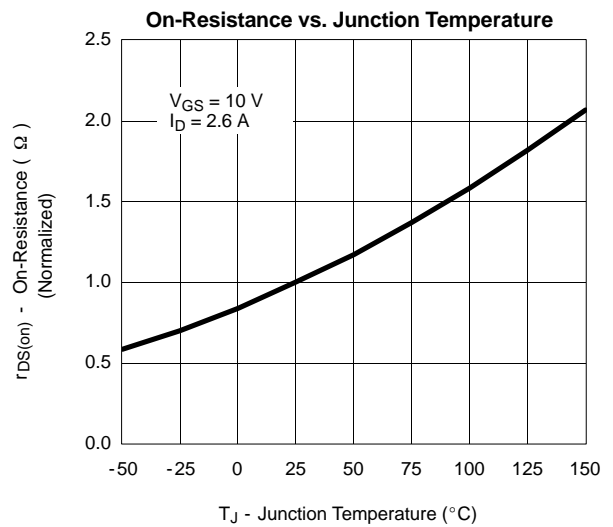
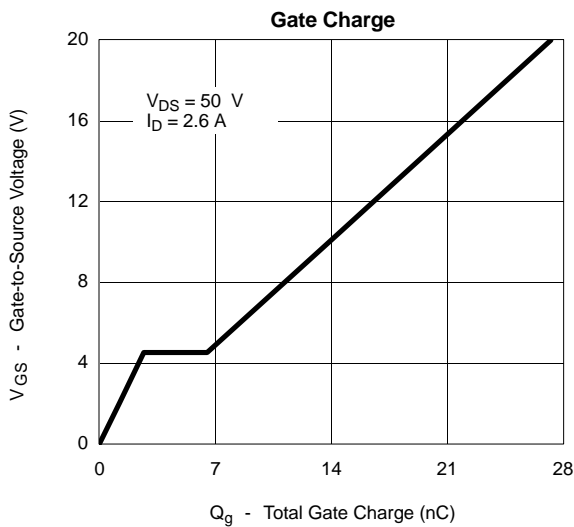
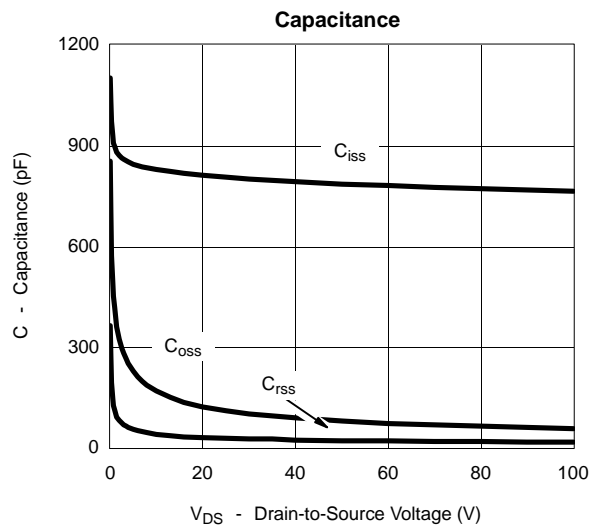
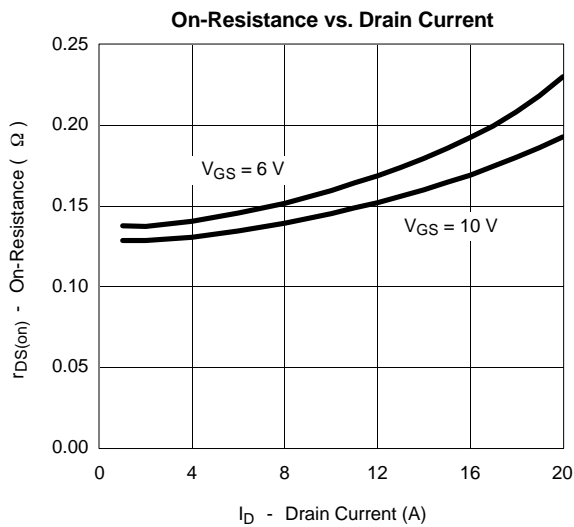
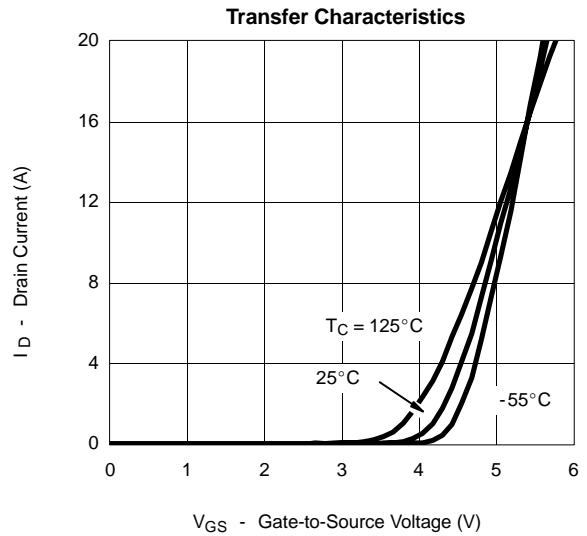
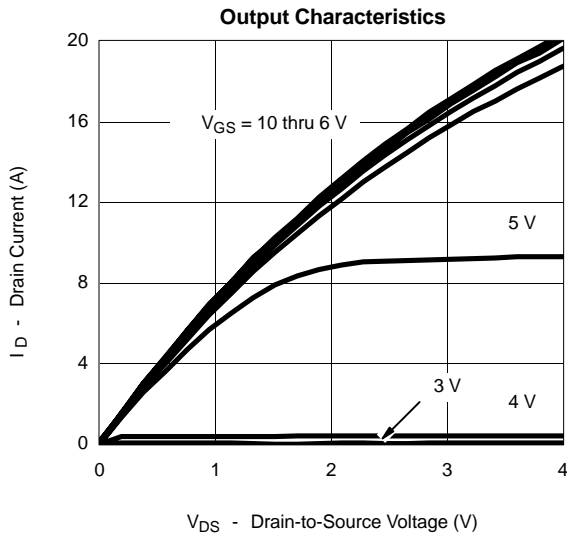
Notes  
a. Surface Mounted on FR4 Board, t ≤ 10 sec.

