

VISHAY

New Product

Si4348DY

Vishay Siliconix

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

PRODUCT SUMMARY

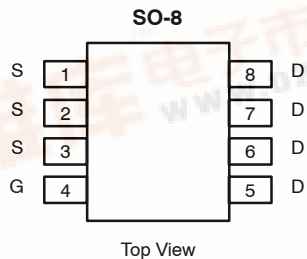
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.0125 @ $V_{GS} = 10$ V	11
	0.014 @ $V_{GS} = 4.5$ V	10

FEATURES

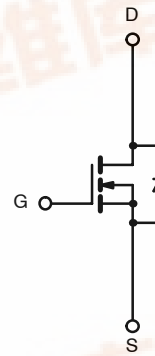
- TrenchFET® Gen II Power MOSFET

APPLICATIONS

- High-Side DC/DC Conversion
 - Notebook
 - Desktop
 - Server
- Notebook Logic DC/DC, Low-Side



Ordering Information: Si4348DY—E3 (Lead Free)
Si4348DY-T1—E3 (Lead Free with Tape and Reel)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	10 secs	Steady State	Unit
Drain-Source Voltage	V_{DS}	30		V
Gate-Source Voltage	V_{GS}	± 12		
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	11	8.0	A
		8.9	6.5	
Pulsed Drain Current	I_{DM}	40		
Continuous Source Current (Diode Conduction) ^a	I_S	2.2	1.20	
Maximum Power Dissipation ^a	P_D	2.5	1.31	W
		1.6	0.84	
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}	43	50	$^\circ\text{C/W}$
		74	95	
Maximum Junction-to-Foot (Drain)	R_{thJF}	19	25	

Notes:

^a Surface Mounted on 1" x 1" FR4 Board.

Si4348DY

Vishay Siliconix

New Product



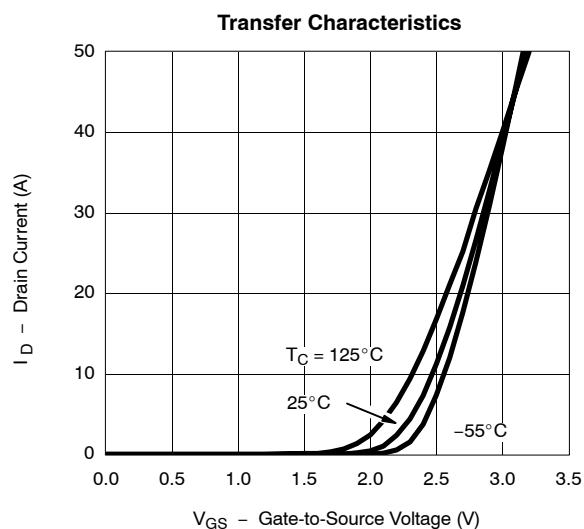
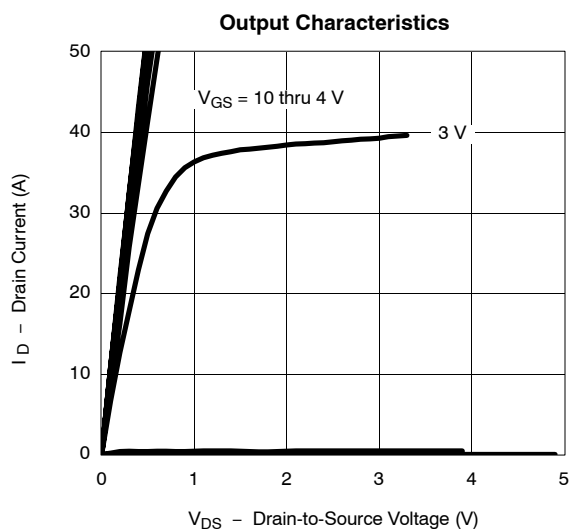
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	0.8		2.0	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 12\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\ \text{V}$, $V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 30\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 55^\circ\text{C}$			5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \geq 5\ \text{V}$, $V_{GS} = 10\ \text{V}$	30			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}$, $I_D = 11\ \text{A}$		0.0105	0.0125	Ω
		$V_{GS} = 4.5\ \text{V}$, $I_D = 10\ \text{A}$		0.0115	0.014	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\ \text{V}$, $I_D = 11\ \text{A}$		40		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 2.2\ \text{A}$, $V_{GS} = 0\ \text{V}$		0.75	1.1	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 15\ \text{V}$, $V_{GS} = 4.5\ \text{V}$, $I_D = 11\ \text{A}$		15	23	nC
Gate-Source Charge	Q_{gs}			5		
Gate-Drain Charge	Q_{gd}			4.3		
Gate Resistance	R_g			0.5		Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15\ \text{V}$, $R_L = 15\ \Omega$ $I_D \cong 1\ \text{A}$, $V_{GEN} = 10\ \text{V}$, $R_g = 6\ \Omega$		10	15	ns
Rise Time	t_r			11	17	
Turn-Off Delay Time	$t_{d(off)}$			55	85	
Fall Time	t_f			9	15	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 2.2\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$		22	35	

