



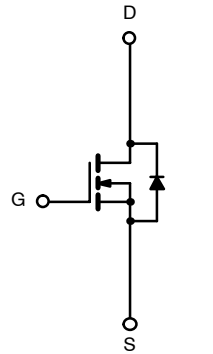
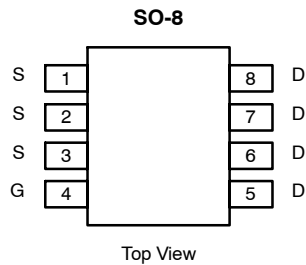
N-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.0135 @ $V_{GS} = 10$ V	10
	0.020 @ $V_{GS} = 4.5$ V	8

FEATURES

- TrenchFET® Power MOSFET



N-Channel MOSFET

Ordering Information: Si4410DY-REVA
Si4410DY-T1-REVA (with Tape and Reel)
Si4410DY-REVA-E3 (Lead free)
Si4410DY-T1-A-E3 (Lead free 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}	30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	10	A
	$T_A = 70^\circ\text{C}$		8	
Pulsed Drain Current		I_{DM}	50	
Continuous Source Current (Diode Conduction) ^a		I_S	2.3	
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	2.5	W
	$T_A = 70^\circ\text{C}$		1.6	
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 ^a	R_{thJA}	50	$^\circ\text{C/W}$
Maximum Junction-to-Foot (Drain)	R_{thJF}	22	

