

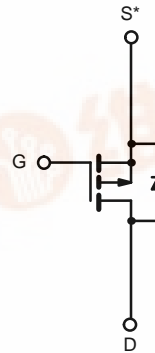
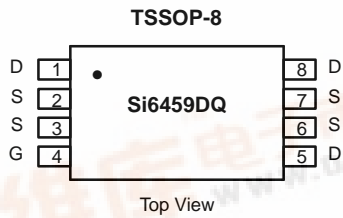


Si6459DQ
Vishay Siliconix

P-Channel 60-V (D-S) MOSFET

TrenchFET®
Power MOSFETS

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
-60	0.120 @ V _{GS} = -10 V	±2.6
	0.150 @ V _{GS} = -4.5 V	±2.4



* Source Pins 2, 3, 6 and 7 must be tied common.

P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	-60	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current (T _J = 150 °C) ^a	I _D	T _A = 25 °C	±2.6
		T _A = 70 °C	±2.1
Pulsed Drain Current	I _{DM}	±30	A
Continuous Source Current (Diode Conduction) ^a	I _S	-1.25	
Maximum Power Dissipation ^a	P _D	T _A = 25 °C	1.5
		T _A = 70 °C	1.0
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	83	°C/W

Notes:
 a. Surface Mounted on FR4 Board, t ≤ 10 sec.
 For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