Notes

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

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

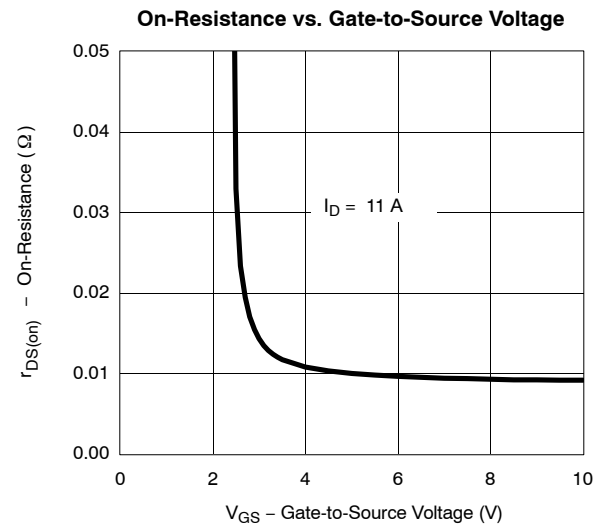
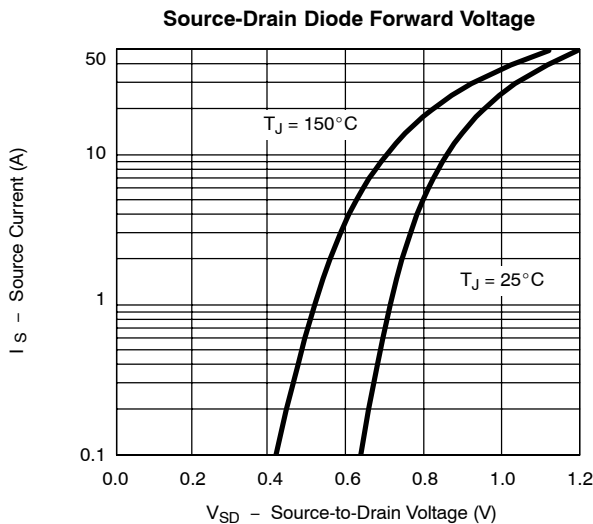