Notes

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

SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

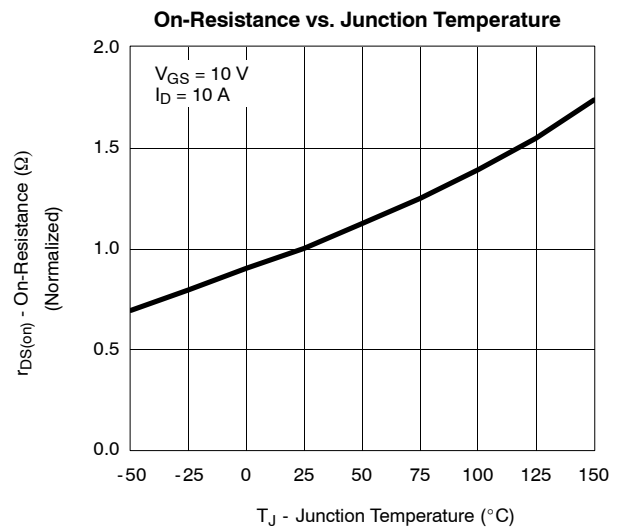
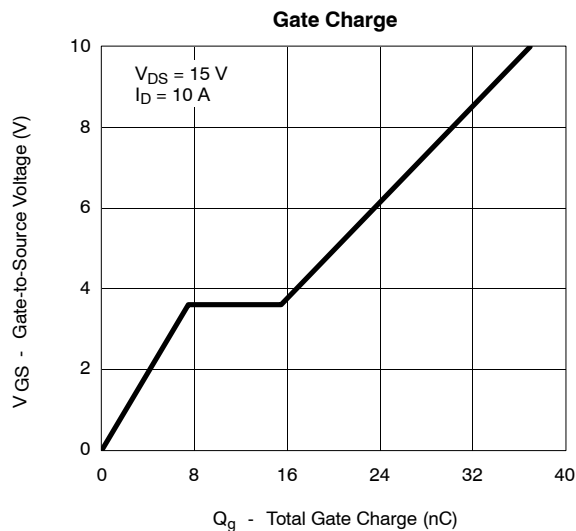
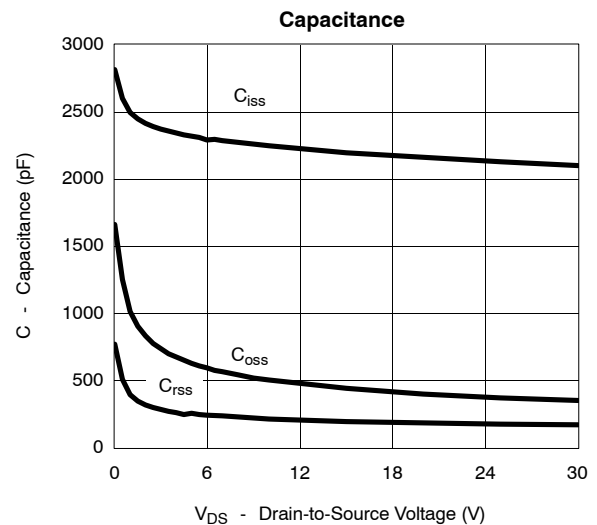
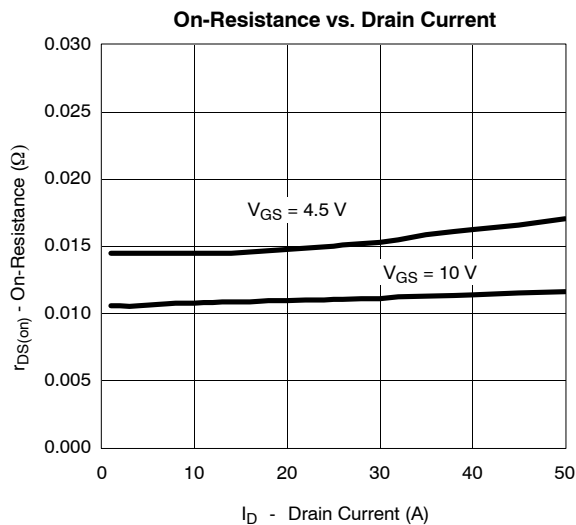
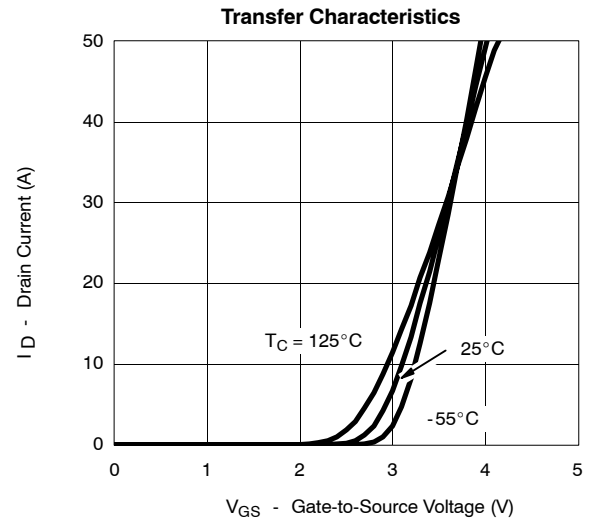
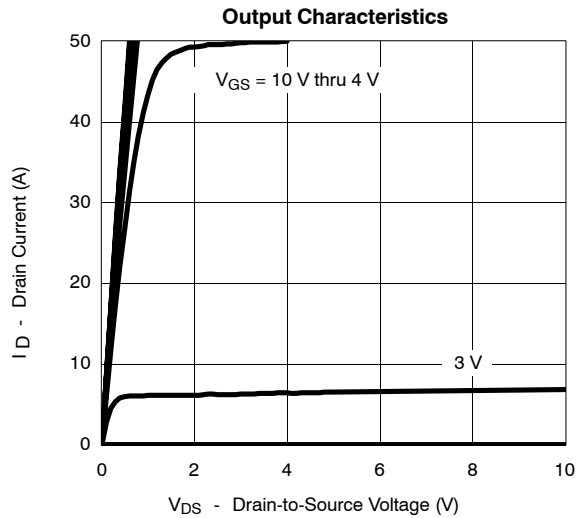
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	1.0		3.0	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 20\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\ \text{V}$, $V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 30\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 55^\circ\text{C}$			25	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \geq 5\ \text{V}$, $V_{GS} = 10\ \text{V}$	20			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}$, $I_D = 10\ \text{A}$		0.011	0.0135	Ω
		$V_{GS} = 4.5\ \text{V}$, $I_D = 5\ \text{A}$		0.015	0.020	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\ \text{V}$, $I_D = 10\ \text{A}$		38		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 2.3\ \text{A}$, $V_{GS} = 0\ \text{V}$		0.7	1.1	V
Dynamic^b						
Gate Charge	Q_g	$V_{DS} = 15\ \text{V}$, $V_{GS} = 5\ \text{V}$, $I_D = 10\ \text{A}$		20	34	nC
Total Gate Charge	Q_{gt}	$V_{DS} = 15\ \text{V}$, $V_{GS} = 10\ \text{V}$, $I_D = 10\ \text{A}$		37	60	
Gate-Source Charge	Q_{gs}			7		
Gate-Drain Charge	Q_{gd}	$V_{DS} = 15\ \text{V}$, $V_{GS} = 10\ \text{V}$, $I_D = 10\ \text{A}$		7.0		
Gate Resistance	R_g		0.5	1.5	2.6	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 25\ \text{V}$, $R_L = 25\ \Omega$ $I_D \cong 1\ \text{A}$, $V_{GEN} = 10\ \text{V}$, $R_G = 6\ \Omega$		19	30	ns
Rise Time	t_r			9	20	
Turn-Off Delay Time	$t_{d(off)}$			70	100	
Fall Time	t_f			20	80	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 2.3\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$		40	80	

Notes

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



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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