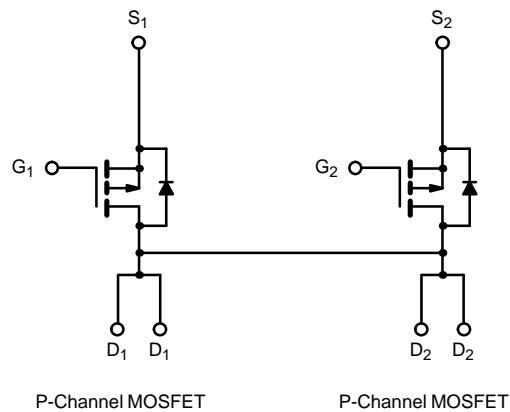
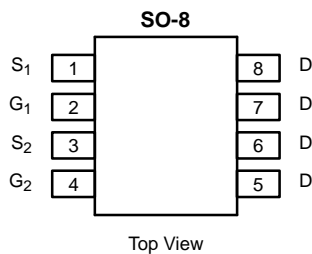




P-Channel 30-V (D-S) Battery Switch

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.028 @ $V_{GS} = -10$ V	± 7.4
	0.045 @ $V_{GS} = -4.5$ V	± 5.8

TrenchFET[®]
Power MOSFETs



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, b}	$T_A = 25^\circ\text{C}$	I_D	± 7.4	A
	$T_A = 70^\circ\text{C}$		± 5.8	
Pulsed Drain Current		I_{DM}	± 40	
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	-2.1	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	2.5	W
	$T_A = 70^\circ\text{C}$		1.6	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t = \leq 10$ sec	R_{thJA}		50	$^\circ\text{C/W}$
	Steady State		75		

Notes

a. Surface Mounted on FR4 Board.

b. $t = \leq 10$ sec.

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



SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-1			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -24 V, V _{GS} = 0 V, T _J = 55 °C			-25	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ -5 V, V _{GS} = -10 V	-30			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = -10 V, I _D = -7.4 A		0.022	0.028	Ω
		V _{GS} = -4.5 V, I _D = -5.8 A		0.034	0.045	
Forward Transconductance ^a	g _{fs}	V _{DS} = -15 V, I _D = -7.4 A		15		S
Diode Forward Voltage ^a	V _{SD}	I _S = -2.1 A, V _{GS} = 0 V		-0.73	-1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = -15 V, V _{GS} = -10 V, I _D = -7.4 A		38	60	nC
Gate-Source Charge	Q _{gs}			8		
Gate-Drain Charge	Q _{gd}			6.8		
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		13	25	ns
Rise Time	t _r			9	20	
Turn-Off Delay Time	t _{d(off)}			75	120	
Fall Time	t _f			42	70	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = -2.1 A, di/dt = 100 A/μs		50	90	