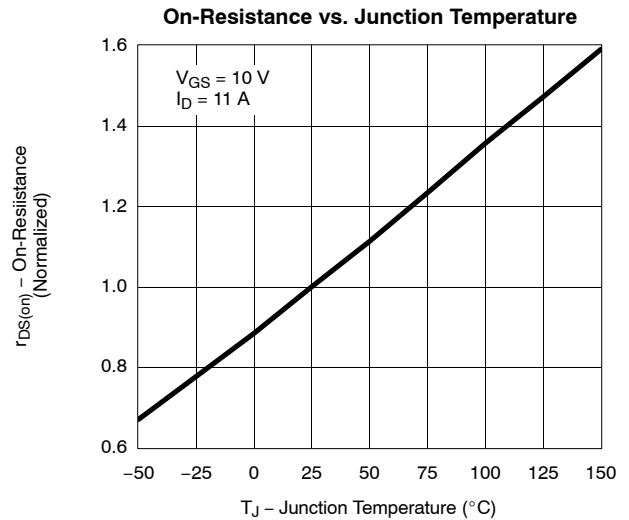
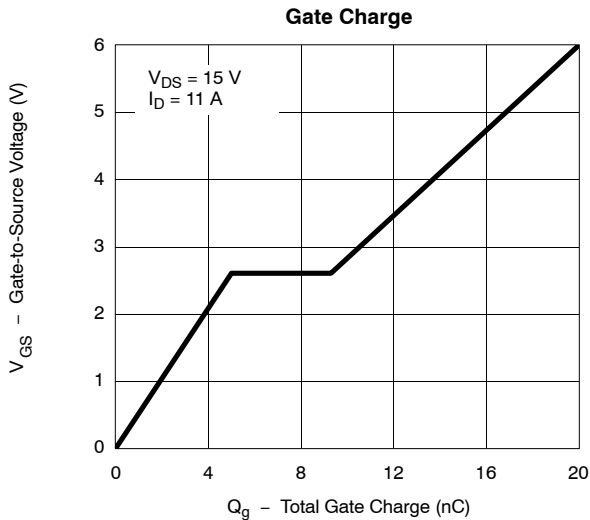
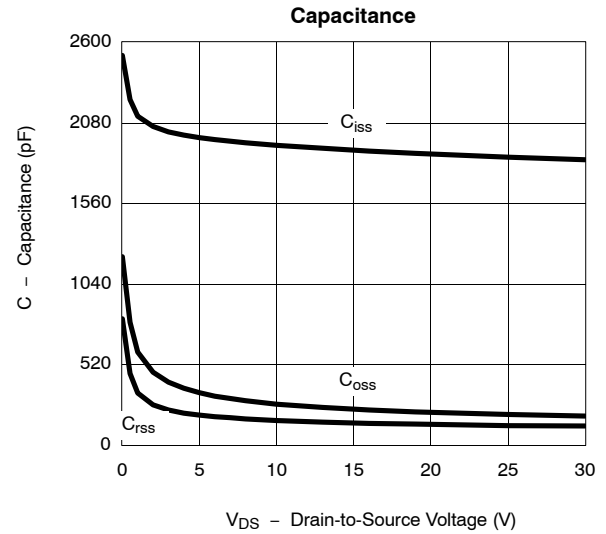
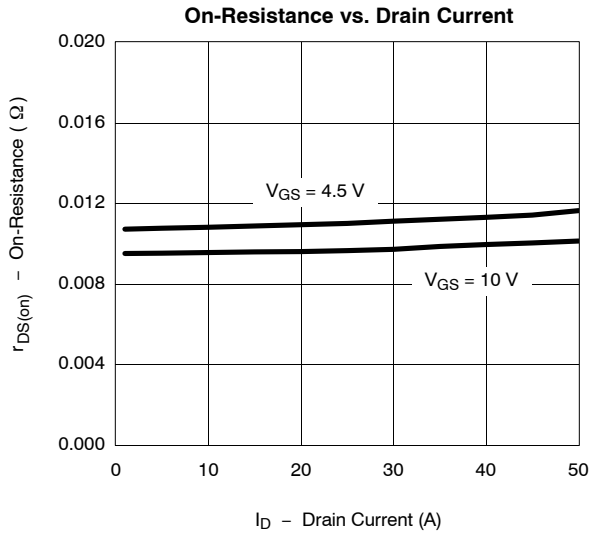




