



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

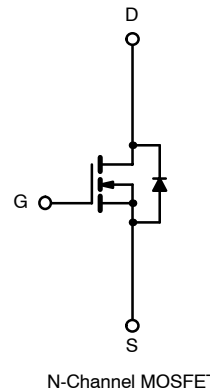
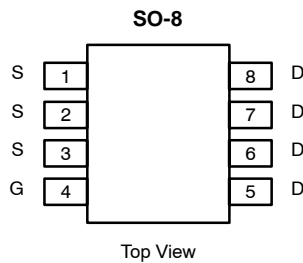
PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
30	0.0045 @ V _{GS} = 10 V	20
	0.0055 @ V _{GS} = 4.5 V	19

FEATURES

- TrenchFET® Power MOSFET
- Optimized for “Low Side” Synchronous Rectifier Operation
- 100% R_g Tested

APPLICATIONS

- DC/DC Converters
- Synchronous Rectifiers



Ordering Information: Si4362DY
 Si4362DY-T1 (with Tape and Reel)
 Si4362DY—E3 (Lead Free)
 Si4362DY-T1—E3 (Lead Free with Tape and Reel)

ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED) ^a			
Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	30	
Gate-Source Voltage	V _{GS}	± 12	
Continuous Drain Current (T _J = 150 °C) ^a	I _D	T _A = 25 °C	20
		T _A = 70 °C	15
Pulsed Drain Current (10 μs Pulse Width)	I _{DM}	60	A
Continuous Source Current (Diode Conduction) ^a	I _S	2.9	
Maximum Power Dissipation ^a	P _D	T _A = 25 °C	3.5
		T _A = 70 °C	2.2
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	

THERMAL RESISTANCE RATINGS ^a				
Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient	R _{thJA}	29	35	°C/W
Maximum Junction-to-Foot (Drain)	R _{thJF}	13	16	

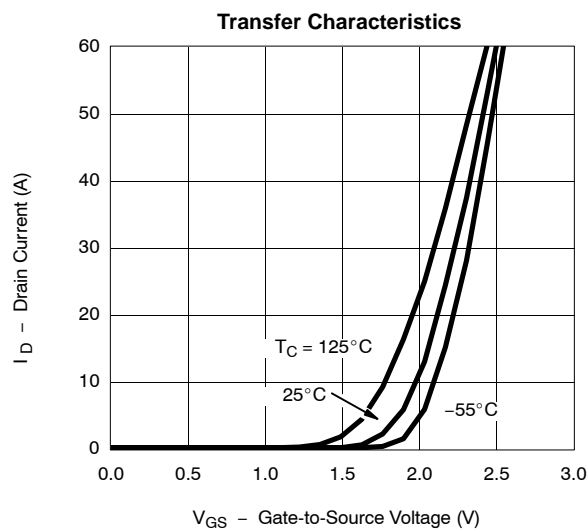
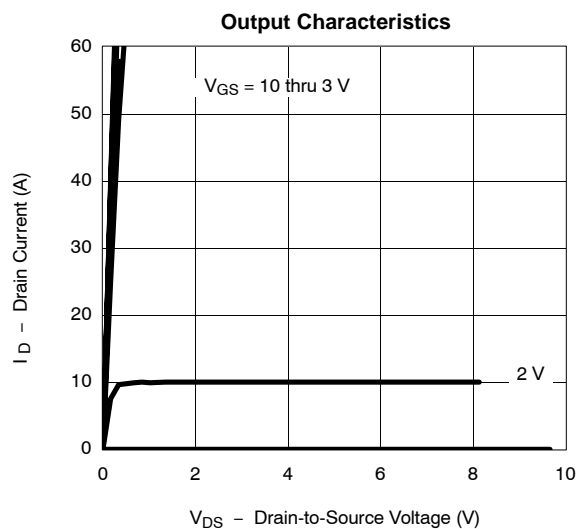
Notes
 a. Surface Mounted on 1" x 1" FR4 Board, t ≤ 10 sec

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	0.6			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±12 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	30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 20 A		0.0035	0.0045	Ω
		V _{GS} = 4.5 V, I _D = 19 A		0.0042	0.0055	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 20 A		90		S
Diode Forward Voltage ^a	V _{SD}	I _S = 2.9 A, V _{GS} = 0 V		0.75	1.1	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 4.5 V, I _D = 20 A		42	55	nC
Gate-Source Charge	Q _{gs}			12.8		
Gate-Drain Charge	Q _{gd}			7.7		
Gate Resistance	R _G		0.5	1.3	2.2	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _g = 6 Ω		17	30	ns
Rise Time	t _r			14	25	
Turn-Off Delay Time	t _{d(off)}			158	230	
Fall Time	t _f			43	65	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2.9 A, di/dt = 100 A/μs		50	80	

