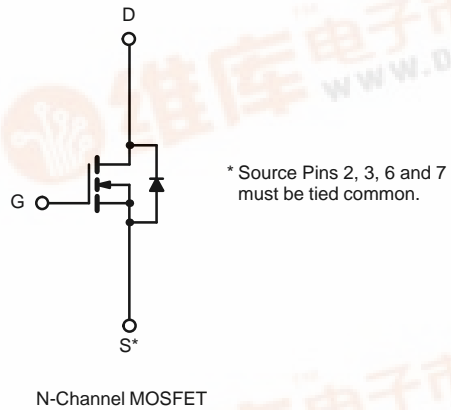
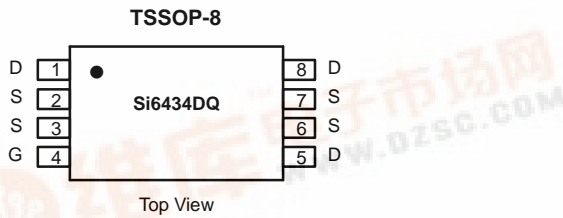




**Si6434DQ**  
Vishay Siliconix

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

PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
30	0.028 @ V <sub>GS</sub> = 10 V	± 5.6
	0.042 @ V <sub>GS</sub> = 4.5 V	± 4.5



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V <sub>DS</sub>	30	V
Gate-Source Voltage		V <sub>GS</sub>	± 20	
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	T <sub>A</sub> = 25°C	I <sub>D</sub>	± 5.6	A
	T <sub>A</sub> = 70°C		± 4.4	
Pulsed Drain Current		I <sub>DM</sub>	± 30	
Continuous Source Current (Diode Conduction) <sup>a</sup>		I <sub>S</sub>	1.25	
Maximum Power Dissipation <sup>a</sup>	T <sub>A</sub> = 25°C	P <sub>D</sub>	1.5	W
	T <sub>A</sub> = 70°C		1.0	
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Limit	Unit
Maximum Junction-to-Ambient <sup>a</sup>		R <sub>thJA</sub>	83	°C/W

Notes:  
a. Surface Mounted on FR4 Board, t ≤ 10 sec.

