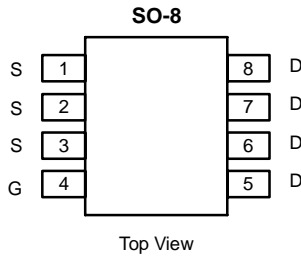


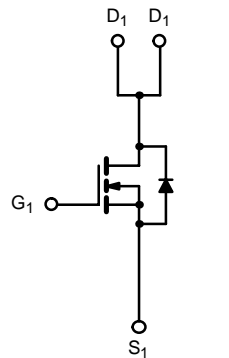


N-Channel 2.5-V (G-S) MOSFET

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.03 @ V _{GS} = 4.5 V	6
	0.04 @ V _{GS} = 2.5 V	5.2



Ordering Information: Si9428DY
Si9428DY-T1 (with Tape and Reel)



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	± 8	
Continuous Drain Current (T _J = 150°C) ^{a, b}	I _D	T _A = 25°C	A
		T _A = 70°C	
Pulsed Drain Current	I _{DM}	20	
Continuous Source Current (Diode Conduction) ^{a, b}	I _S	1.7	
Maximum Power Dissipation ^{a, b}	P _D	T _A = 25°C	W
		T _A = 70°C	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	t ≤ 10 sec	50	°C/W
		Steady State	70	

