



Si4410BDY

Vishay Siliconix

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

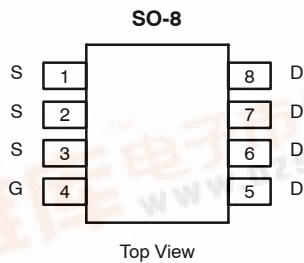
PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
30	0.0135 @ V _{GS} = 10 V	10
	0.020 @ V _{GS} = 4.5 V	8

FEATURES

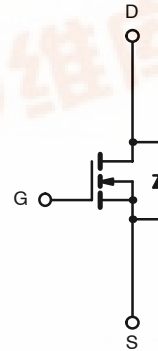
- TrenchFET® Power MOSFET
- 100% R_g Tested

APPLICATIONS

- Battery Switch



Ordering Information: Si4410BDY
Si4410BDY-T1 (with Tape and Reel)



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		V _{DS}	30		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	I _D	10	7.5	A
	T _A = 70°C		8	6	
Pulsed Drain Current (10 μs Pulse Width)		I _{DM}	50		
Continuous Source Current (Diode Conduction) ^a		I _S	2.3	1.26	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	2.5	1.4	W
	T _A = 70°C		1.6	0.9	
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	t ≤ 10 sec	R _{thJA}	40	50	°C/W
	Steady State		70	90	
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	25	30	

Notes:
a. Surface Mounted on 1" x 1" FR4 Board.



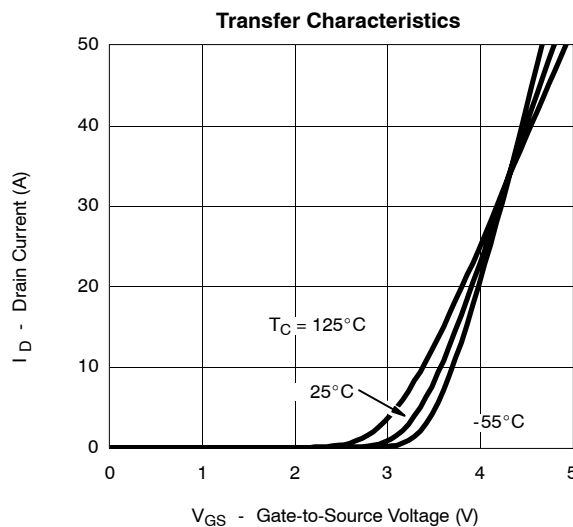
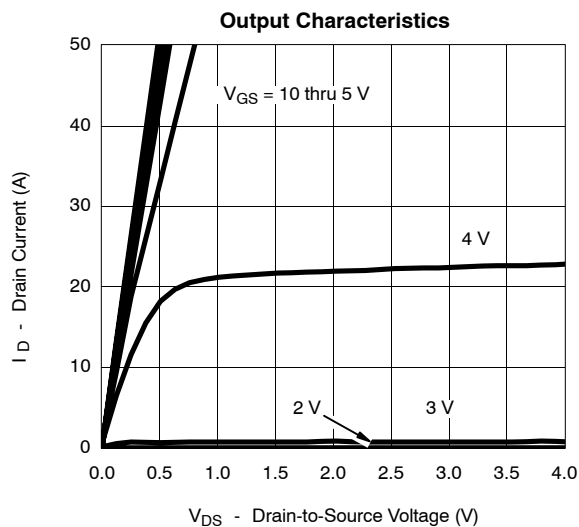
SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.0		3.0	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			1	μA
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55 °C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 10 A		0.011	0.0135	Ω
		V _{GS} = 4.5 V, I _D = 5 A		0.0165	0.020	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 10 A		25		S
Diode Forward Voltage ^a	V _{SD}	I _S = 2.3 A, V _{GS} = 0 V		0.76	1.1	V
Dynamic^b						
Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 5 V, I _D = 10 A		13	20	nC
Total Gate Charge	Q _{gt}	V _{DS} = 15 V, V _{GS} = 10 V, I _D = 10 A		25	40	
Gate-Source Charge	Q _{gs}			5.5		
Gate-Drain Charge	Q _{gd}			3.7		
Gate Resistance	R _g	f = 1 MHz	0.5	1.6	2.7	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = 25 V, R _L = 25 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω		10	15	ns
Rise Time	t _r			10	15	
Turn-Off Delay Time	t _{d(off)}			40	60	
Fall Time	t _f			15	25	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2.3 A, di/dt = 100 A/μs		35	70	