# Si6434DQ

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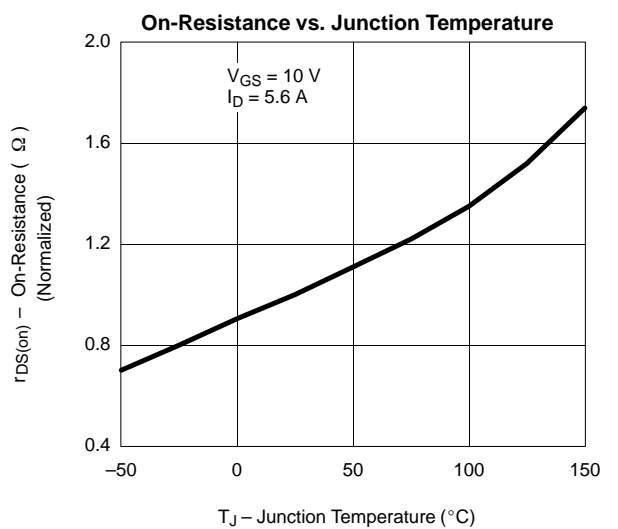
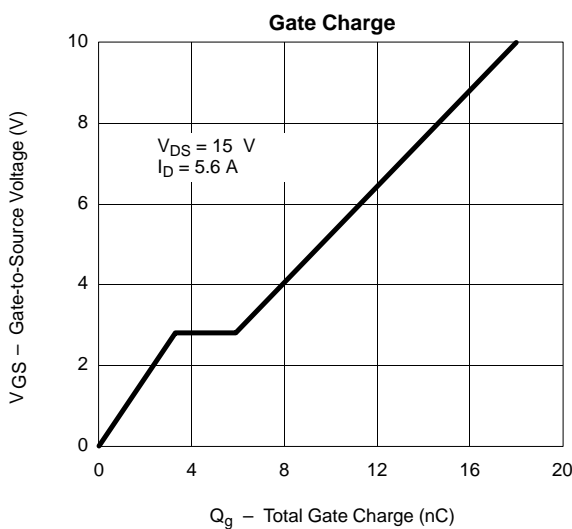
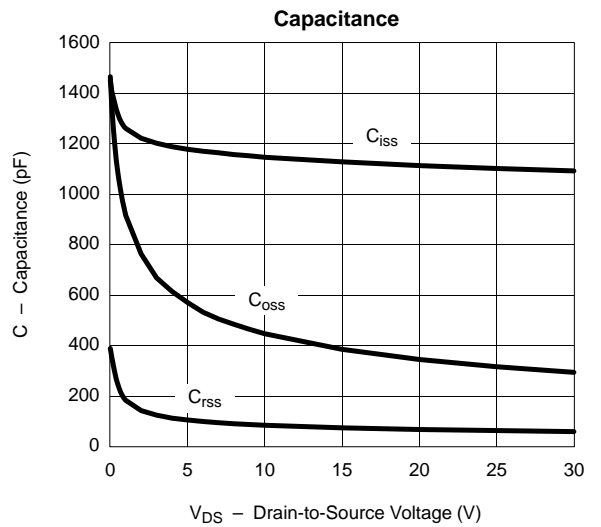
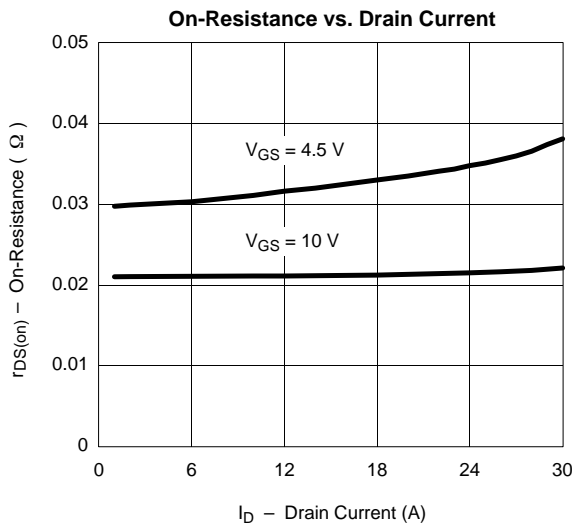
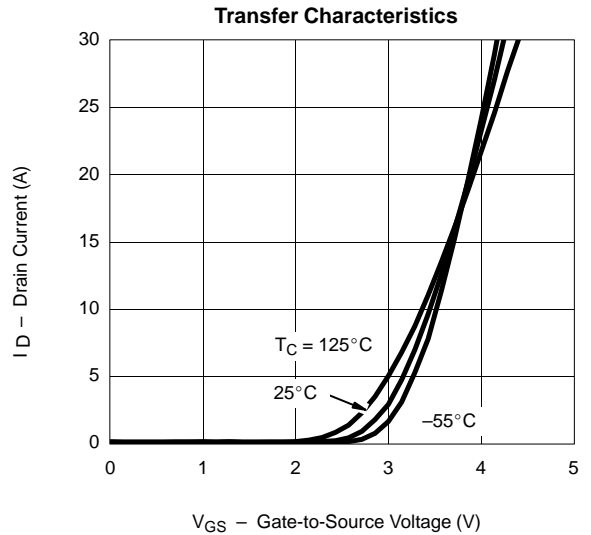
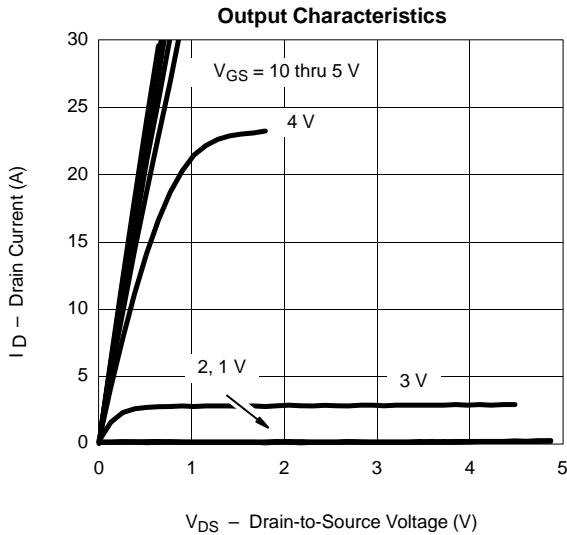


SPECIFICATIONS (T <sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	1			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0 V			1	μA
		V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55 °C			25	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 10 V	20			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 5.6 A		0.022	0.028	Ω
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 3.5 A		0.030	0.042	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 5.6 A		14		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.25 A, V <sub>GS</sub> = 0 V		0.75	1.1	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 10 V, I <sub>D</sub> = 5.6 A		18	29	nC
Gate-Source Charge	Q <sub>gs</sub>			3.3		
Gate-Drain Charge	Q <sub>gd</sub>			2.6		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 15 V, R <sub>L</sub> = 15 Ω I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 10 V, R <sub>G</sub> = 6 Ω		9	15	ns
Rise Time	t <sub>r</sub>			12	20	
Turn-Off Delay Time	t <sub>d(off)</sub>			38	55	
Fall Time	t <sub>f</sub>			19	28	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.25 A, di/dt = 100 A/μs		45		

- 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)**





**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