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

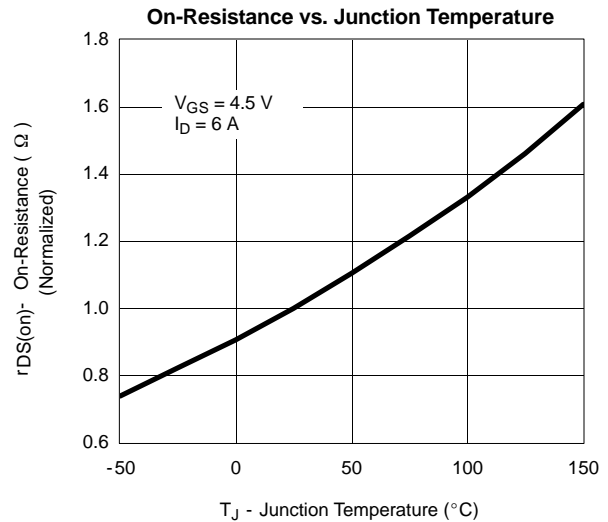
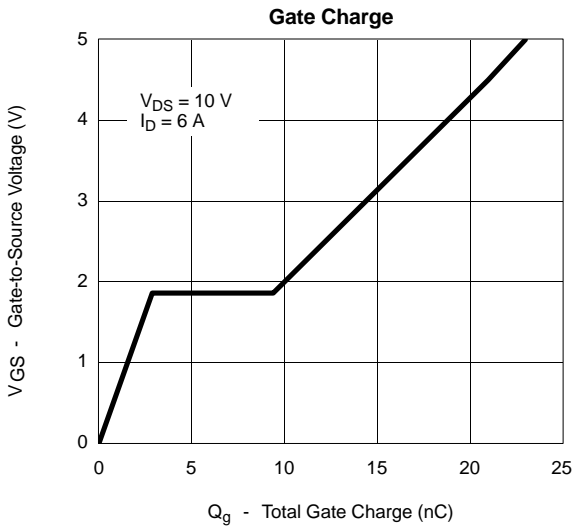
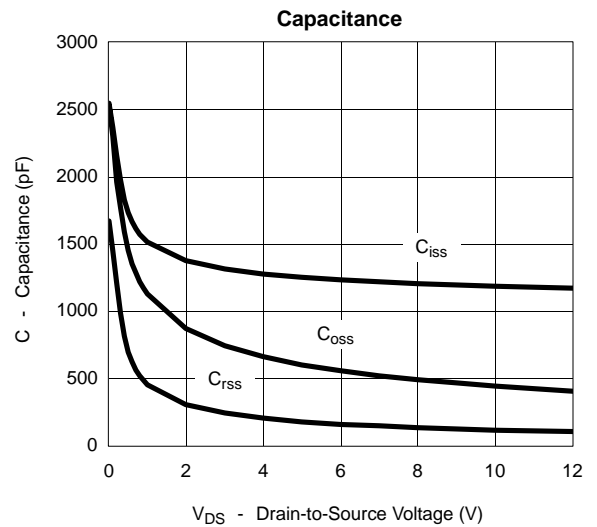
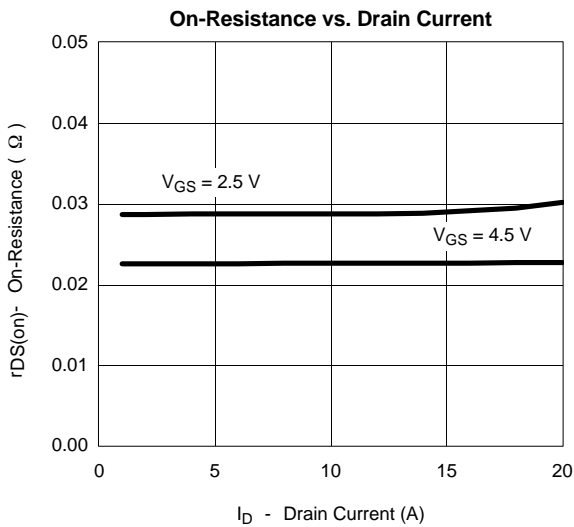
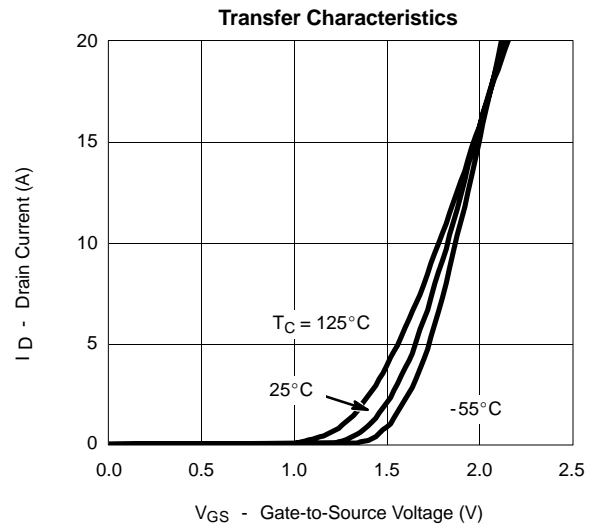
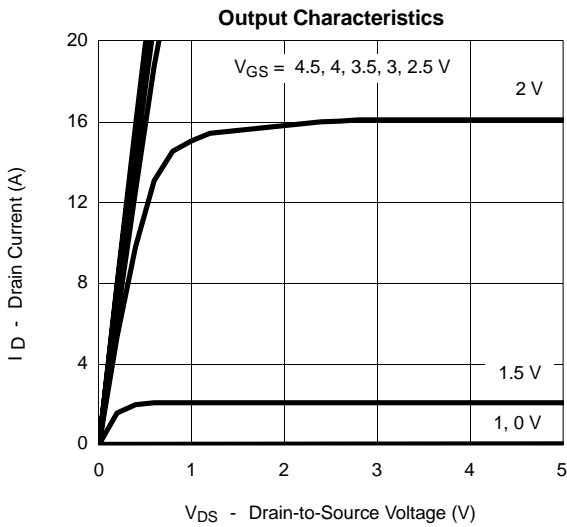
MOSFET SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static-0.6						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	0.6			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\ \text{V}, V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 20\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$			5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \geq 5\ \text{V}, V_{GS} = 4.5\ \text{V}$	20			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 4.5\ \text{V}, I_D = 6\ \text{A}$		0.023	0.03	Ω
		$V_{GS} = 2.5\ \text{V}, I_D = 5.2\ \text{A}$		0.028	0.04	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 10\ \text{V}, I_D = 6\ \text{A}$		24		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 1.7\ \text{A}, V_{GS} = 0\ \text{V}$		0.75	1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 10\ \text{V}, V_{GS} = 4.5\ \text{V}, I_D = 6\ \text{A}$		21	40	nC
Gate-Source Charge	Q_{gs}			2.9		
Gate-Drain Charge	Q_{gd}			6.5		
Gate Resistance	R_g		1		3.4	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong 1\ \text{A}, V_{GEN} = 4.5\ \text{V}, R_G = 6\ \Omega$		30	60	ns
Rise Time	t_r			70	140	
Turn-Off Delay Time	$t_{d(off)}$			70	140	
Fall Time	t_f			30	60	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 1.7\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		70	100	

Notes

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



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

