



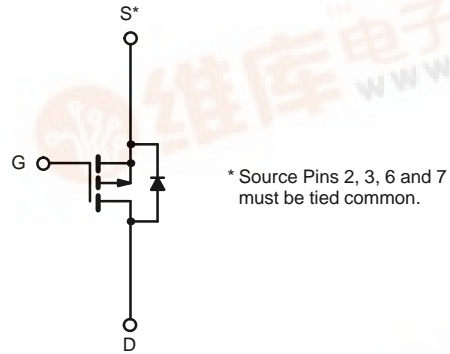
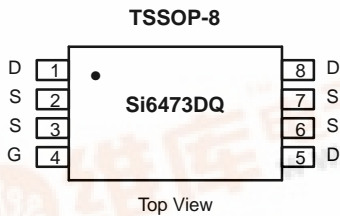
New Product

**Si6473DQ**  
Vishay Siliconix

**P-Channel 20-V (D-S) MOSFET**

**TrenchFET®**  
Power MOSFETs

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
-20	0.0125 @ V <sub>GS</sub> = -4.5 V	-9.5
	0.016 @ V <sub>GS</sub> = -2.5 V	-8.5
	0.0215 @ V <sub>GS</sub> = -1.8 V	-7.3



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)					
Parameter	Symbol	10 secs	Steady State	Unit	
Drain-Source Voltage	V <sub>DS</sub>	-20		V	
Gate-Source Voltage	V <sub>GS</sub>	±8			
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25°C	-9.5	-6.2	A
		T <sub>A</sub> = 70°C	-5.9	-4.9	
Pulsed Drain Current (10 μs Pulse Width)	I <sub>DM</sub>	-30			
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	-1.5	-0.95		
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25°C	1.75	1.08	W
		T <sub>A</sub> = 70°C	1.14	0.69	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter	Symbol	Typical	Maximum	Unit	
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>	t ≤ 10 sec	55	70	°C/W
		Steady State	95	115	
Maximum Junction-to-Foot (Drain)	R <sub>thJF</sub>	35	45		

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

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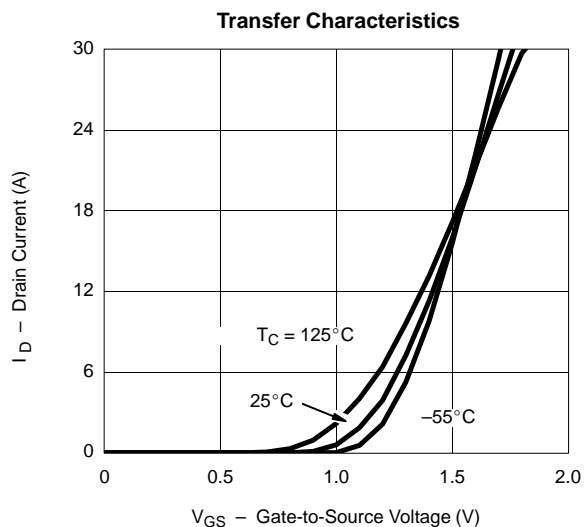
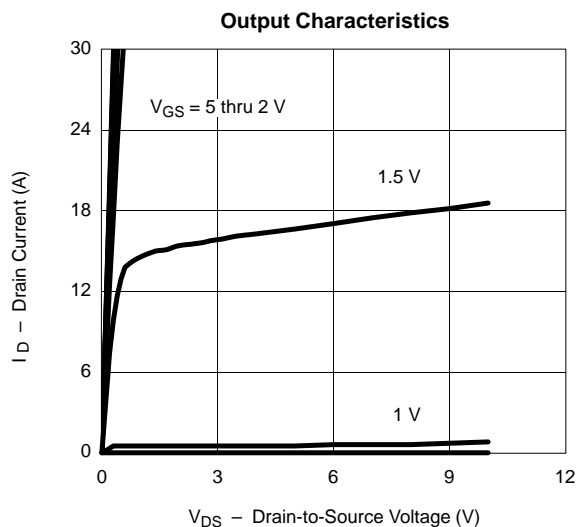
## SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-0.45			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ± 8 V			± 100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 70 °C			-10	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	20			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -9.5 A		0.010	0.0125	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -8.5 A		0.013	0.016	
		V <sub>GS</sub> = -1.8 V, I <sub>D</sub> = -7.5 A		0.0175	0.0215	Ω
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -9.5 A		45		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1.5 A, V <sub>GS</sub> = 0 V		-0.64	-1.1	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = -5 V, I <sub>D</sub> = -9.5 A		47.5	70	nC
Gate-Source Charge	Q <sub>gs</sub>			7.6		
Gate-Drain Charge	Q <sub>gd</sub>			7.6		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 15 Ω I <sub>D</sub> ≅ -1 A, V <sub>GEN</sub> = -4.5 V, R <sub>G</sub> = 6 Ω		42	60	ns
Rise Time	t <sub>r</sub>			33	50	
Turn-Off Delay Time	t <sub>d(off)</sub>			220	330	
Fall Time	t <sub>f</sub>			95	140	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = -1.5 A, di/dt = 100 A/μs		50	80	

