



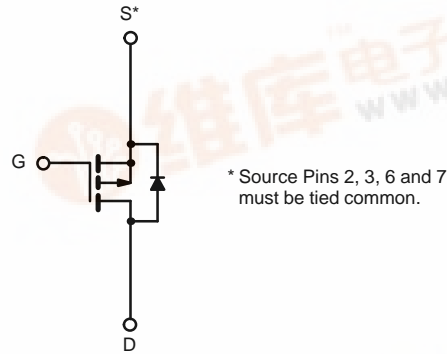
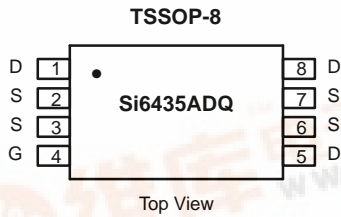
New Product

Si6435ADQ  
Vishay Siliconix

P-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	0.030 @ V <sub>GS</sub> = -10 V	±5.5
	0.055 @ V <sub>GS</sub> = -4.5 V	±4.1

**TrenchFET®**  
Power MOSFETS



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>	-30		V	
Gate-Source Voltage	V <sub>GS</sub>	±20			
Continuous Drain Current (T <sub>J</sub> = 150°C) <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> = 25°C	±5.5	±4.7	A
		T <sub>A</sub> = 70°C	±4.5	±3.7	
Pulsed Drain Current (10 μs Pulse Width)	I <sub>DM</sub>	±30			
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	-1.35	-0.95		
Maximum Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> = 25°C	1.5	1.05	W
		T <sub>A</sub> = 70°C	1.0	0.67	
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	65	83	°C/W
		Steady State	100	120	
Maximum Junction-to-Foot	R <sub>thJF</sub>	43	52		

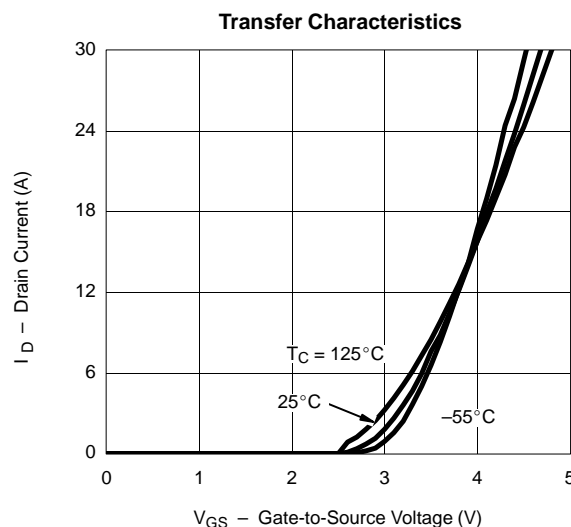
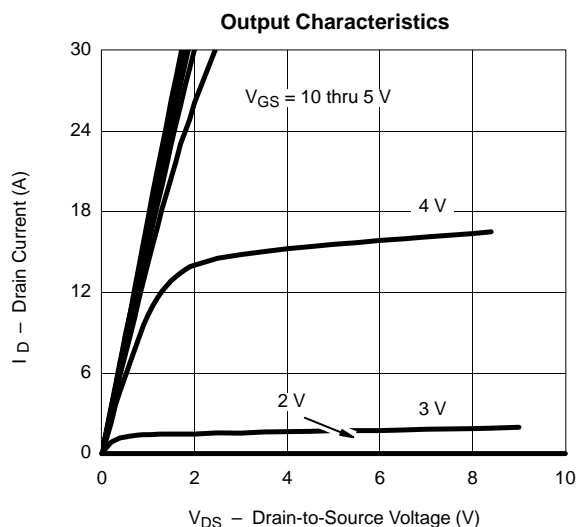
Notes:  
a. Surface Mounted on 1" x 1" FR4 Board.


**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	-1.0			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> = -24 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -24 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> = -10 V	-30			A
		V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V	-7			
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -5.5 A		0.024	0.030	Ω
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -4.1 A		0.042	0.055	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -5.5 A		12		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -1.3 A, V <sub>GS</sub> = 0 V		-0.8	-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> = -5 V, I <sub>D</sub> = -5.5 A		15	20	nC
Gate-Source Charge	Q <sub>gs</sub>			5.7		
Gate-Drain Charge	Q <sub>gd</sub>			5.0		
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		12	20	ns
Rise Time	t <sub>r</sub>			10	20	
Turn-Off Delay Time	t <sub>d(off)</sub>			42	60	
Fall Time	t <sub>f</sub>			17	25	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> = -1.3 A, di/dt = 100 A/μs		40	

