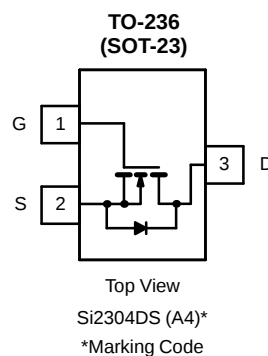




N-Channel 30-V (D-S) MOSFET

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	$T_A = 25^\circ\text{C}$	I_D	2.5	A
	$T_A = 70^\circ\text{C}$		2.0	
Pulsed Drain Current ^b		I_{DM}	10	
Continuous Source Current (Diode Conduction) ^a		I_S	1.25	W
Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	1.25	
	$T_A = 70^\circ\text{C}$		0.80	
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

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

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

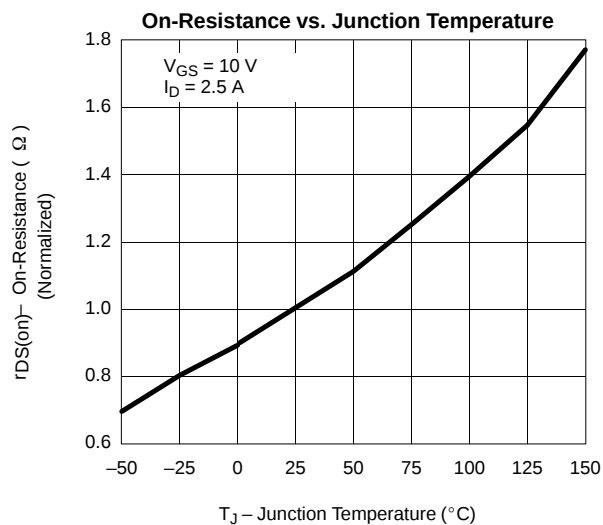
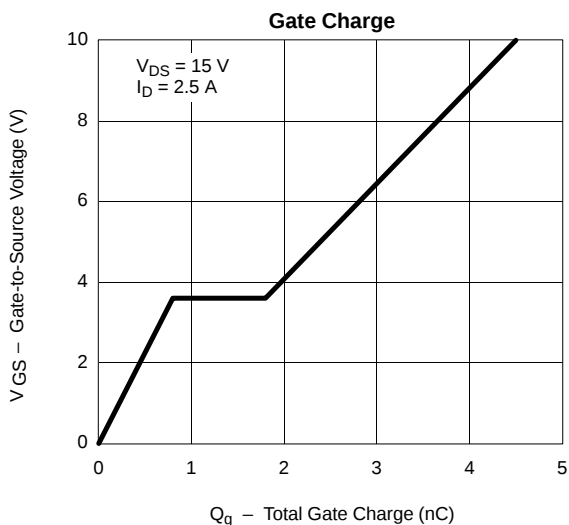
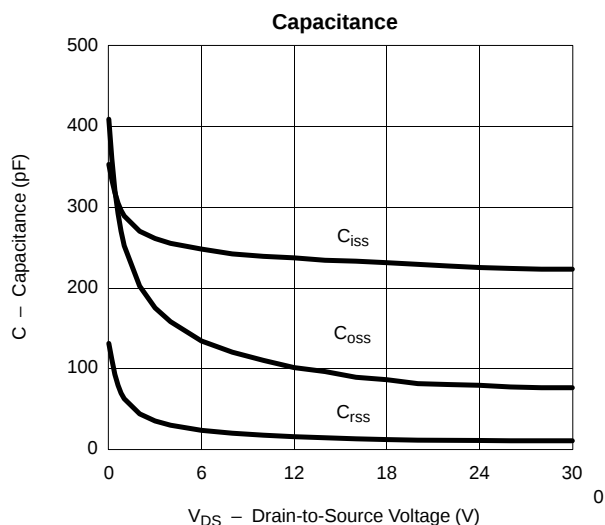
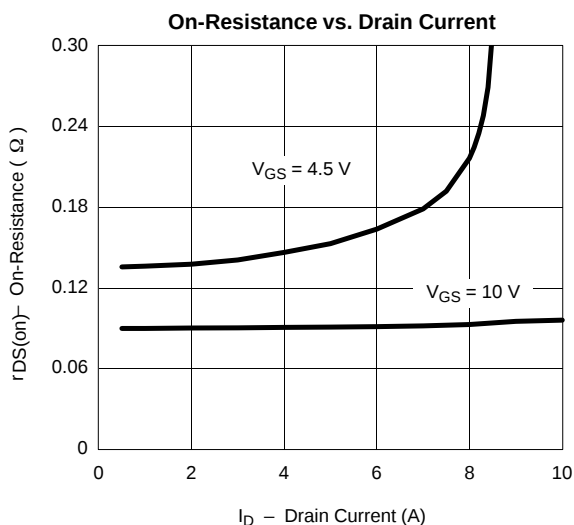
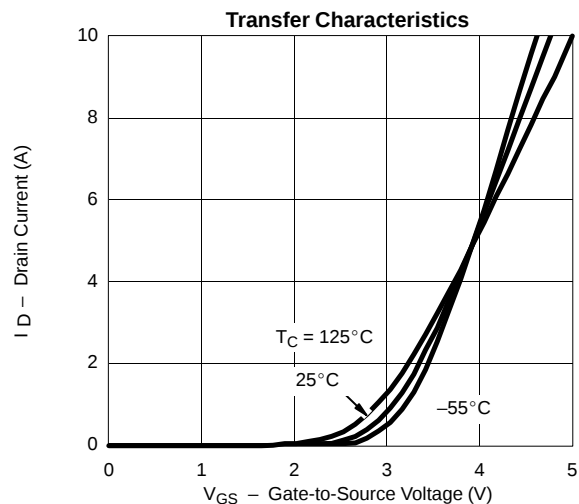
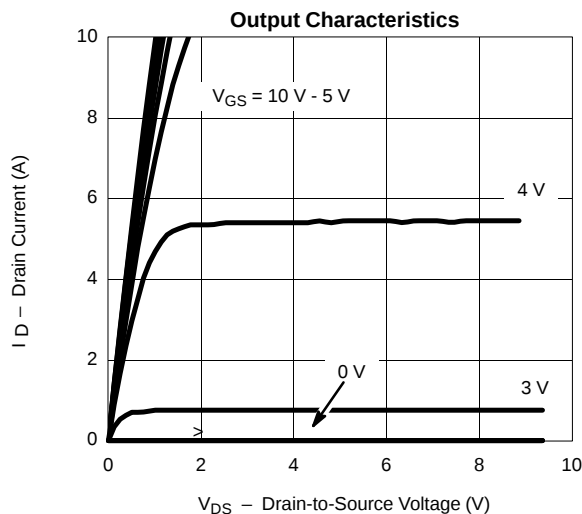
SPECIFICATIONS (T _A = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.5			
Gate-Body 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

