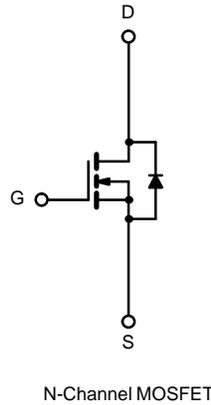
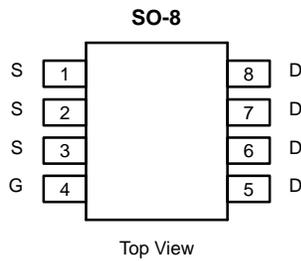


## N-Channel Reduced $Q_g$ , Fast Switching MOSFET

<b>PRODUCT SUMMARY</b>		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> (Ω)	I <sub>D</sub> (A)
30	0.010 @ V <sub>GS</sub> = 10 V	± 12.0
	0.015 @ V <sub>GS</sub> = 4.5 V	± 9.9



<b>ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>			
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, b</sup>	I <sub>D</sub>	T <sub>A</sub> = 25 °C	± 12.0
		T <sub>A</sub> = 70 °C	± 9.7
Pulsed Drain Current	I <sub>DM</sub>	± 80	A
Continuous Source Current (Diode Conduction) <sup>a, b</sup>	I <sub>S</sub>	2.3	
Maximum Power Dissipation <sup>a, b</sup>	P <sub>D</sub>	T <sub>A</sub> = 25 °C	2.5
		T <sub>A</sub> = 70 °C	1.6
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

<b>THERMAL RESISTANCE RATINGS</b>					
Parameter	Symbol	Typical	Maximum	Unit	
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>thJA</sub>		50	°C/W	
		Steady State	80		

**Notes**

- a. Surface Mounted on FR4 Board.
- b. t ≤ 10 sec.