Notes

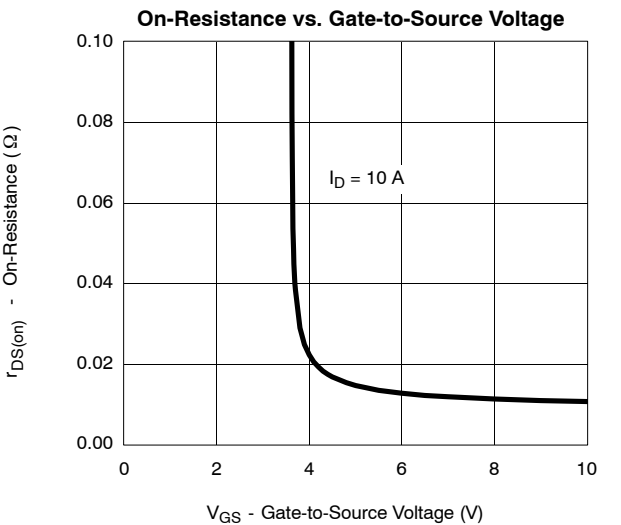
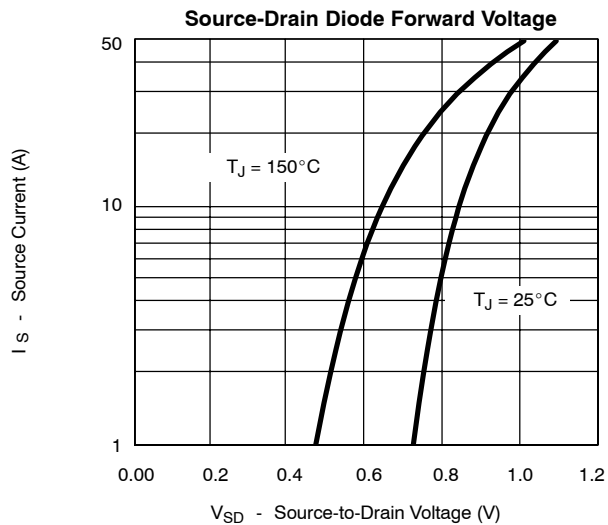
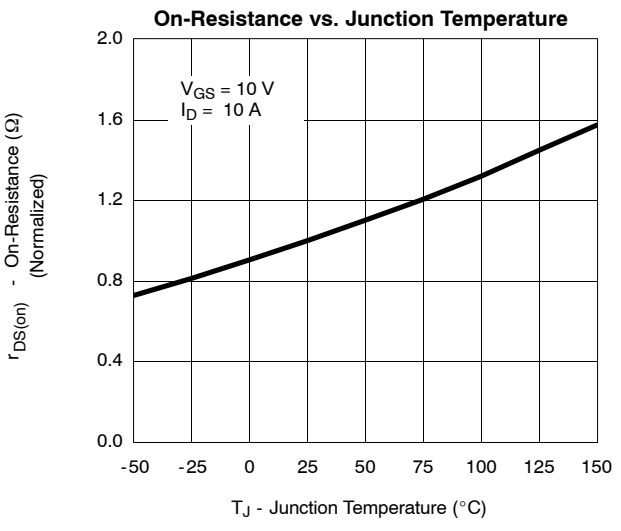
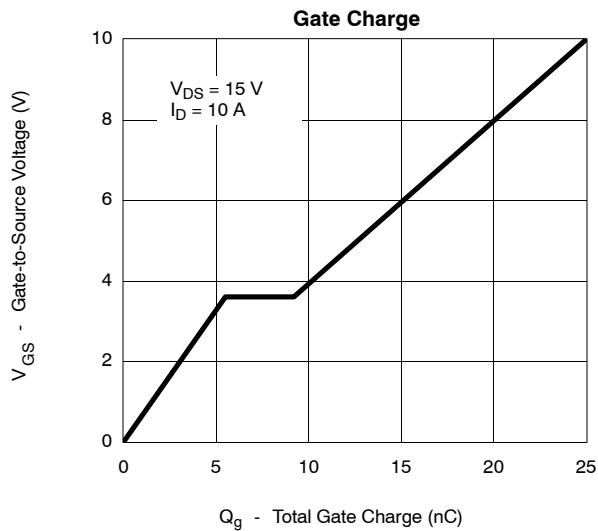