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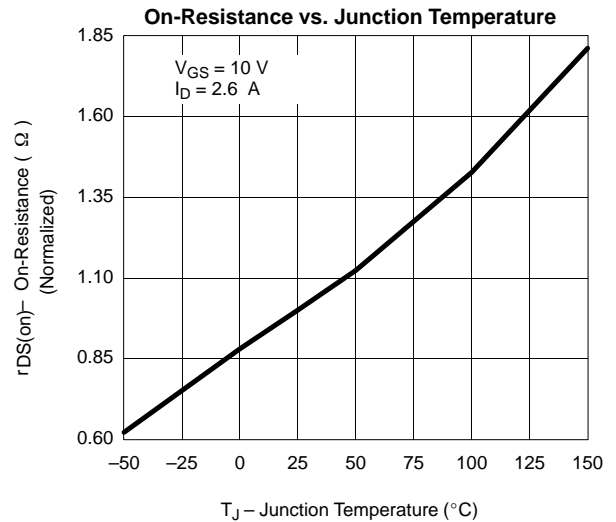
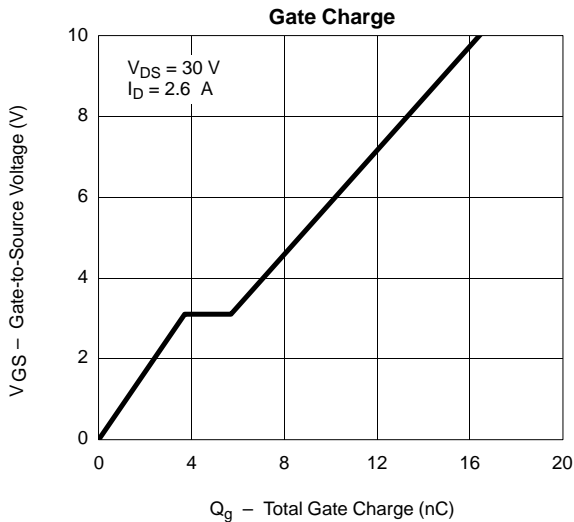
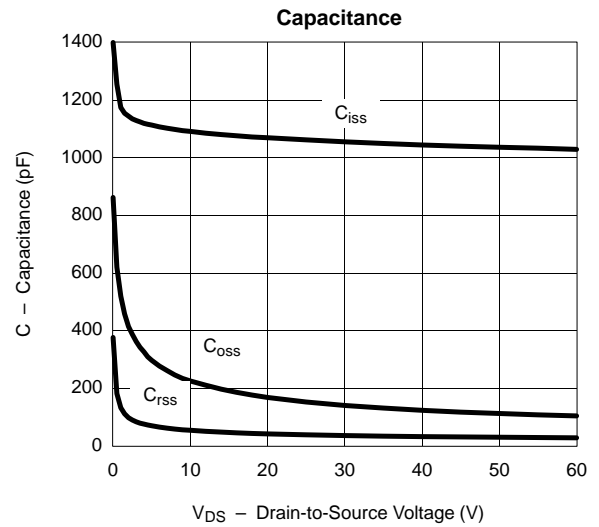
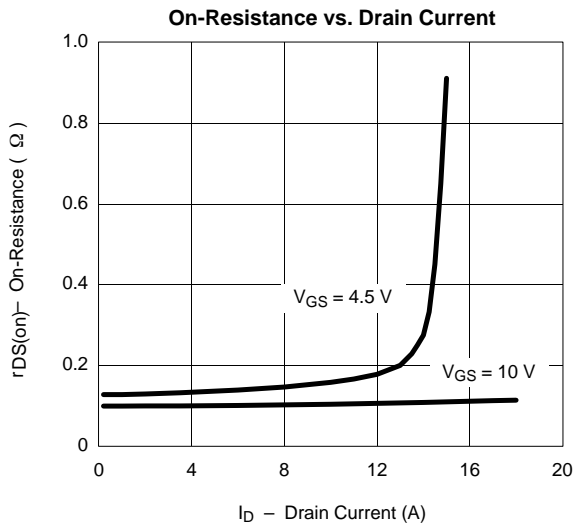
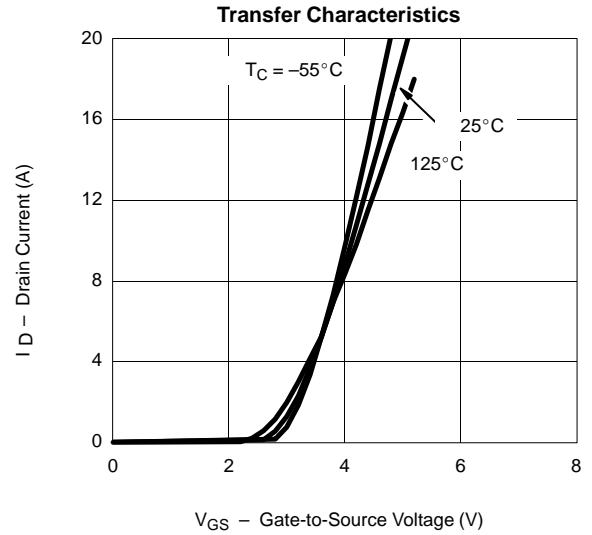
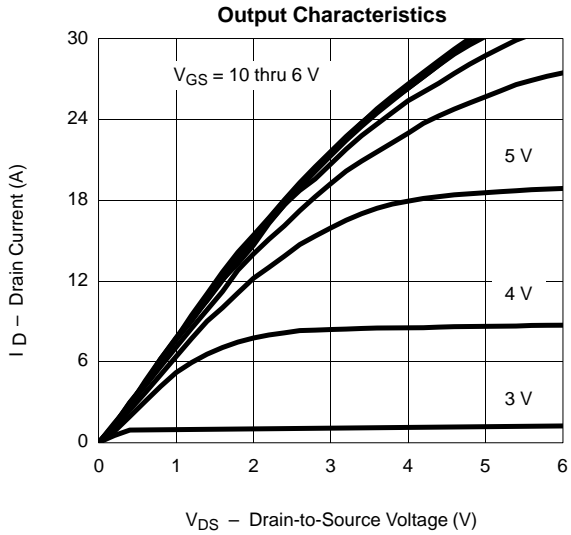
SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-1.0			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -60 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -60 V, V _{GS} = 0 V, T _J = 70 °C			-25	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -10 V	-20			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -10 V, I _D = -2.6 A		0.100	0.120	Ω
		V _{GS} = -4.5 V, I _D = -2.4 A		0.125	0.150	
Forward Transconductance ^a	g _{fs}	V _{DS} = -15 V, I _D = -2.6 A		7.5		S
Diode Forward Voltage ^a	V _{SD}	I _S = -1.25 A, V _{GS} = 0 V		-0.8	-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -30 V, V _{GS} = -10 V, I _D = -2.6 A		16	25	nC
Gate-Source Charge	Q _{gs}			3.7		
Gate-Drain Charge	Q _{gd}			2.0		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -30 V, R _L = 30 Ω I _D ≅ -1 A, V _{GEN} = -10 V, R _G = 6 Ω		8	15	ns
Rise Time	t _r			10	20	
Turn-Off Delay Time	t _{d(off)}			35	50	
Fall Time	t _f			12	25	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = -1.25 A, di/dt = 100 A/μs		60	90	

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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