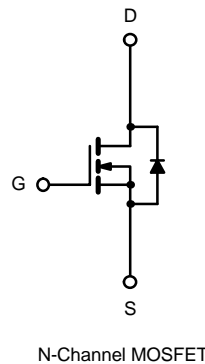
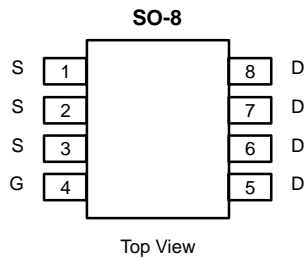




N-Channel Reduced Q_g , Fast Switching MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.008 @ $V_{GS} = 10$ V	16
	0.011 @ $V_{GS} = 4.5$ V	15



FEATURES

- TrenchFET® Power MOSFETS
- PWM Optimized for High Efficiency
- 100% R_G Tested

APPLICATIONS

- Buck Converter
 - High Side
 - Low Side
- Synchronous Rectifier
 - Secondary Rectifier

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter	Symbol	10 secs	Steady State	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	$T_A = 25^\circ\text{C}$	16	11	A
		$T_A = 70^\circ\text{C}$	13	8	
Pulsed Drain Current	I_{DM}	± 50			
Continuous Source Current (Diode Conduction) ^a	I_S	3.0	1.40		
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	3.5	1.6	W
		$T_A = 70^\circ\text{C}$	2.2	1.0	
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 (MOSFET) ^a	R_{thJA}	$t \leq 10$ sec	29	35	$^\circ\text{C/W}$
		Steady State	67	80	
Maximum Junction-to-Foot (Drain)	R_{thJF}	13	16		

Notes

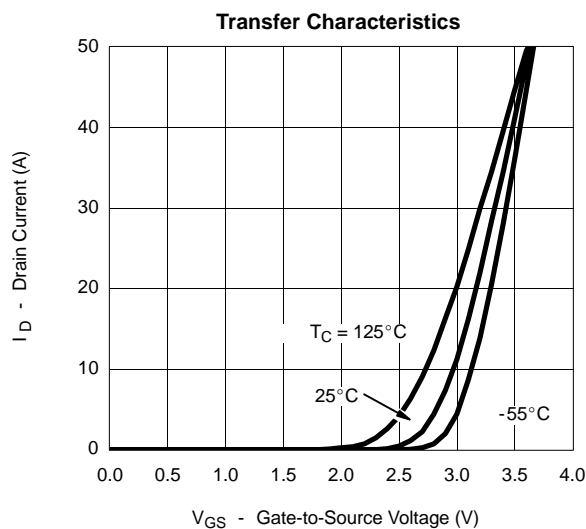
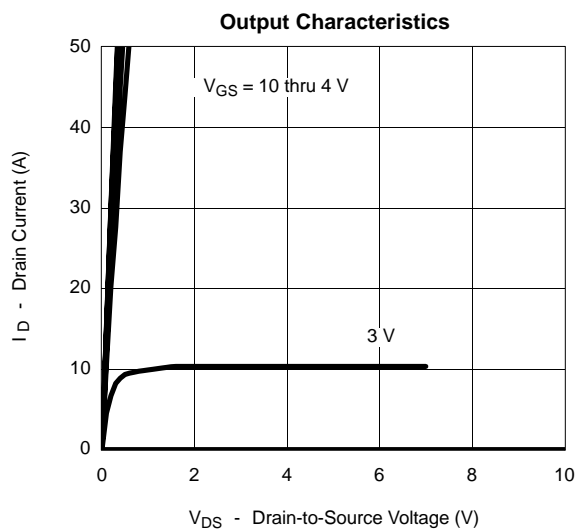
a. Surface Mounted on 1" x 1" FR4 Board.

MOSFET 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	1.0			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 = 70 °C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	40			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 16		0.0066	0.008	Ω
		V _{GS} = 4.5 V, I _D = 15		0.0090	0.011	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 16		60		S
Diode Forward Voltage ^a	V _{SD}	I _S = 3 A, V _{GS} = 0 V		0.70	1.1	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 4.5 V, I _D = 16 A		13	18	nC
Gate-Source Charge	Q _{gs}			5		
Gate-Drain Charge	Q _{gd}			4.0		
Gate-Resistance	R _G		1.0	1.7	2.9	Ω
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		18	27	ns
Rise Time	t _r			12	18	
Turn-Off Delay Time	t _{d(off)}			46	70	
Fall Time	t _f			19	30	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 3 A, di/dt = 100 A/μs		40	70	

