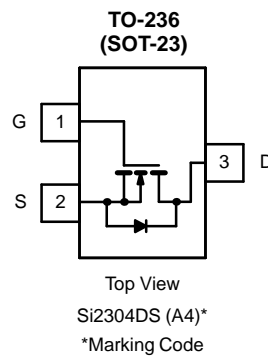




N-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.117 @ $V_{GS} = 10$ V	2.5
	0.190 @ $V_{GS} = 4.5$ V	2.0



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
Pulsed Drain Current ^b	I_{DM}	10	A
Continuous Source Current (Diode Conduction) ^a	I_S	1.25	
Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	W
		$T_A = 70^\circ\text{C}$	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	100	$^\circ\text{C/W}$
Maximum Junction-to-Ambient ^c		166	

Notes

- a. Surface Mounted on FR4 Board, $t \leq 5$ sec.
- b. Pulse width limited by maximum junction temperature.
- c. Surface Mounted on FR4 Board.

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



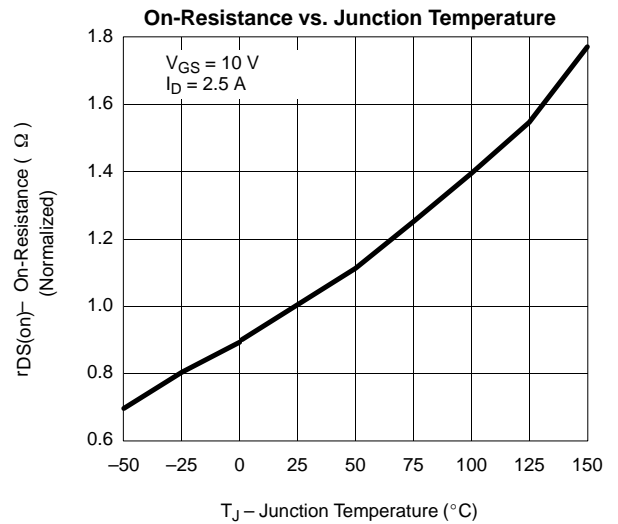
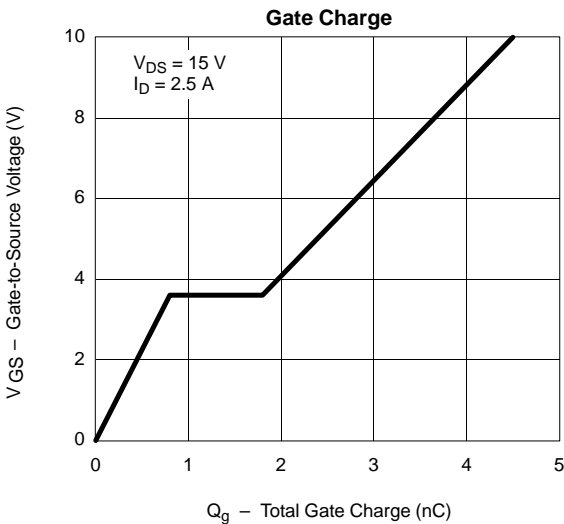
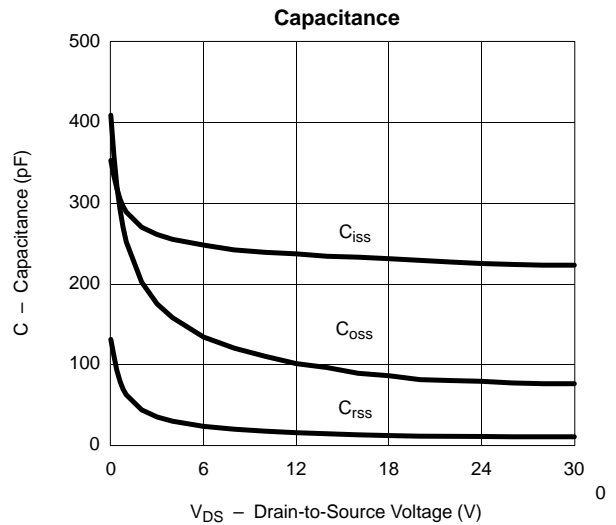
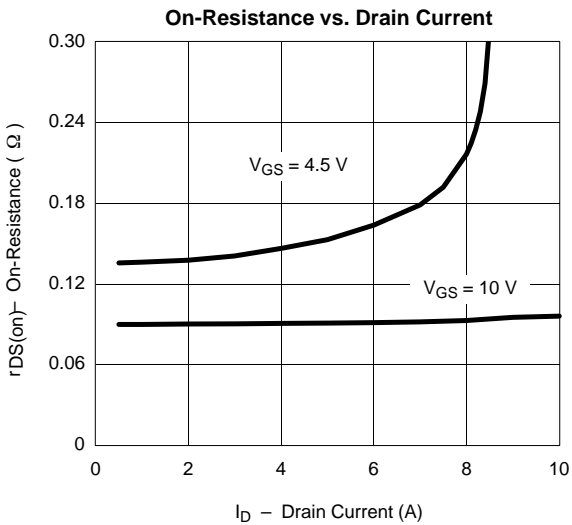
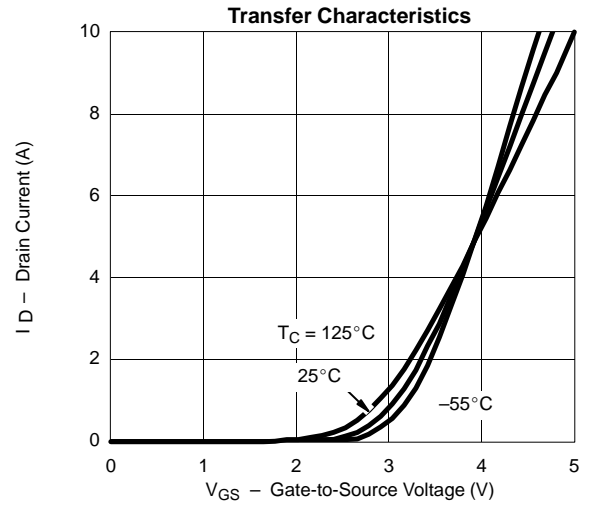
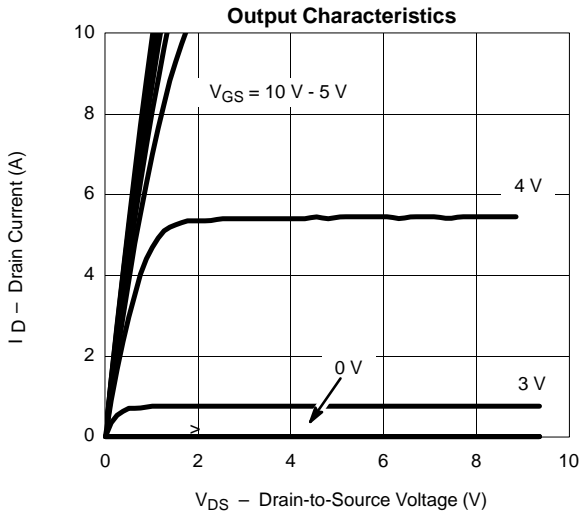
SPECIFICATIONS (T _A = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.5			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			0.5	μA
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55 °C			10	
		V _{DS} = 30 V, V _{GS} = 1.0 V, T _J = 25 °C			1	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 4.5 V, V _{GS} = 10 V	6			A
		V _{DS} ≥ 4.5 V, V _{GS} = 4.5 V	4			
Drain-Source On-Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 2.5 A		0.092	0.117	Ω
		V _{GS} = 4.5 V, I _D = 2.0 A		0.142	0.190	
Forward Transconductance ^a	g _{fs}	V _{DS} = 4.5 V, I _D = 2.5 A		4.6		S
Diode Forward Voltage	V _{SD}	I _S = 1.25 A, V _{GS} = 0 V		0.77	1.2	V
Dynamic						
Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 5 V, I _D = 2.5 A		2.4	4	nC
Total Gate Charge	Q _{gt}	V _{DS} = 15 V, V _{GS} = 10 V, I _D = 2.5 A		4.5	10	
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.0		
Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V, f = 1 MHz		240		pF
Output Capacitance	C _{oss}			110		
Reverse Transfer Capacitance	C _{rss}			17		
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω		8	20	ns
Rise Time	t _r			12	30	
Turn-Off Delay Time	t _{d(off)}			17	35	
Fall-Time	t _f			8	20	

