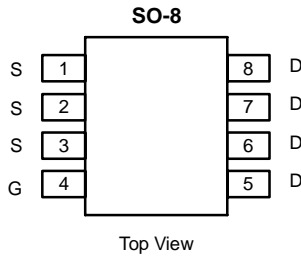
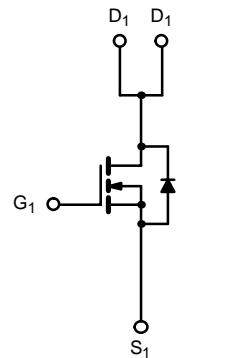


N-Channel 2.5-V (G-S) MOSFET

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)



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}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^{a, b}	I_D	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
Pulsed Drain Current	I_{DM}	20	
Continuous Source Current (Diode Conduction) ^{a, b}	I_S	1.7	
Maximum Power Dissipation ^{a, b}	P_D	$T_A = 25^\circ\text{C}$	W
		$T_A = 70^\circ\text{C}$	
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 ^a	R_{thJA}	$t \leq 10$ sec	50	$^\circ\text{C}/\text{W}$
		Steady State	70	

Notes

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

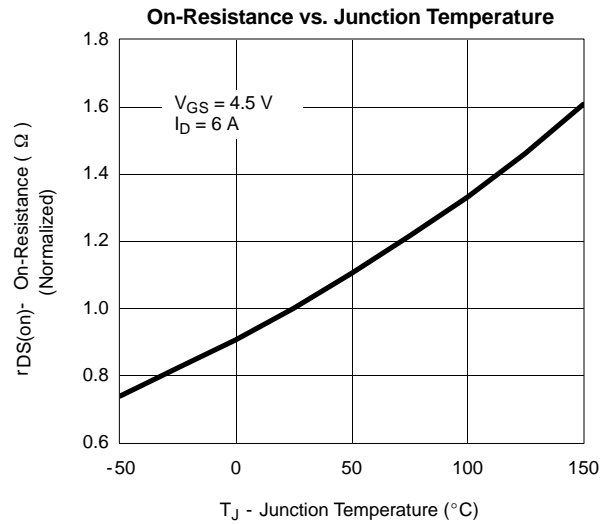
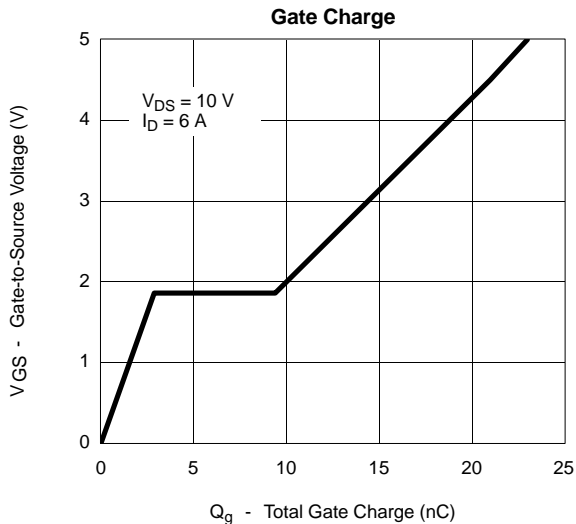
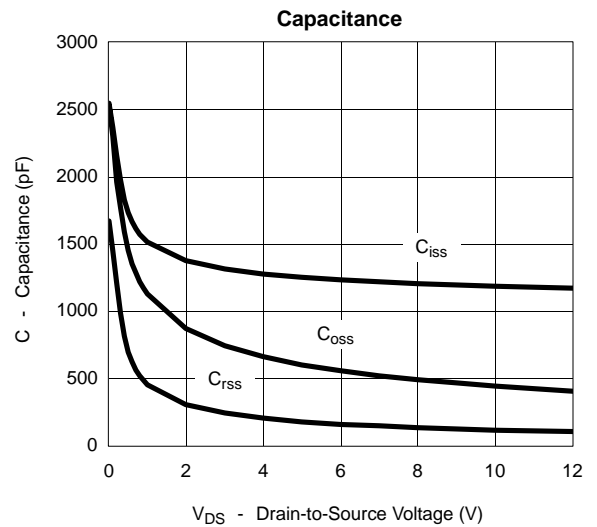
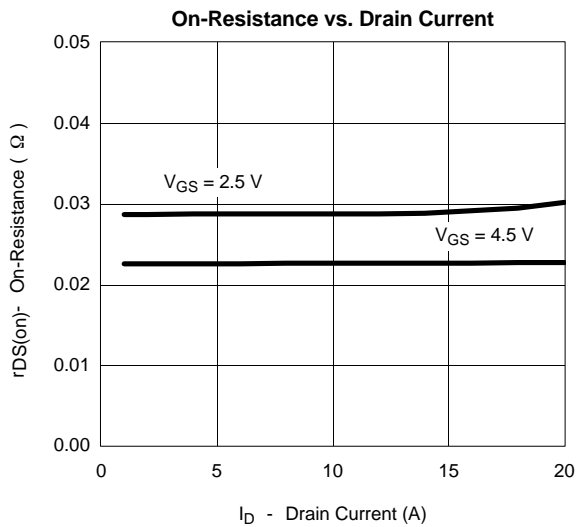
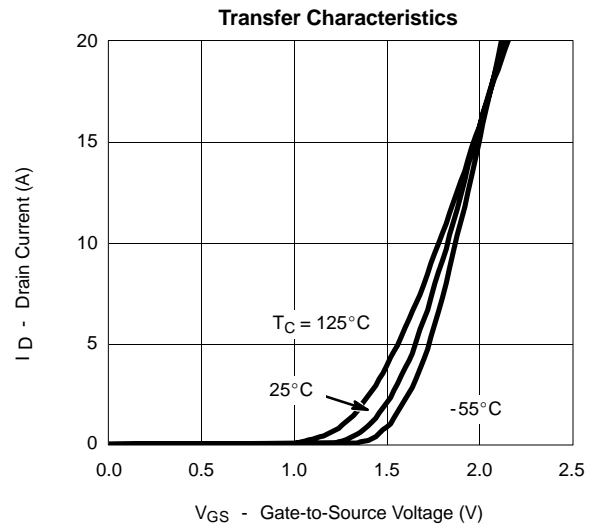
