



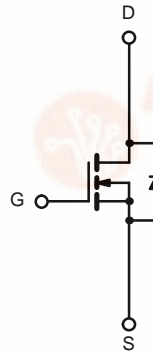
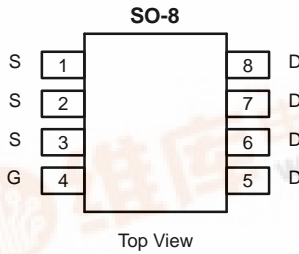
New Product

Si4426DY
Vishay Siliconix

N-Channel 20-V (D-S) MOSFET

TrenchFET®
Power MOSFETs
2.5-V Rated

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.025 @ V _{GS} = 4.5 V	±8.5
	0.035 @ V _{GS} = 2.5 V	±7.1



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)				
Parameter	Symbol	10 secs	Steady State	Unit
Drain-Source Voltage	V _{DS}	20		V
Gate-Source Voltage	V _{GS}	±12		
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	±8.5	±6.5	A
	T _A = 70°C	±6.8	±5.2	
Pulsed Drain Current (10 μs Pulse Width)	I _{DM}	±40		
Continuous Source Current (Diode Conduction) ^a	I _S	2.1	2.1	W
Maximum Power Dissipation ^a	T _A = 25°C	2.5	1.5	
	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	R _{thJA}	t ≤ 10 sec	38	50	°C/W
		Steady State	70	85	
Maximum Junction-to-Foot (Drain)	R _{thJF}	20	25		

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

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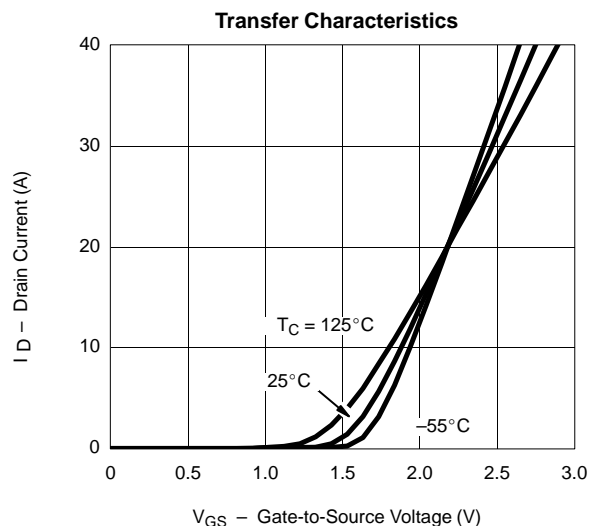
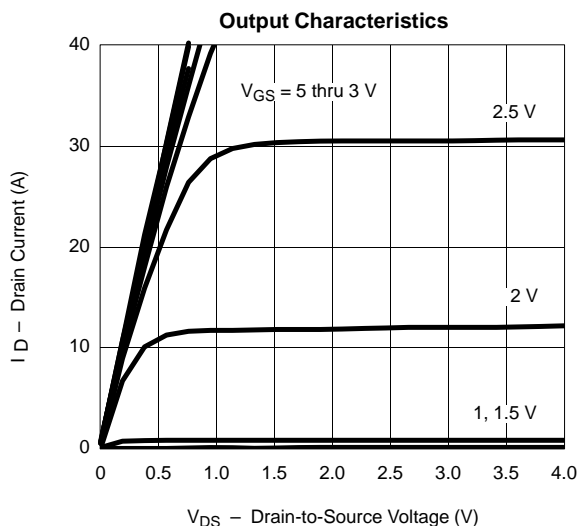


SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.6			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 12 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 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	40			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 8.5 A		0.019	0.025	Ω
		V _{GS} = 2.5 V, I _D = 7.1 A		0.025	0.035	
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 8.5 A		27		S
Diode Forward Voltage ^a	V _{SD}	I _S = 2.1 A, V _{GS} = 0 V		0.8	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 8.5 A		25	50	nC
Gate-Source Charge	Q _{gs}		6.5			
Gate-Drain Charge	Q _{gd}		4			
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω		40	60	ns
Rise Time	t _r		40	60		
Turn-Off Delay Time	t _{d(off)}		90	150		
Fall Time	t _f		40	60		
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 2.1 A, di/dt = 100 A/μs		40	

