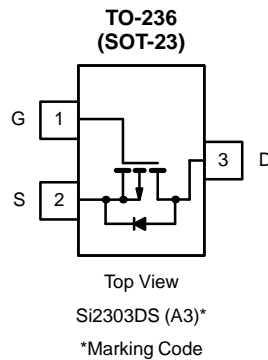




P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.240 @ $V_{GS} = -10$ V	-1.7
	0.460 @ $V_{GS} = -4.5$ V	-1.3



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 ($T_J = 150^\circ\text{C}$) (surface mounted on FR4 board, $t \leq 5$ sec)	I_D	$T_A = 25^\circ\text{C}$	-1.7
		$T_A = 70^\circ\text{C}$	-1.4
Pulsed Drain Current ^a	I_{DM}	-10	A
Continuous Source Current (MOSFET Diode Conduction) (surface mounted on FR4 board, $t \leq 5$ sec)	I_S	-1.25	
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	1.25
		$T_A = 70^\circ\text{C}$	0.8
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Typical	Unit
Maximum Junction-to-Ambient (surface mounted on FR4 board, $t \leq 5$ sec)	R_{thJA}	100	$^\circ\text{C/W}$
Maximum Junction-to-Ambient (surface mounted on FR4 board)		166	

Notes

a. Pulse width limited by maximum junction temperature.

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



MOSFET SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -10 μA	-30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-1.0			
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			-1	μA
		V _{DS} = -30 V, V _{GS} = 0 V, T _J = 55 °C			-10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ -5 V, V _{GS} = -10 V	-6			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -10 V, I _D = -1.7 A		0.190	0.240	Ω
		V _{GS} = -4.5 V, I _D = -1.3 A		0.240	0.460	
Forward Transconductance ^a	g _{fs}	V _{DS} = -10 V, I _D = -1.7 A		2.4		S
Diode Forward Voltage	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} = -15 V, V _{GS} = -10 V, I _D = -1.7 A		5.8	10	nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.5		
Input Capacitance	C _{iss}	V _{DS} = -15 V, V _{GS} = 0 V, f = 1 MHz		226		pF
Output Capacitance	C _{oss}			87		
Reverse Transfer Capacitance	C _{rss}			19		
Switching^b						
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		9	20	ns
Rise Time	t _r			9	20	
Turn-Off Delay Time	t _{d(off)}			18	35	
Fall Time	t _f			6	20	

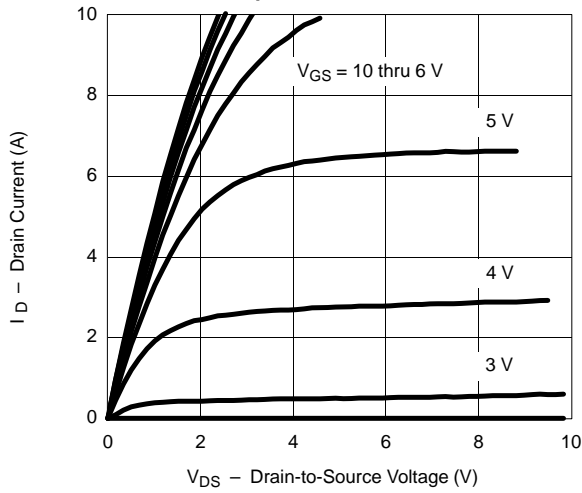
Notes

- a. Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.
- b. For DESIGN AID ONLY, not subject to production testing.
- c. Switching time is essentially independent of operating temperature.