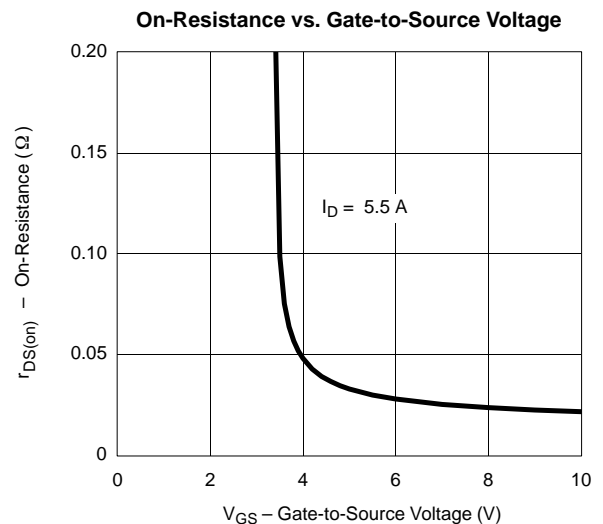
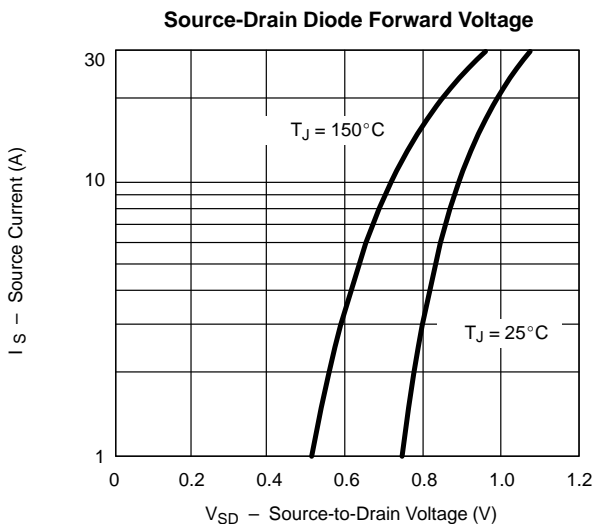
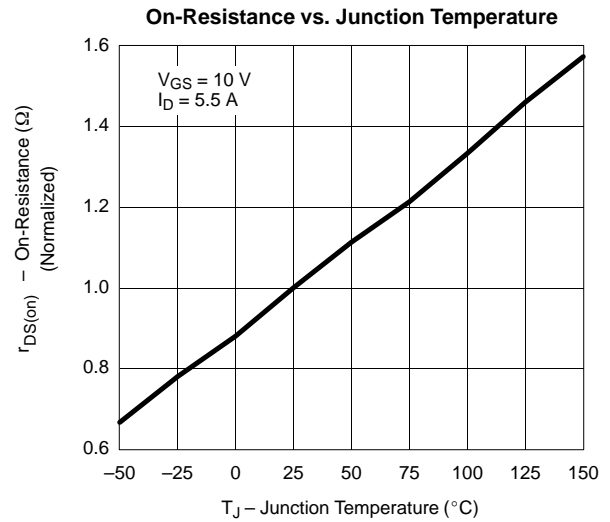
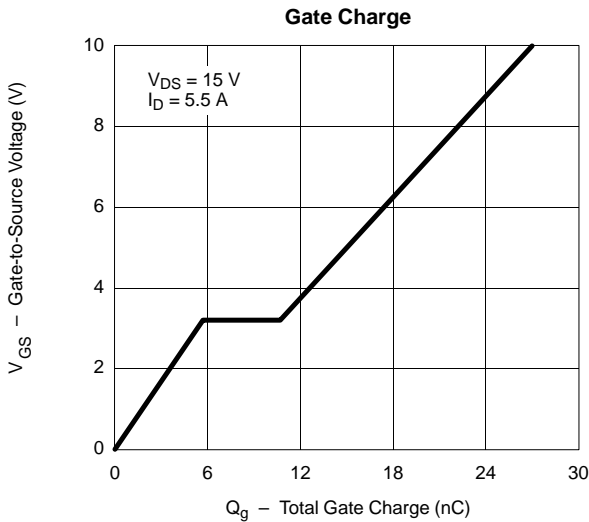
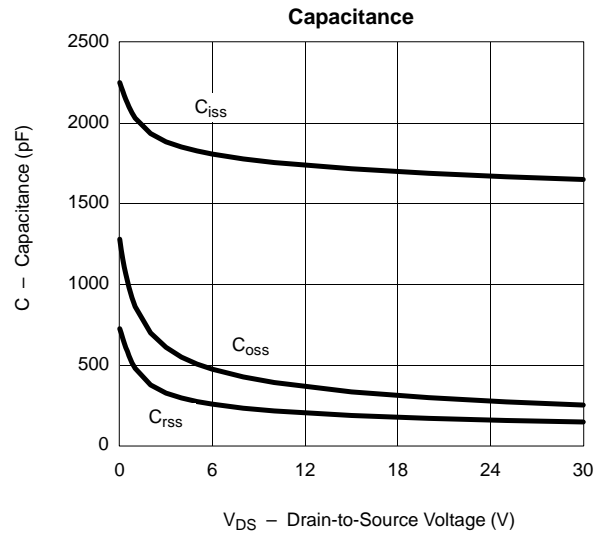
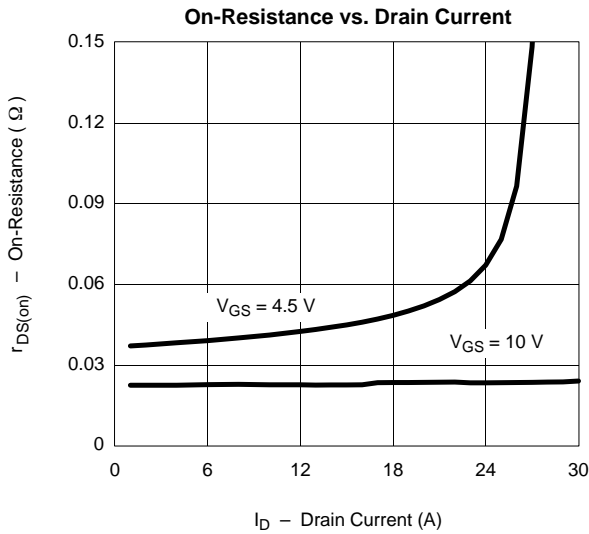
## Notes

- 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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