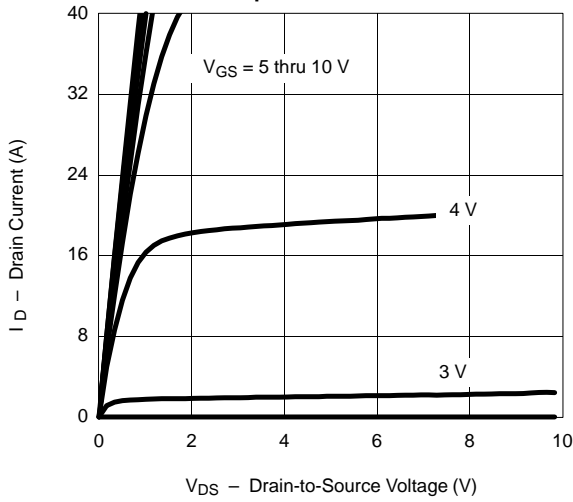
Notes

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

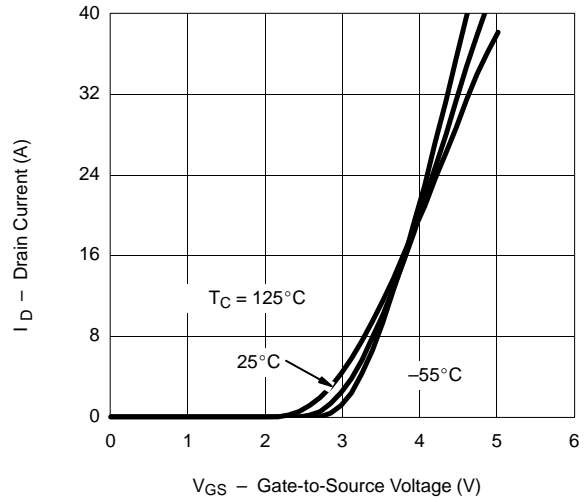


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

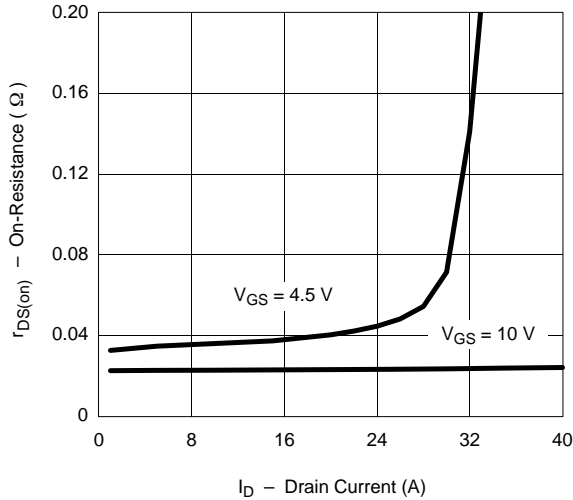
Output Characteristics



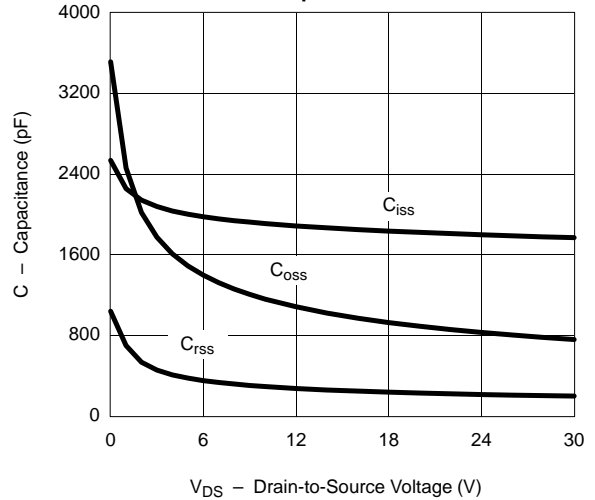
Transfer Characteristics



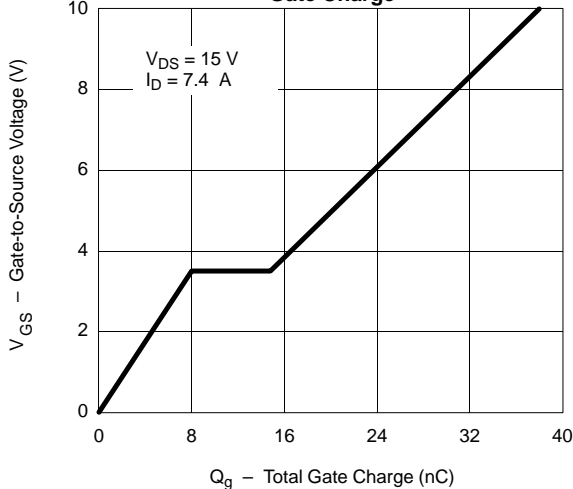
On-Resistance vs. Drain Current



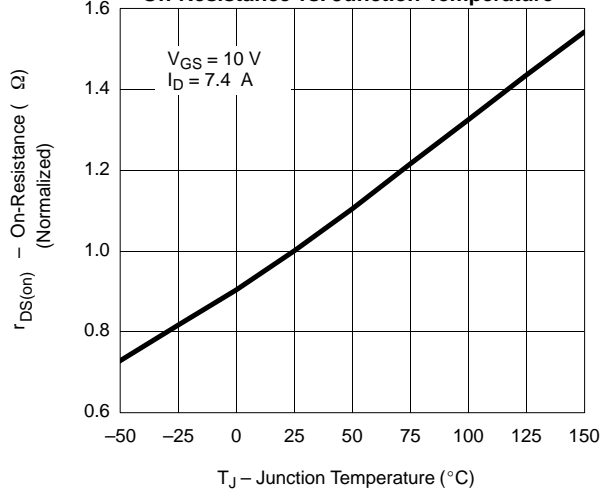
Capacitance



Gate Charge



On-Resistance vs. Junction Temperature





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