New Product

Si4348DY
Vishay Siliconix

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



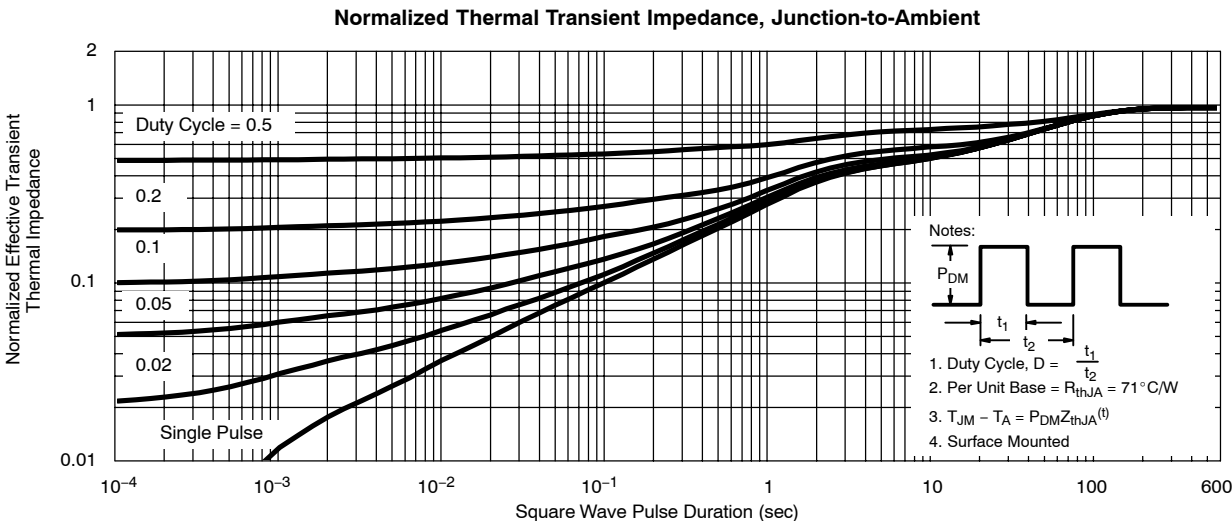
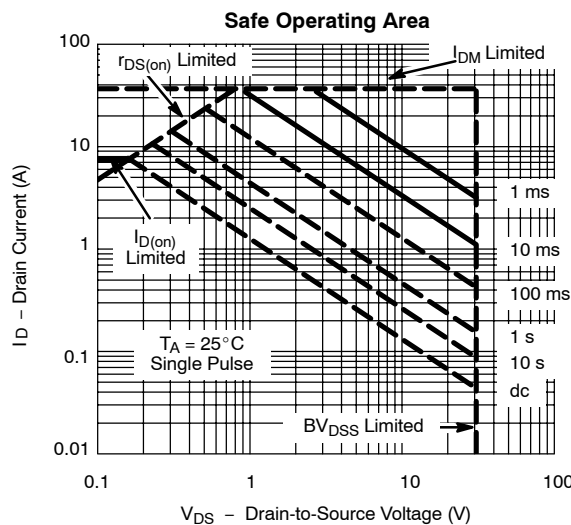
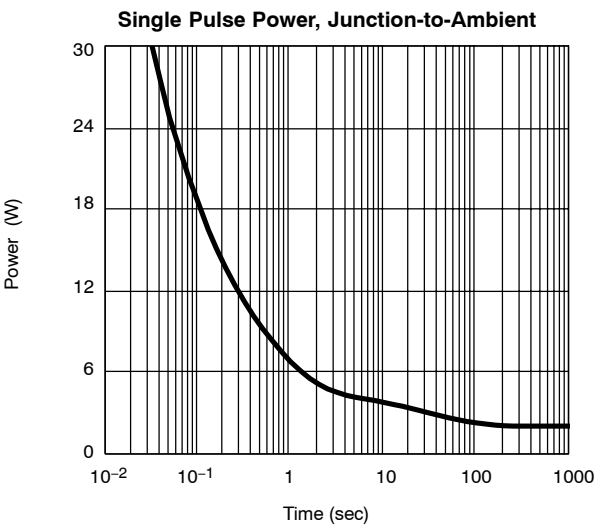
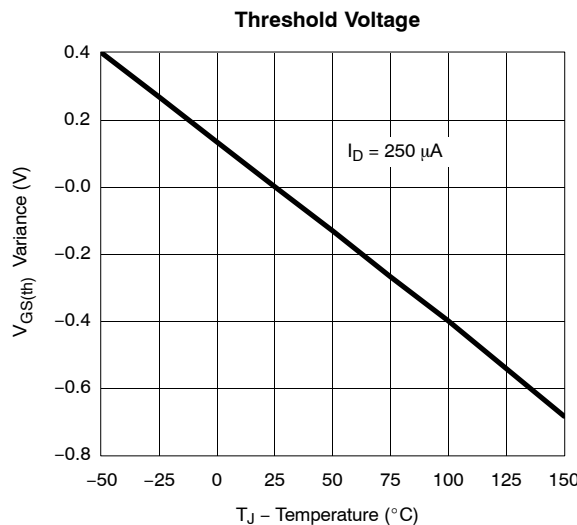
Si4348DY

Vishay Siliconix

New Product



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





New Product

Si4348DY
Vishay Siliconix

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