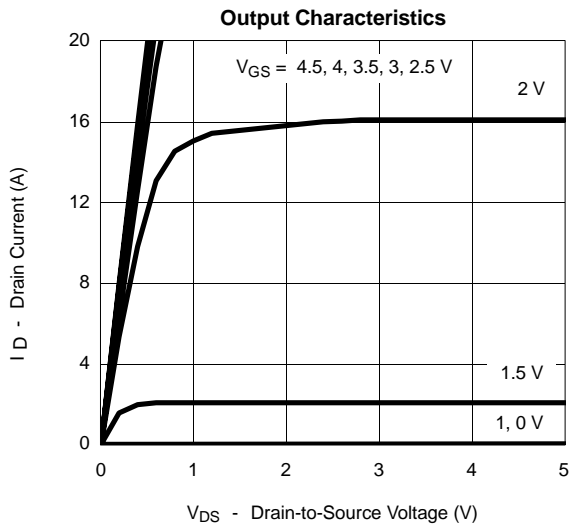
MOSFET SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static-0.6						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.6			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 8 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V			1	μA
		V _{DS} = 20 V, V _{GS} = 0 V, T _J = 55 °C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 6 A		0.023	0.03	Ω
		V _{GS} = 2.5 V, I _D = 5.2 A		0.028	0.04	
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 6 A		24		S
Diode Forward Voltage ^a	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V		0.75	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 6 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 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω		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 A, di/dt = 100 A/μs		70	100	

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)