SPECIFICATIONS ( $T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ <sup>a</sup>	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	2			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 20\ \text{V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 100\ \text{V}, V_{GS} = 0\ \text{V}$			1	$\mu\text{A}$
		$V_{DS} = 100\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$			20	
On-State Drain Current <sup>b</sup>	$I_{D(on)}$	$V_{DS} = 5\ \text{V}, V_{GS} = 10\ \text{V}$	15			A
Drain-Source On-State Resistance <sup>b</sup>	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}, I_D = 2.6\ \text{A}$		0.130	0.150	$\Omega$
		$V_{GS} = 6\ \text{V}, I_D = 2.4\ \text{A}$		0.140	0.180	
Forward Transconductance <sup>b</sup>	$g_{fs}$	$V_{DS} = 15\ \text{V}, I_D = 2.6\ \text{A}$		11		S
Diode Forward Voltage <sup>b</sup>	$V_{SD}$	$I_S = 1.7\ \text{A}, V_{GS} = 0\ \text{V}$			1.2	V
<b>Dynamic<sup>a</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 50\ \text{V}, V_{GS} = 10\ \text{V}, I_D = 2.6\ \text{A}$		15	30	nC
Gate-Source Charge	$Q_{gs}$			2.7		
Gate-Drain Charge	$Q_{gd}$			4.0		
Gate Resistance	$R_g$		1		4.4	$\Omega$
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 50\ \text{V}, R_L = 50\ \Omega$ $I_D \cong 1\ \text{A}, V_{GEN} = 10\ \text{V}, R_G = 6\ \Omega$		10	20	ns
Rise Time	$t_r$			10	20	
Turn-Off Delay Time	$t_{d(off)}$			30	60	
Fall Time	$t_f$			10	20	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = 1.7\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		60	90	

## Notes

- a. For design aid only; not subject to production testing.  
 b. Pulse test; pulse width  $\leq 300\ \mu\text{s}$ , duty cycle  $\leq 2\%$ .

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



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