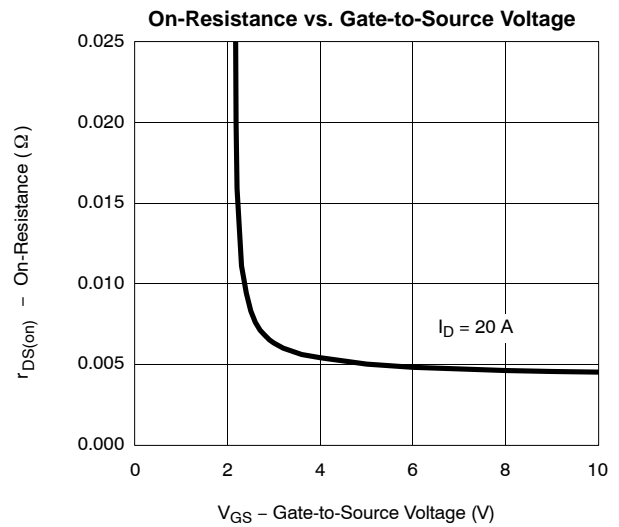
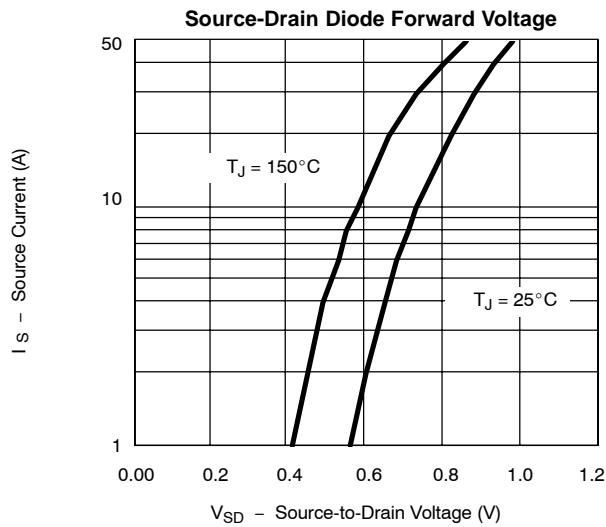
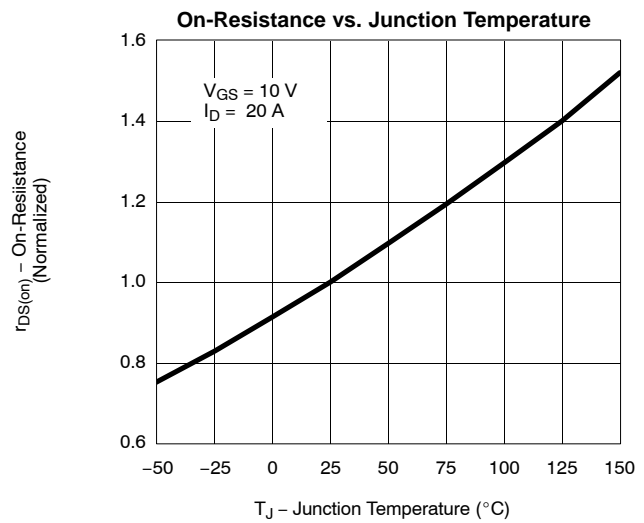
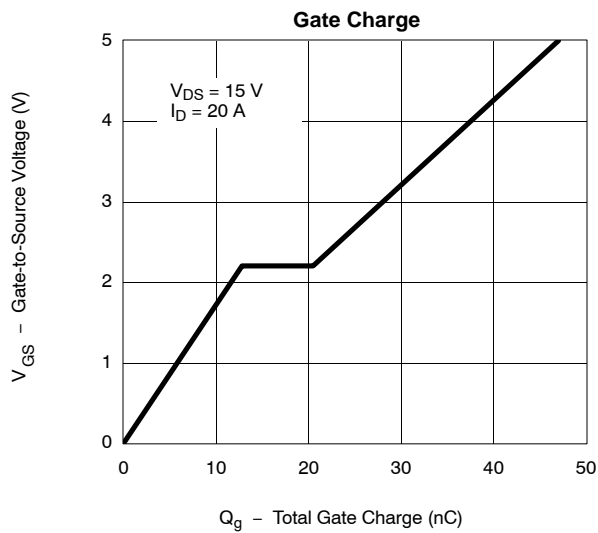
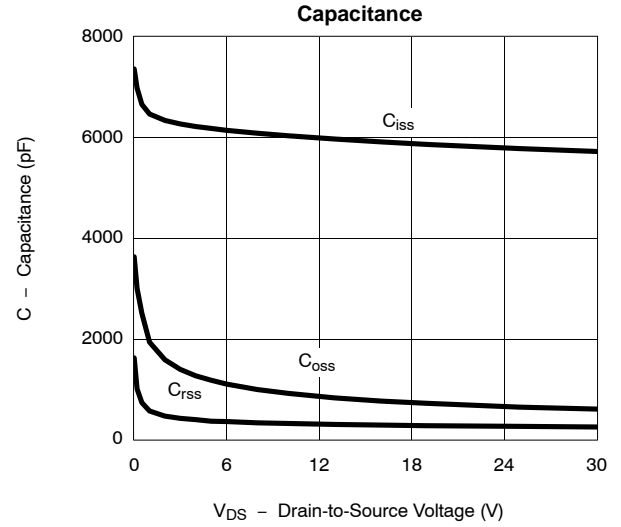
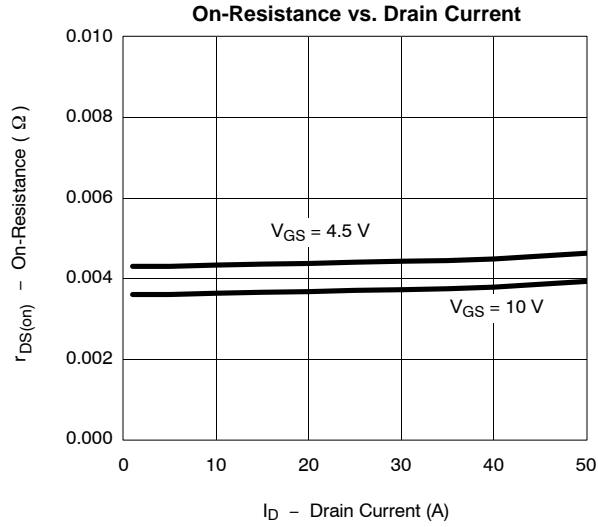
Notes

- 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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