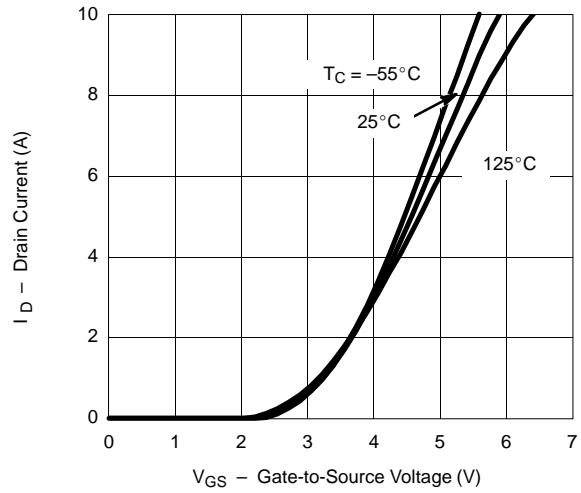


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

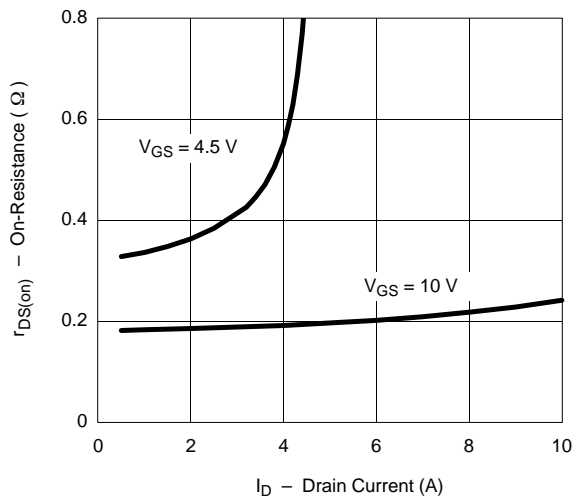
Output Characteristics



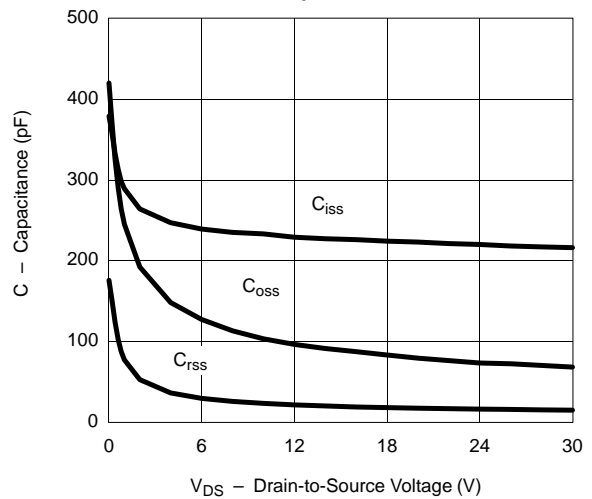
Transfer Characteristics



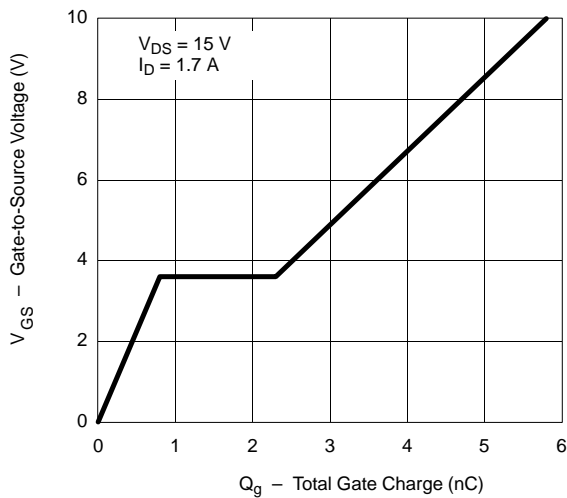
On-Resistance vs. Drain Current



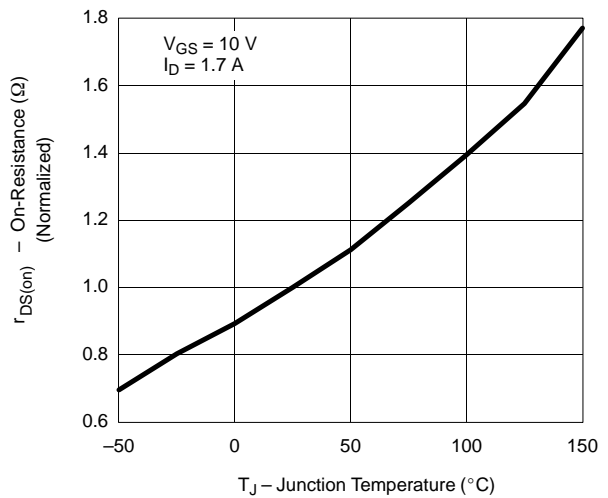
Capacitance