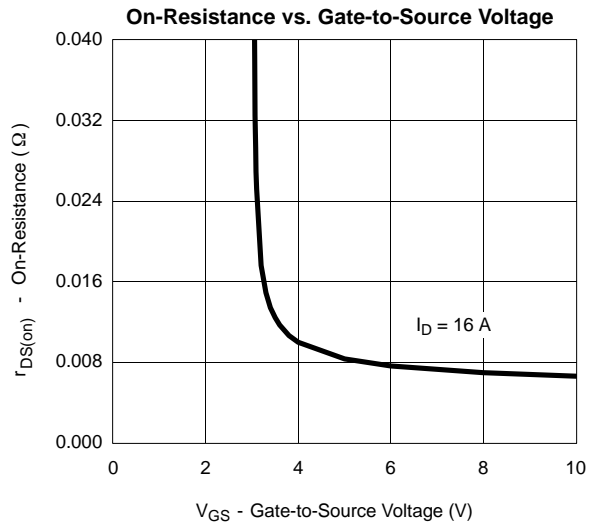
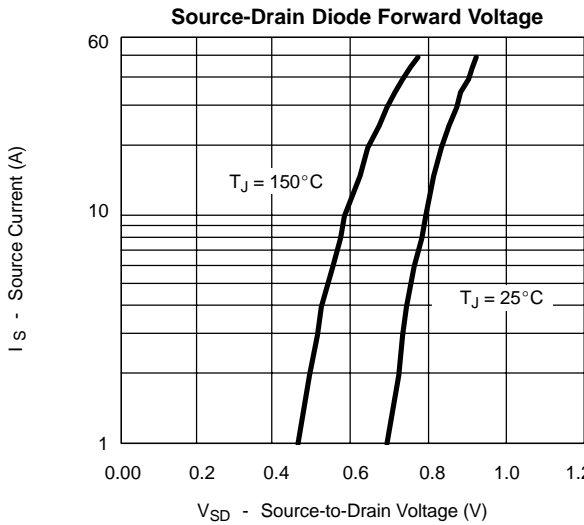
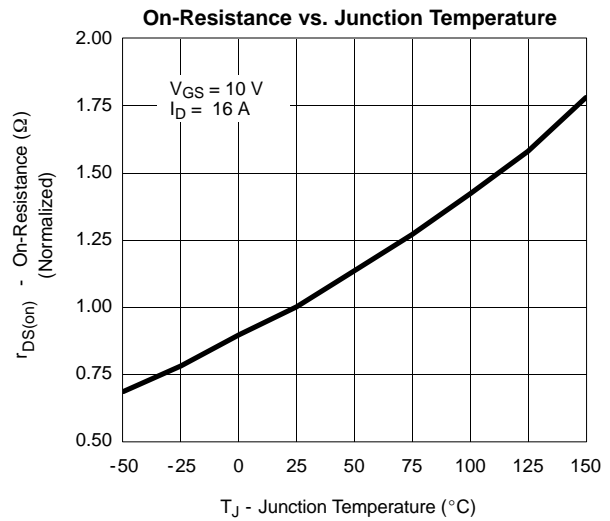
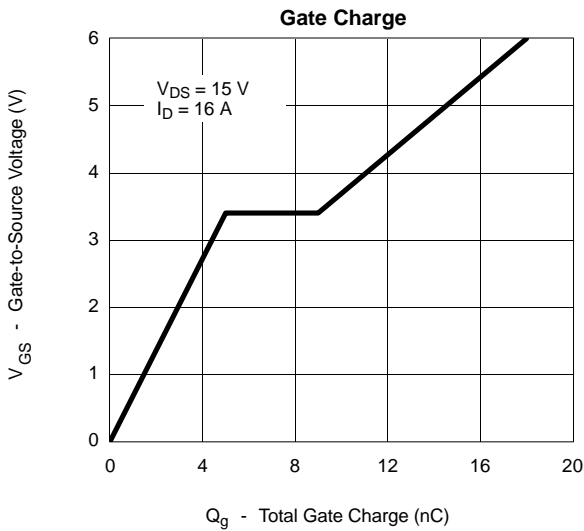
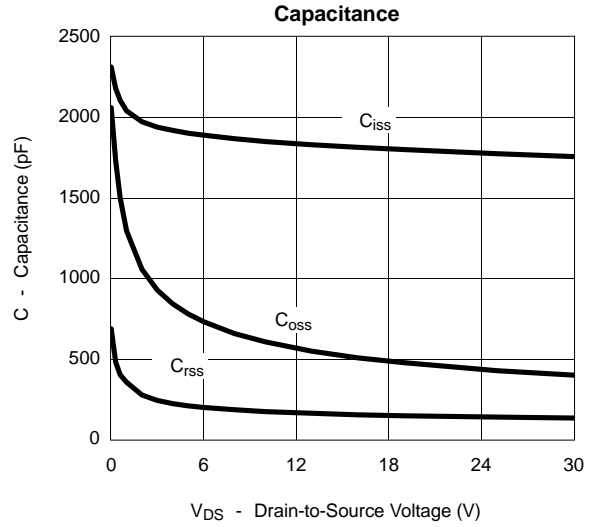
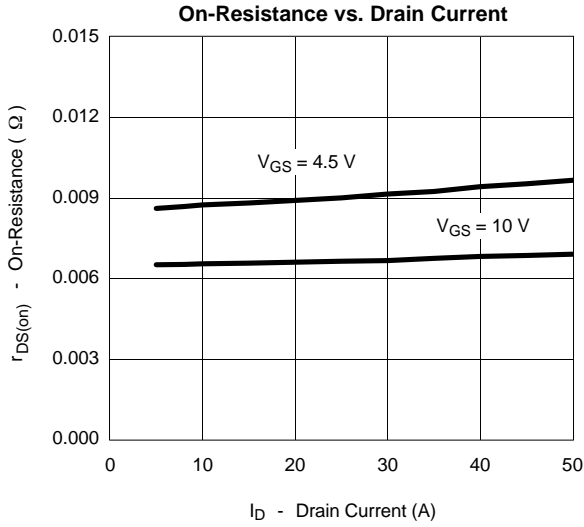
Notes

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

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