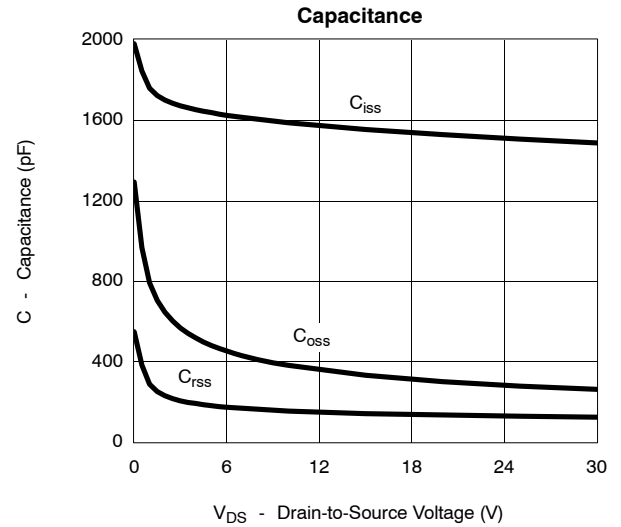
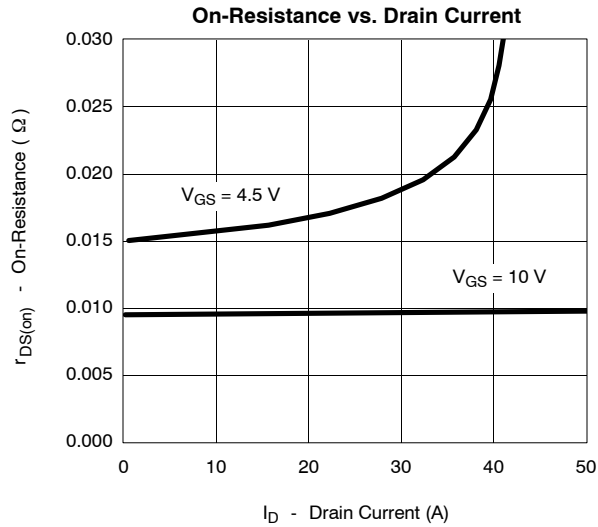
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