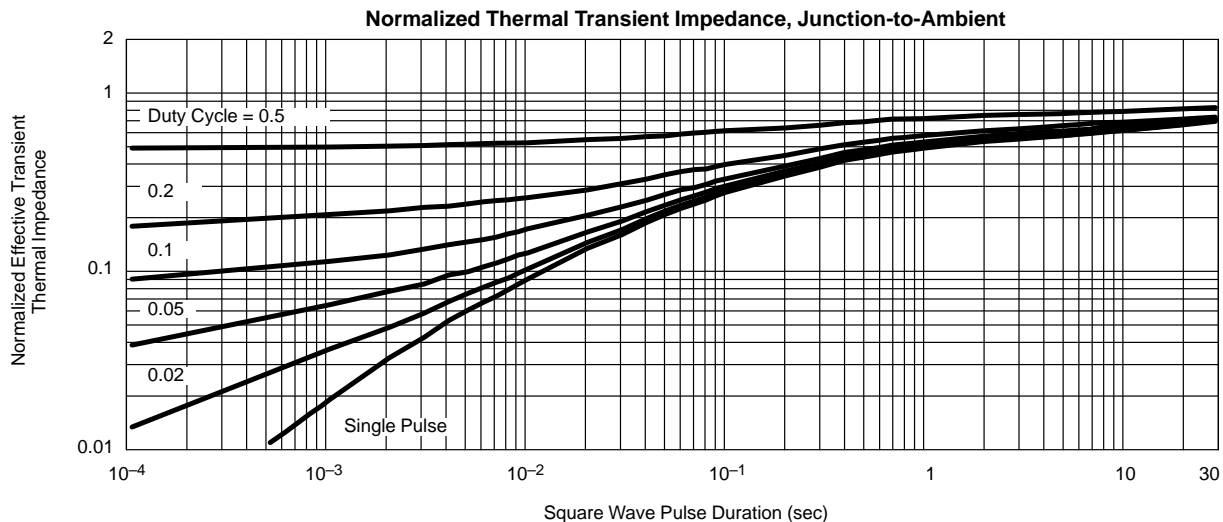
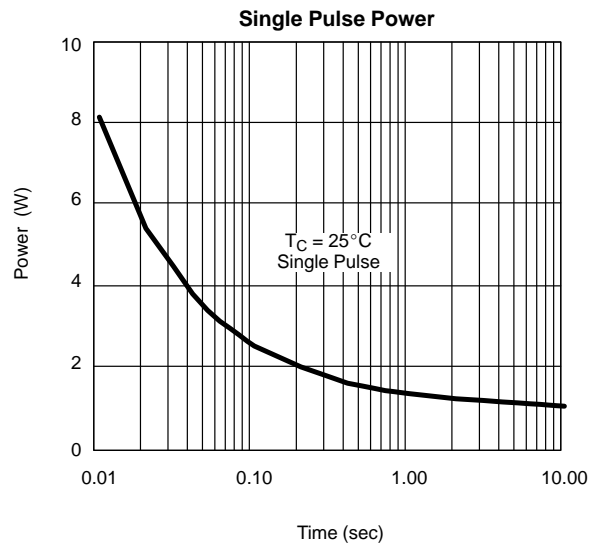
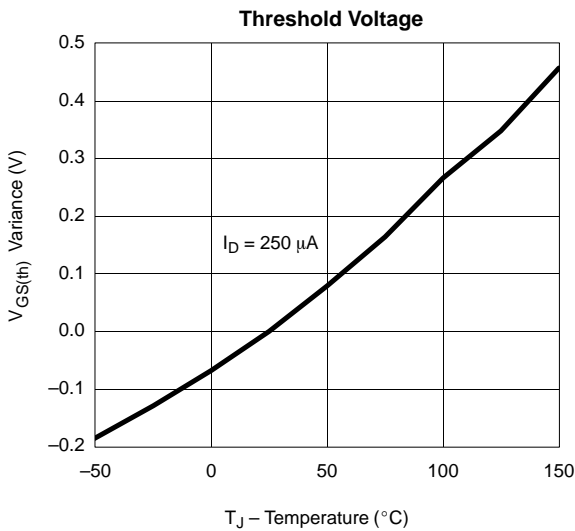
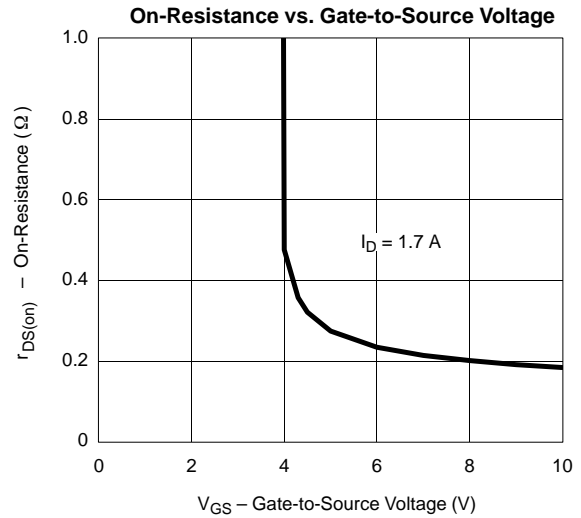
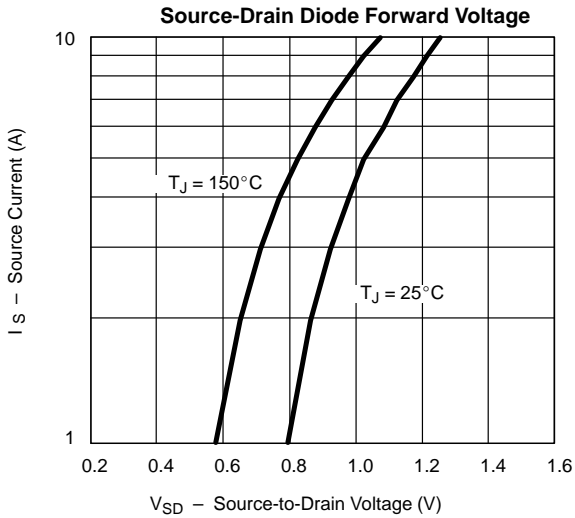
Gate Charge



On-Resistance vs. Junction Temperature



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) MOSFET





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