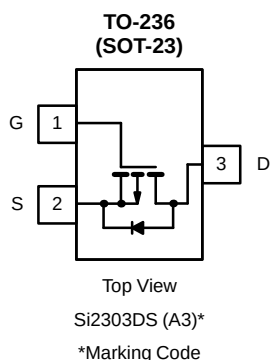




P-Channel 30-V (D-S) MOSFET

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	A
		$T_A = 70^\circ\text{C}$ -1.4	
Pulsed Drain Current ^a	I_{DM}	-10	
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	W
		$T_A = 70^\circ\text{C}$ 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>

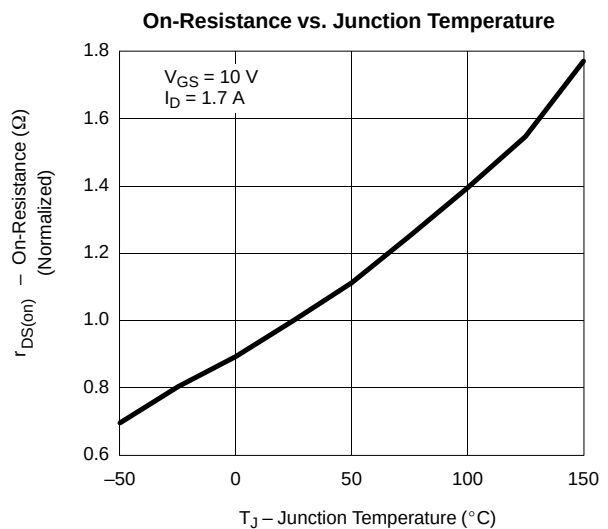
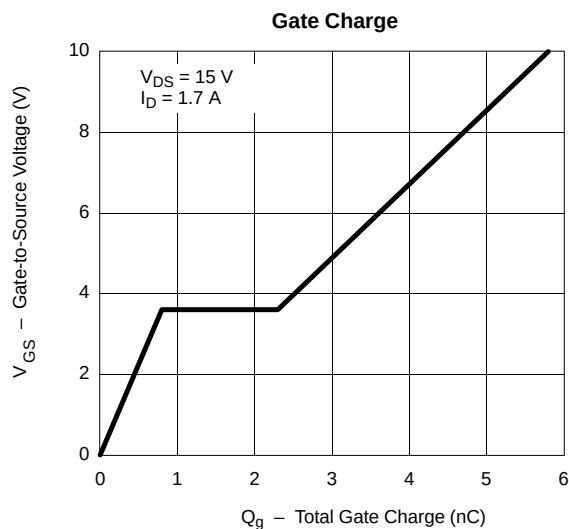
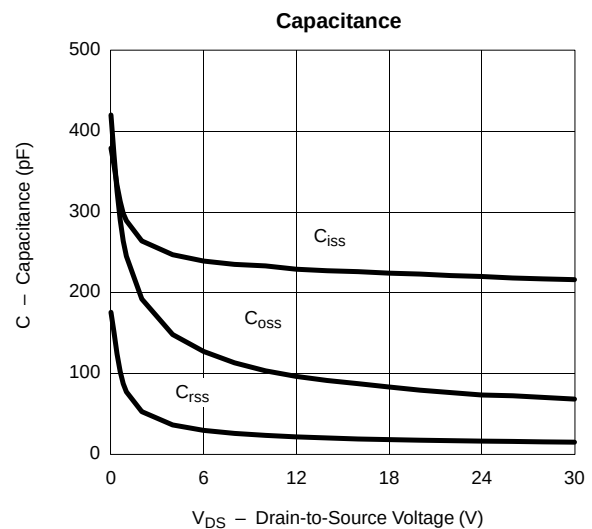
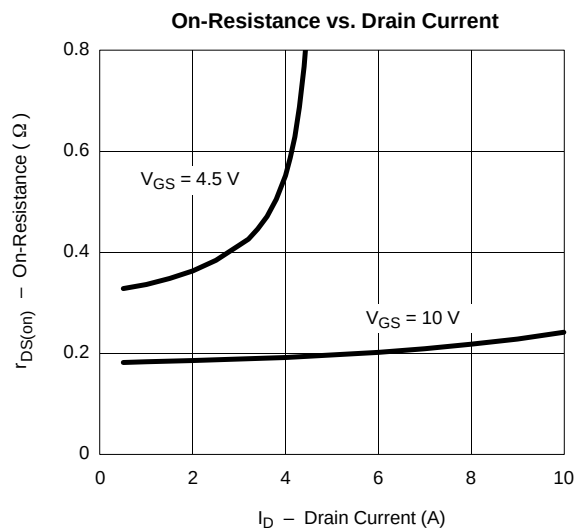
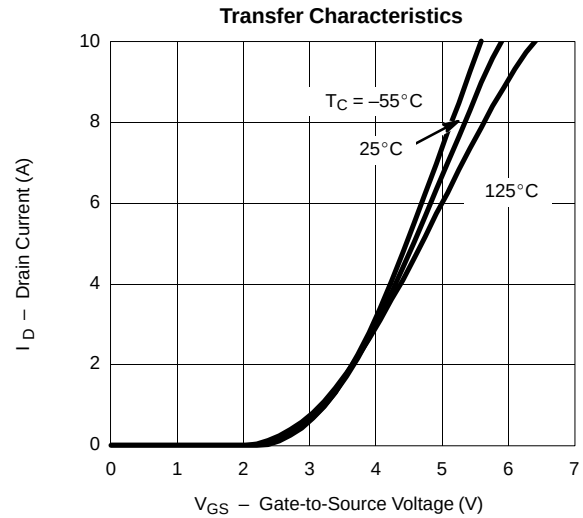
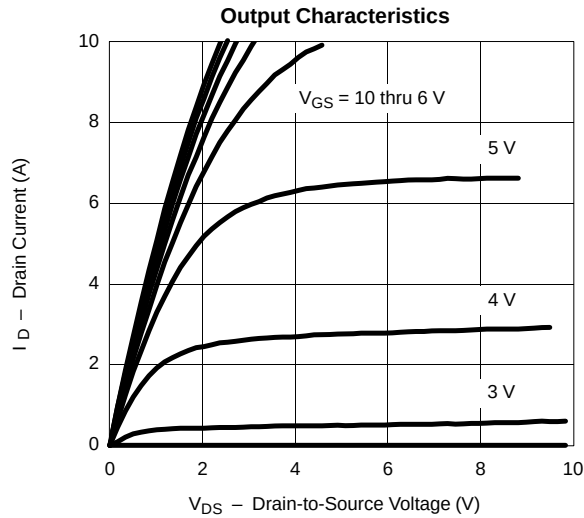
MOSFET SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = −10 μA	−30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = −250 μA	−1.0			
Gate-Body Leakage	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

- Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.
- For DESIGN AID ONLY, not subject to production testing.
- Switching time is essentially independent of operating temperature.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

MOSFET