For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>



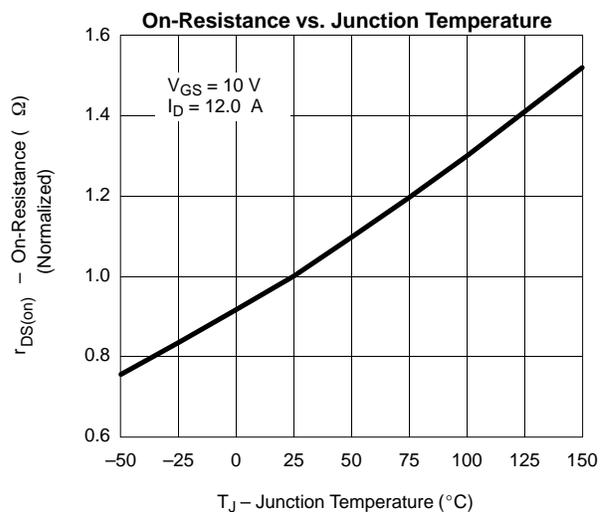
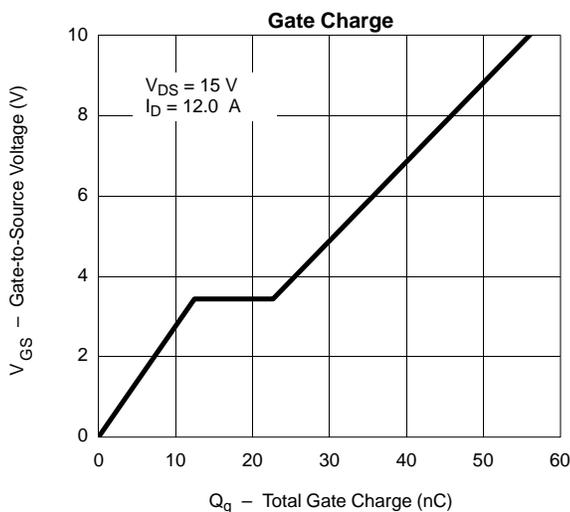
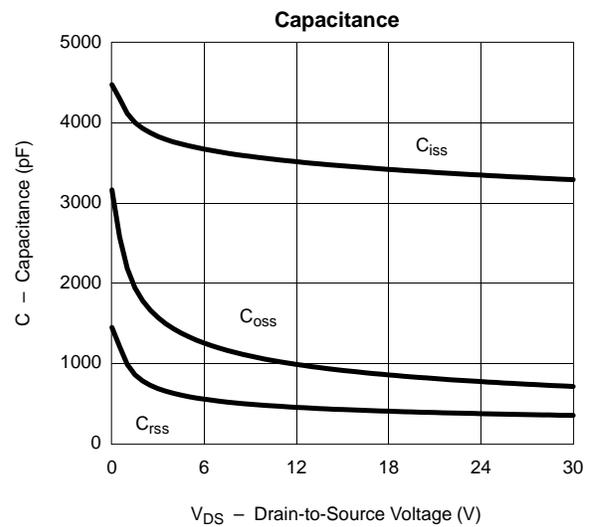
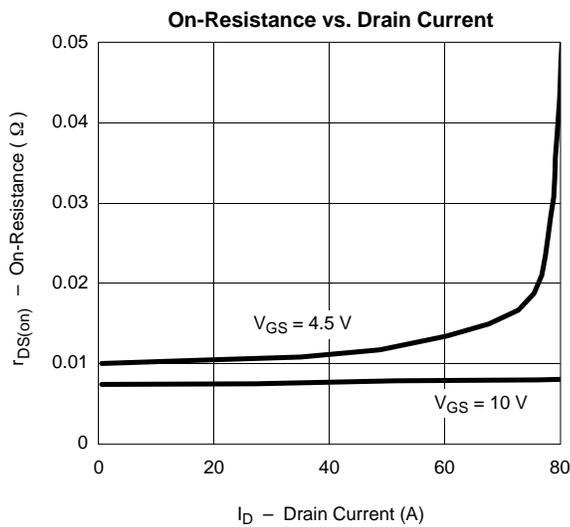
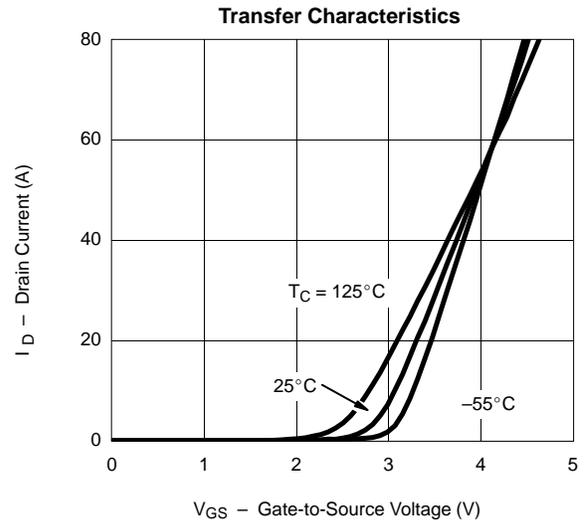
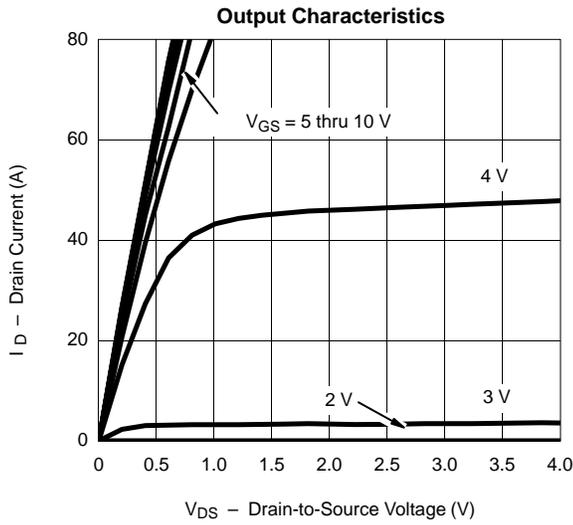
<b>SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)</b>						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	1.0			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 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> = 55 °C			5	
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
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 12.0 A		0.008	0.010	Ω
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 9.9 A		0.011	0.015	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 12.0 A		40		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = 2.3 A, V <sub>GS</sub> = 0 V		0.7	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> = 5.0 V, I <sub>D</sub> = 12.0 A		31	47	nC
Gate-Source Charge	Q <sub>gs</sub>			15		
Gate-Drain Charge	Q <sub>gd</sub>			10		
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		20	40	ns
Rise Time	t <sub>r</sub>			20	40	
Turn-Off Delay Time	t <sub>d(off)</sub>			75	150	
Fall Time	t <sub>f</sub>			45	90	
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 2.3 A, di/dt = 100 A/μs		50	90	