Notes

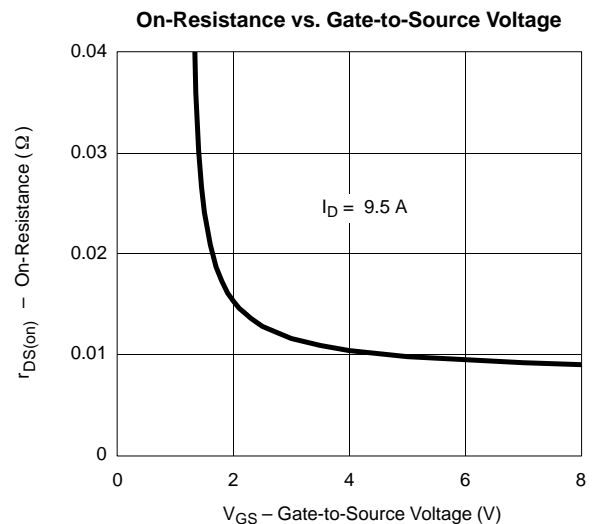
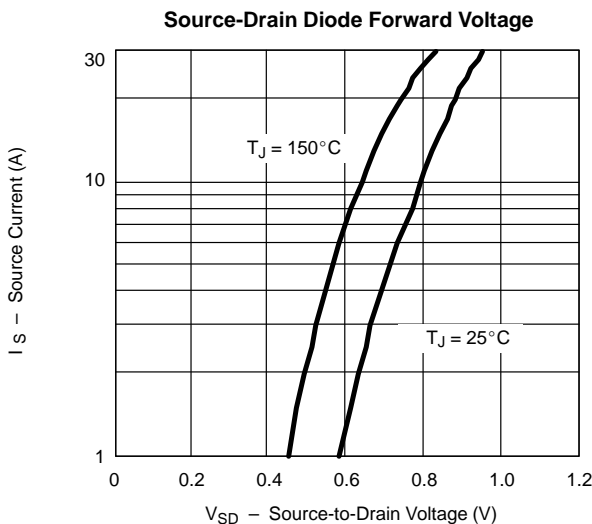
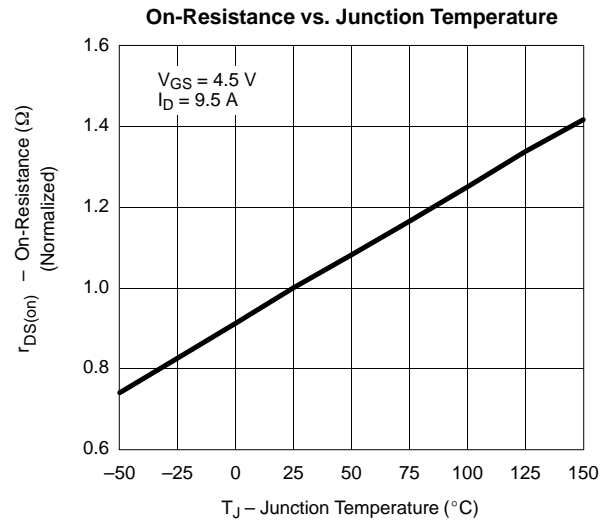
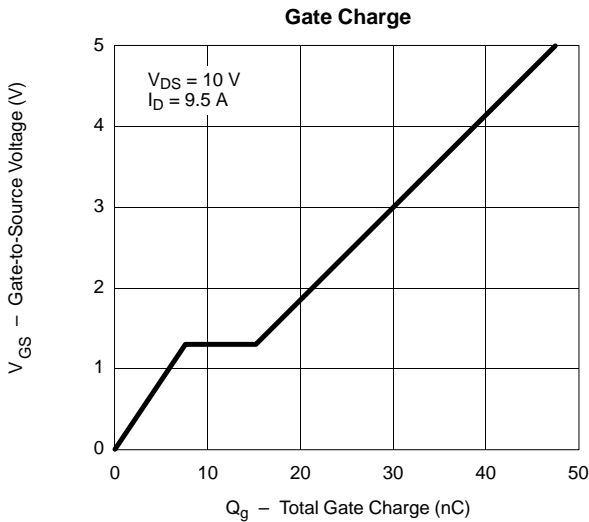
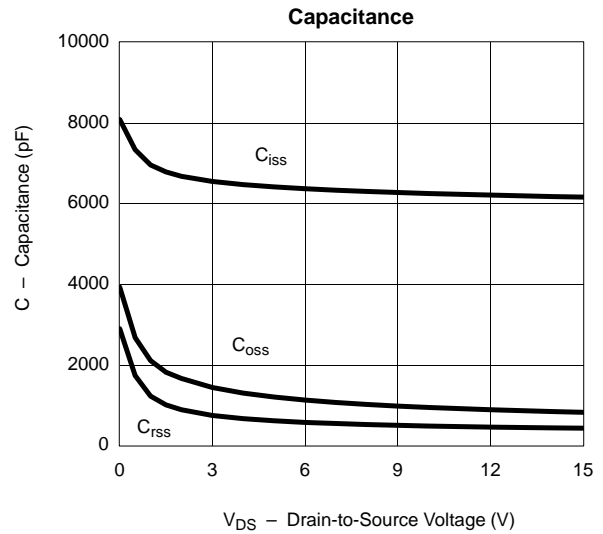
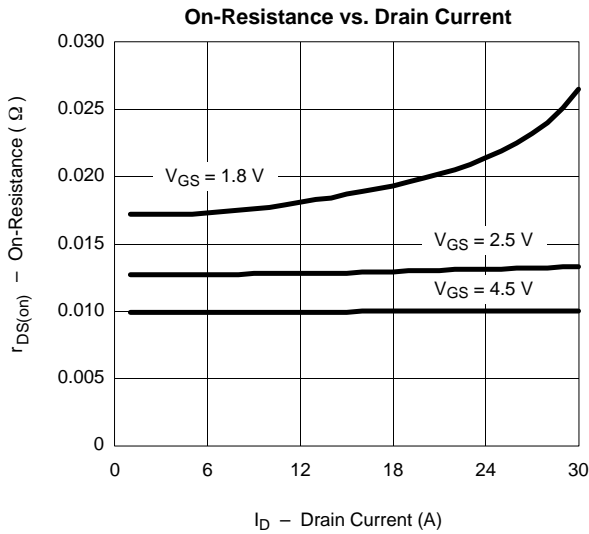
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

## TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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