Notes

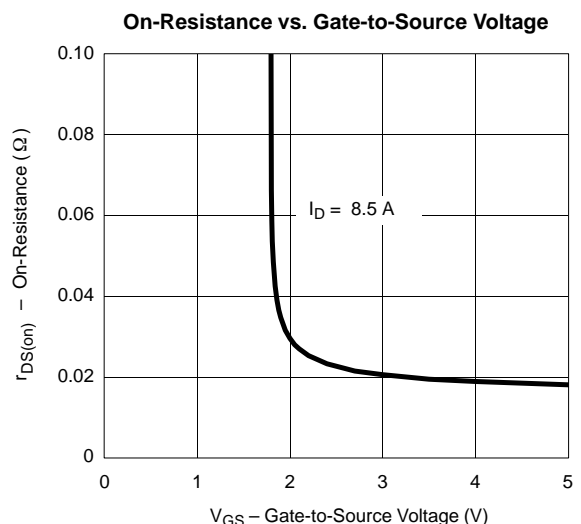
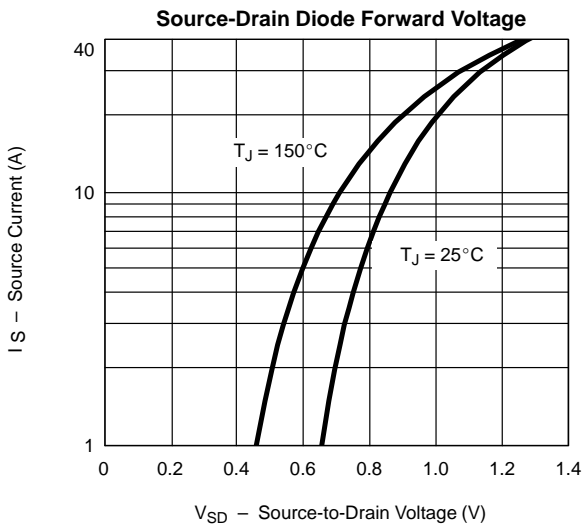
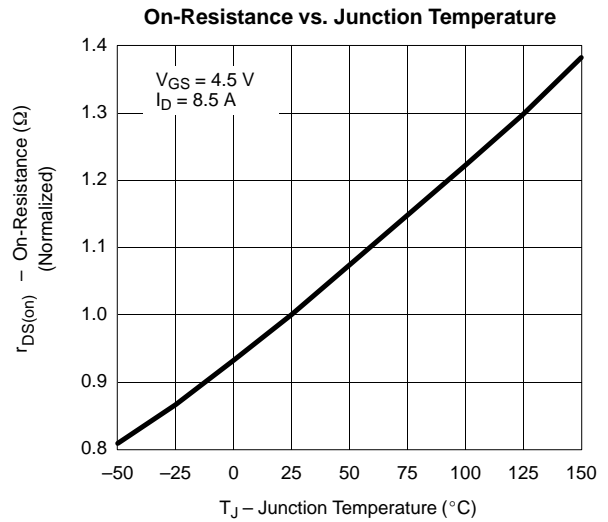
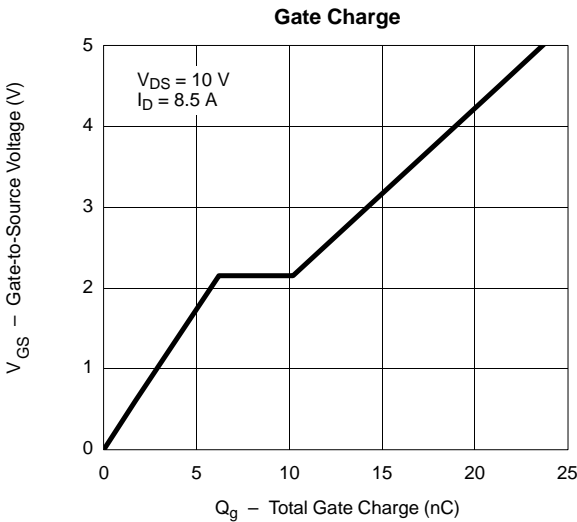
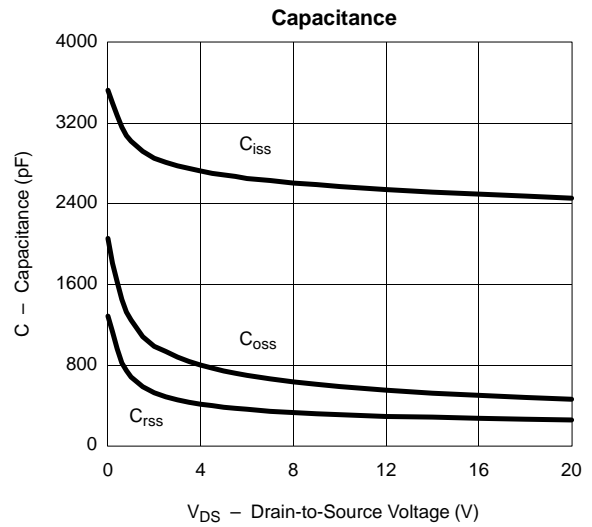
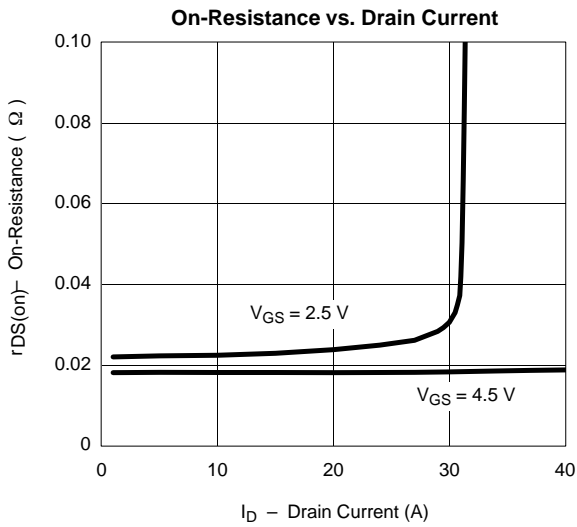
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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