Notes

a. Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.

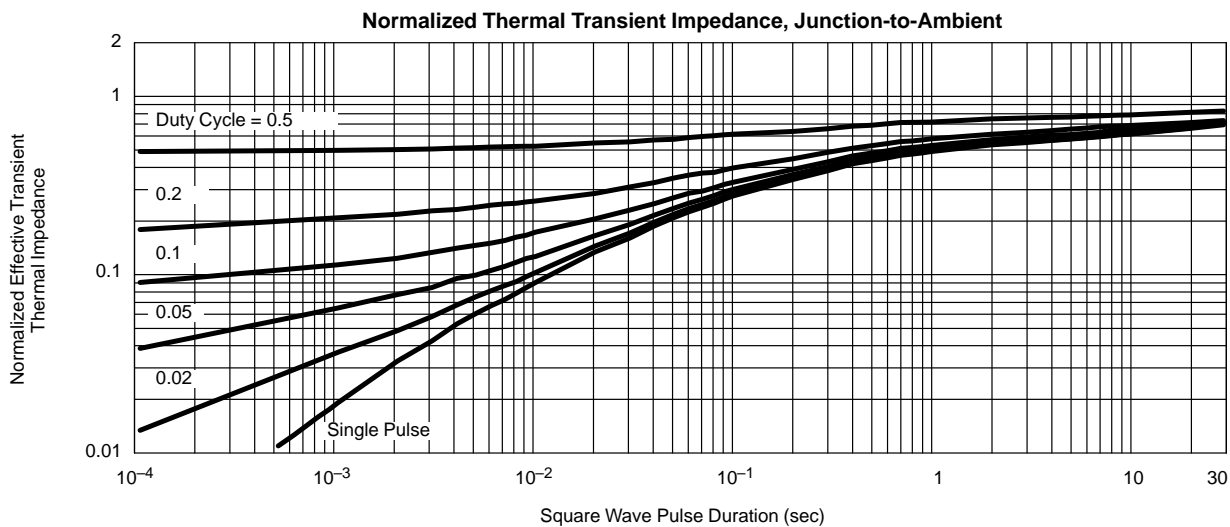
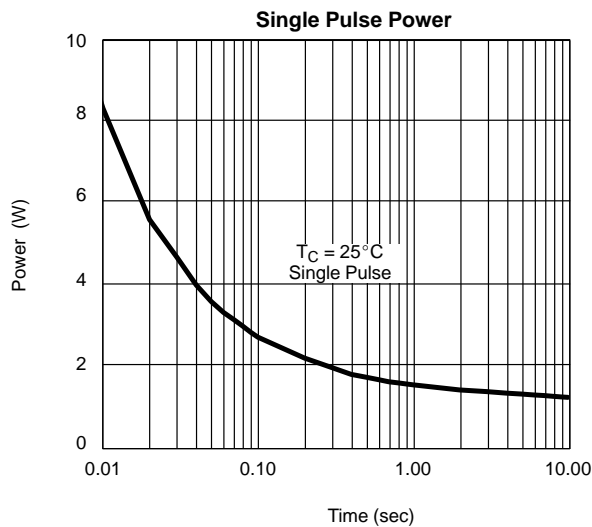
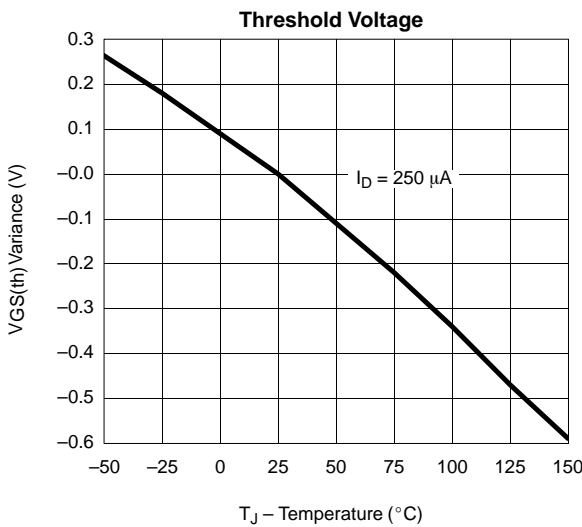
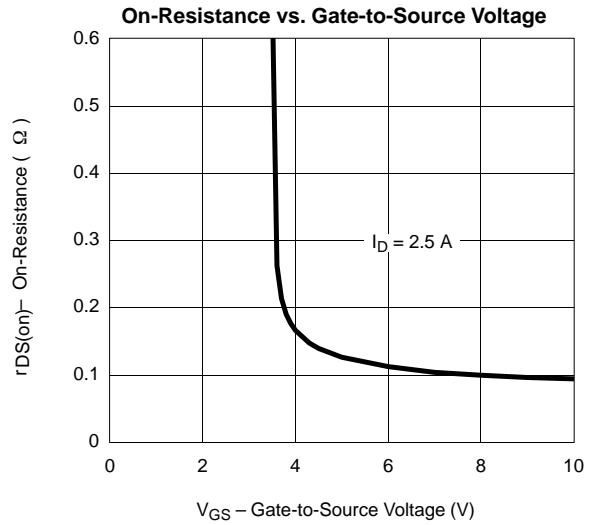
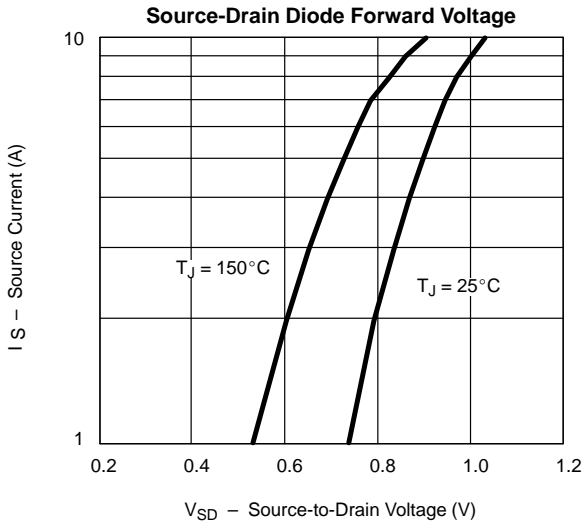


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





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