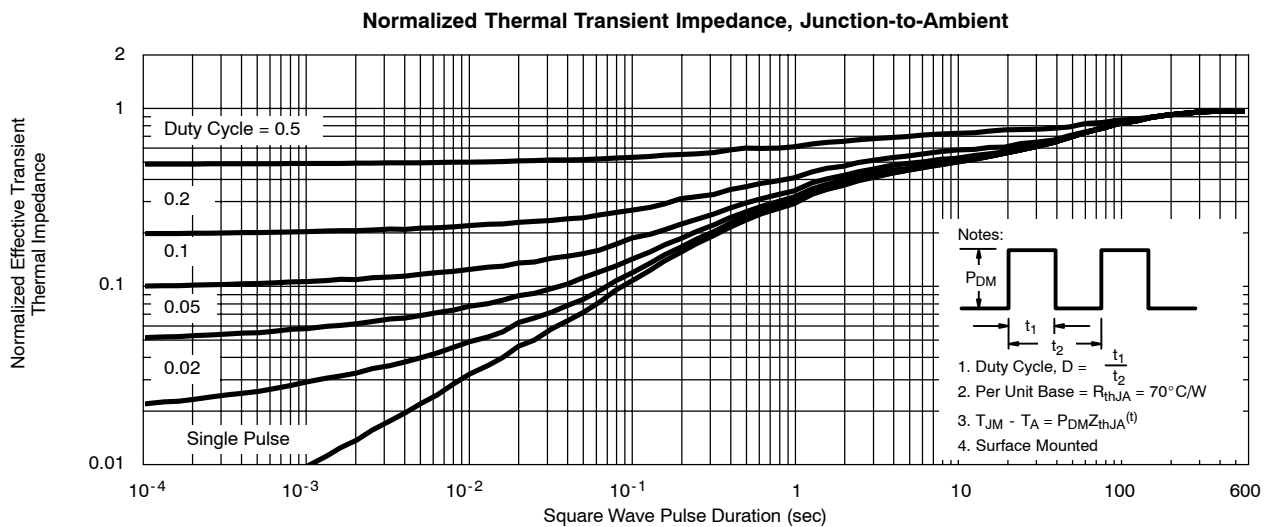
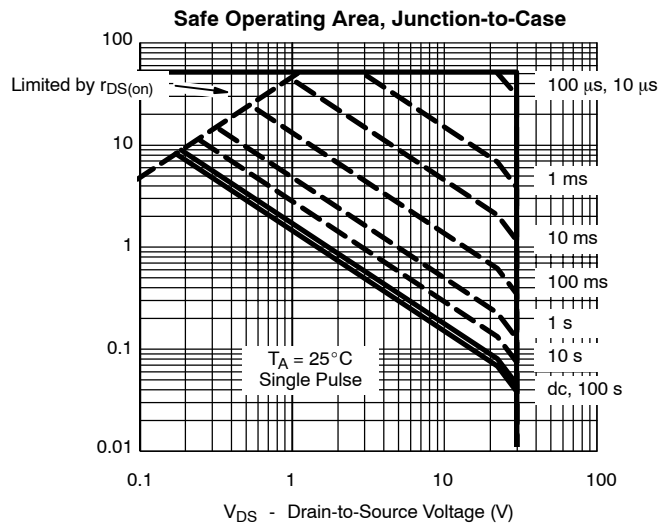
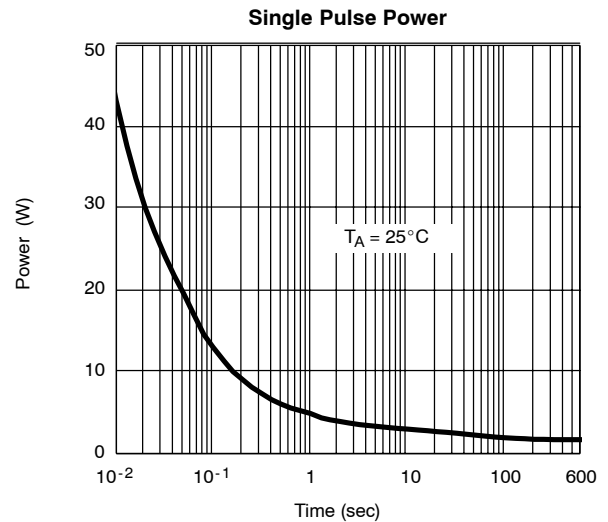
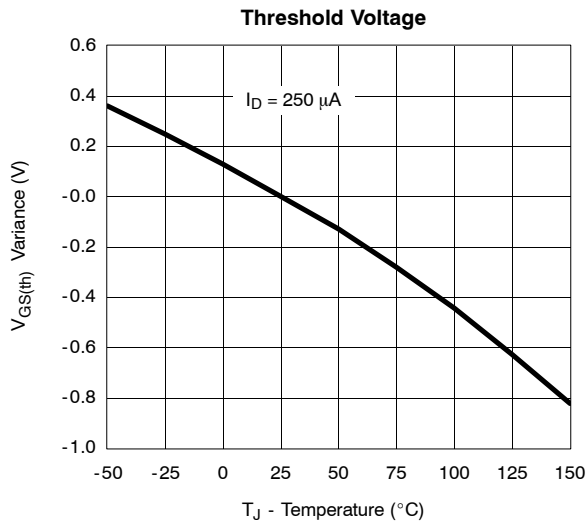


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