Notes

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

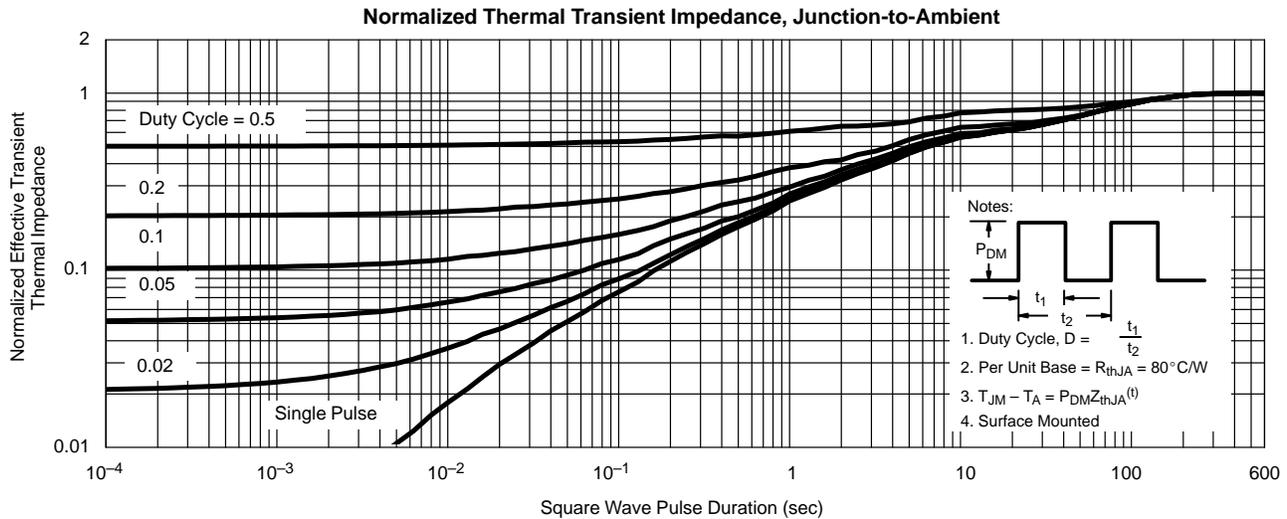
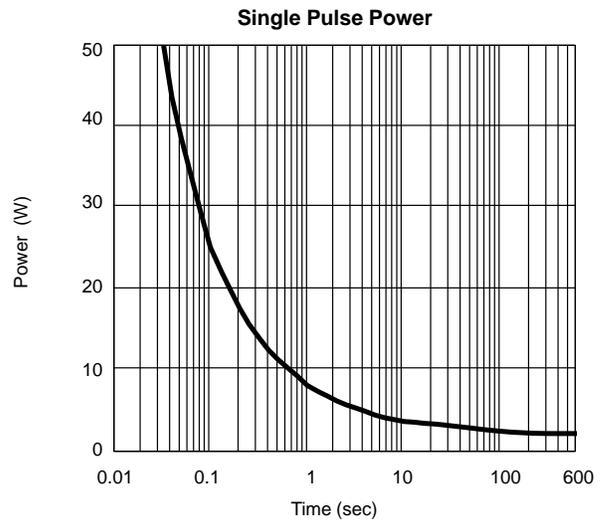
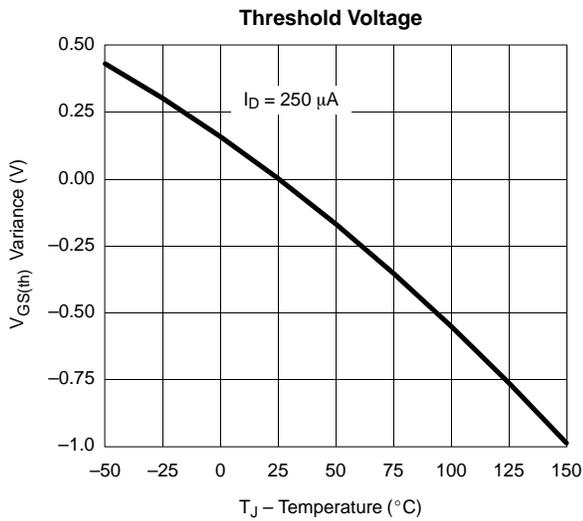
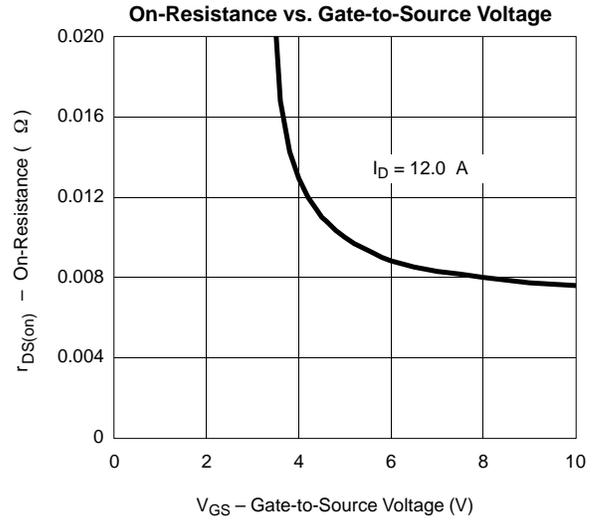
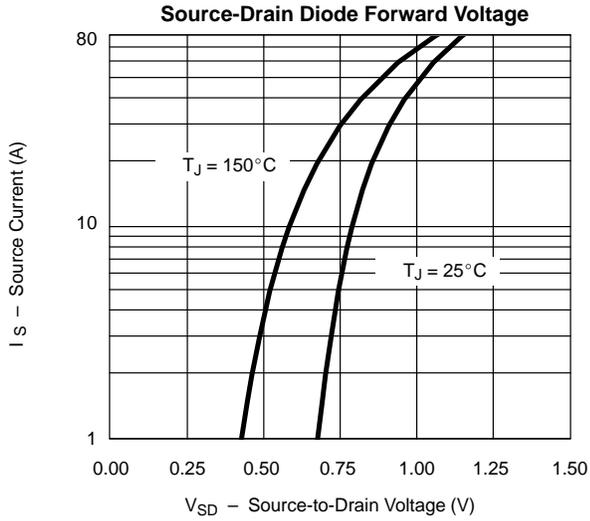


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**





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





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