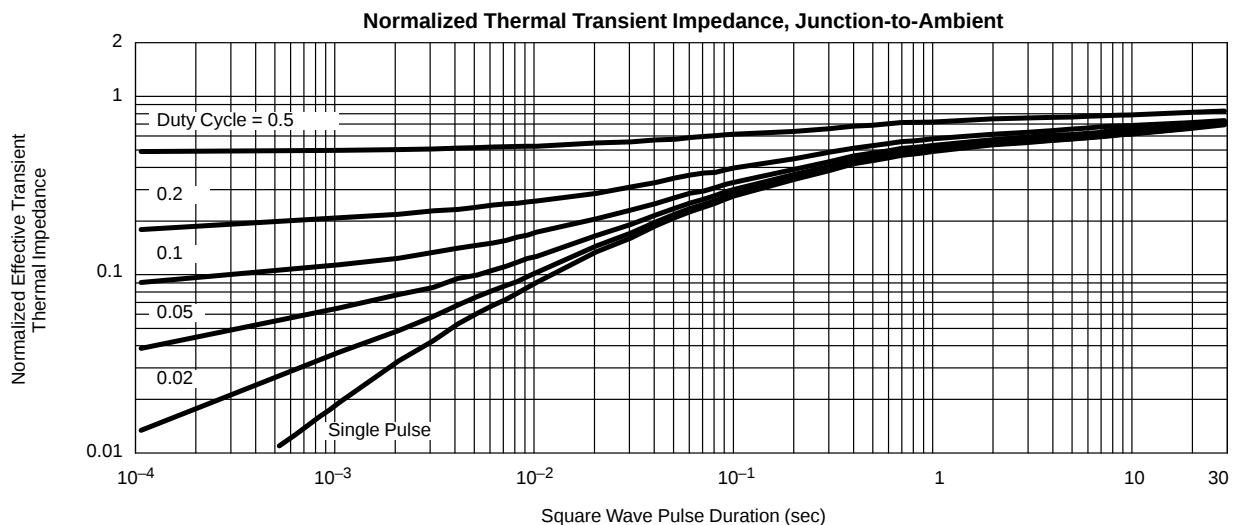
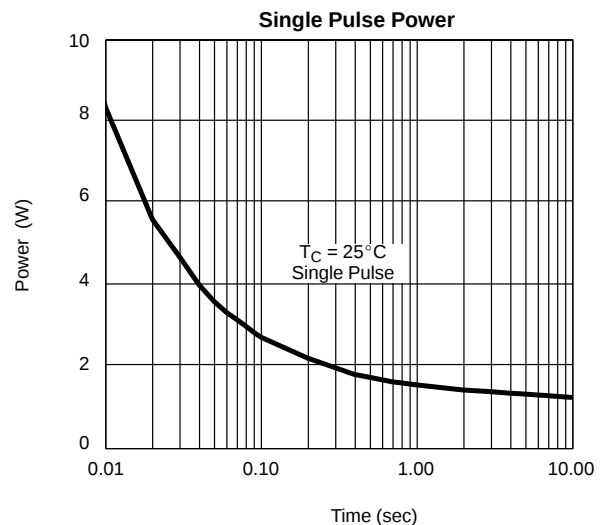
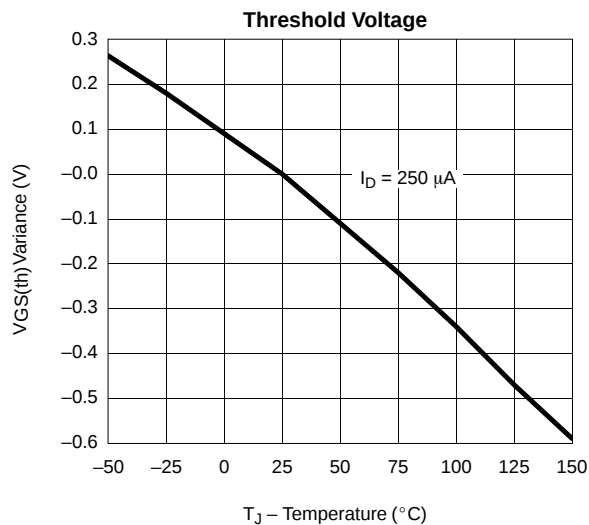
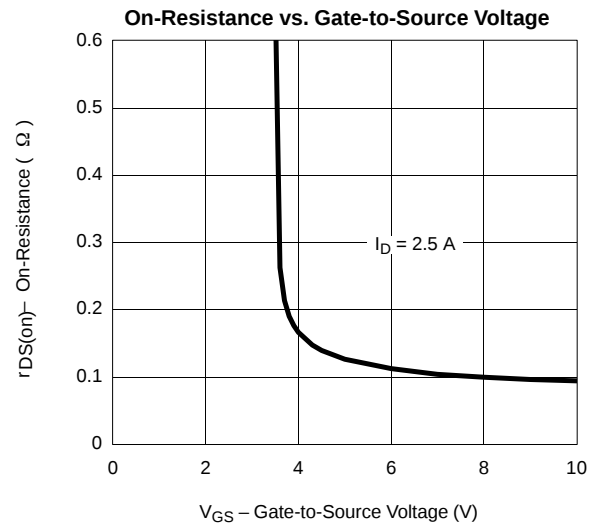
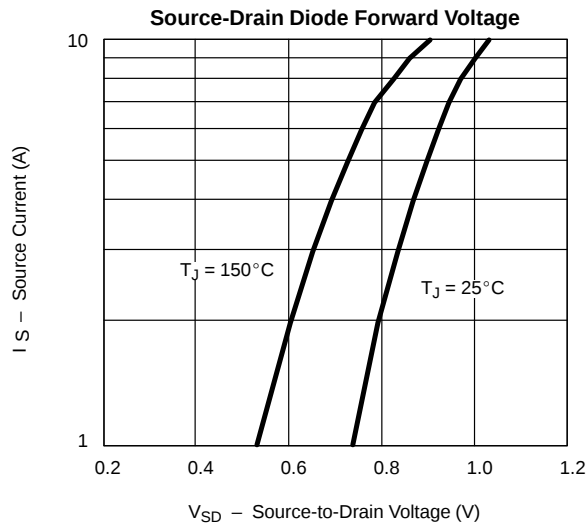
a. Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





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