



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

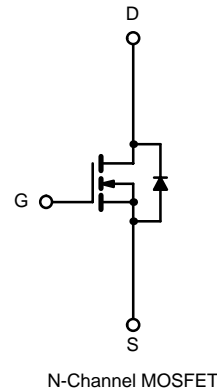
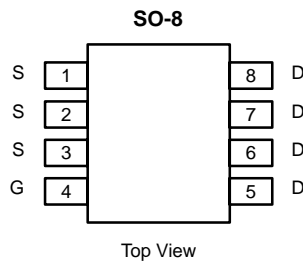
PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
30	0.00525 @ V _{GS} = 10 V	20
	0.007 @ V _{GS} = 4.5 V	17

FEATURES

- TrenchFET® Power MOSFET
- Optimized for "Low Side" Synchronous Rectifier Operation
- 100% R_G Tested

APPLICATIONS

- DC/DC Converters
- Synchronous Rectifiers



ABSOLUTE MAXIMUM RATINGS (T _A = 25°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°C) ^a	T _A = 25°C	I _D	20	13	A
	T _A = 70°C		15	10	
Pulsed Drain Current (10 μs Pulse Width)		I _{DM}	60		
Continuous Source Current (Diode Conduction) ^a		I _S	2.9	1.3	W
Maximum Power Dissipation ^a	T _A = 25°C	P _D	3.5	1.6	
	T _A = 70°C		2.2	1	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	t ≤ 10 sec	R _{thJA}	29	35	°C/W
	Steady State		67	80	
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	13	16	

Notes

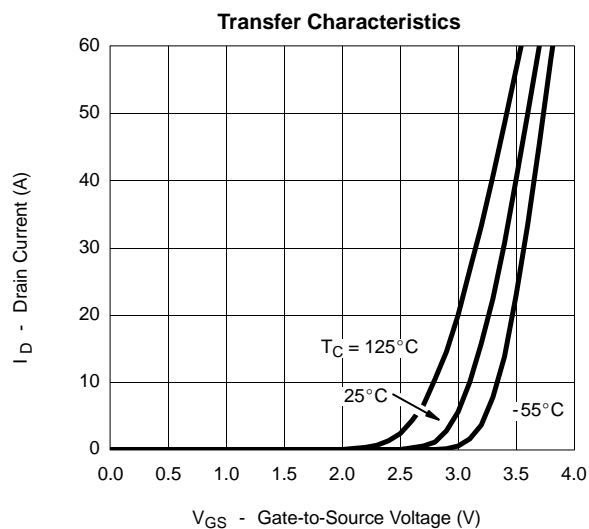
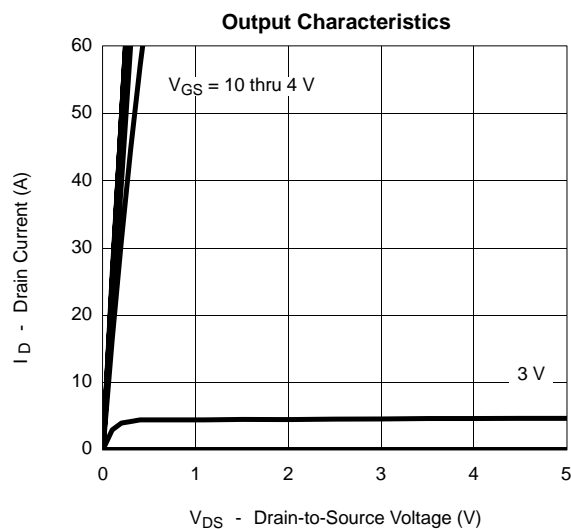
a. Surface Mounted on 1" x 1" FR4 Board.

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 = 55 °C			5	
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 = 20 A		0.0040	0.00525	Ω
		V _{GS} = 4.5 V, I _D = 19 A		0.0055	0.007	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 20 A		90		S
Diode Forward Voltage ^a	V _{SD}	I _S = 2.9 A, V _{GS} = 0 V		0.75	1.1	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 4.5 V, I _D = 20 A		30.5	40	nC
Gate-Source Charge	Q _{gs}			13.5		
Gate-Drain Charge	Q _{gd}			9.5		
Gate Resistance	R _G		0.5	1.4	2.4	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		21	35	ns
Rise Time	t _r			10	20	
Turn-Off Delay Time	t _{d(off)}			83	130	
Fall Time	t _f			27	45	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2.9 A, di/dt = 100 A/μs		50	80	

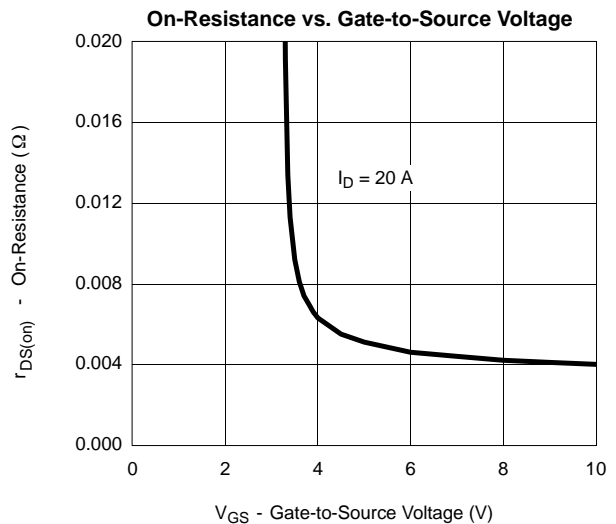
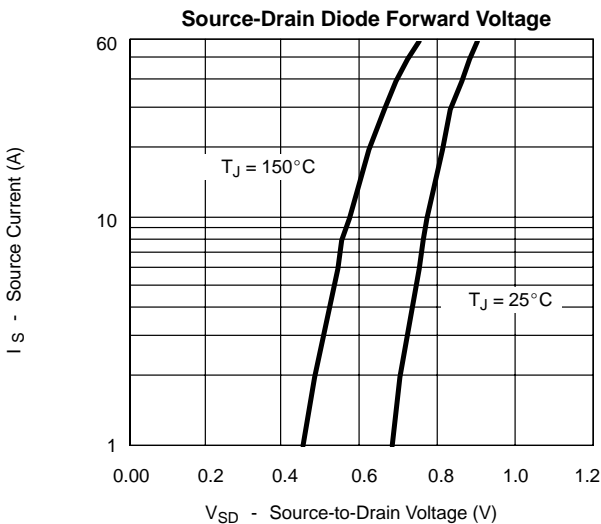
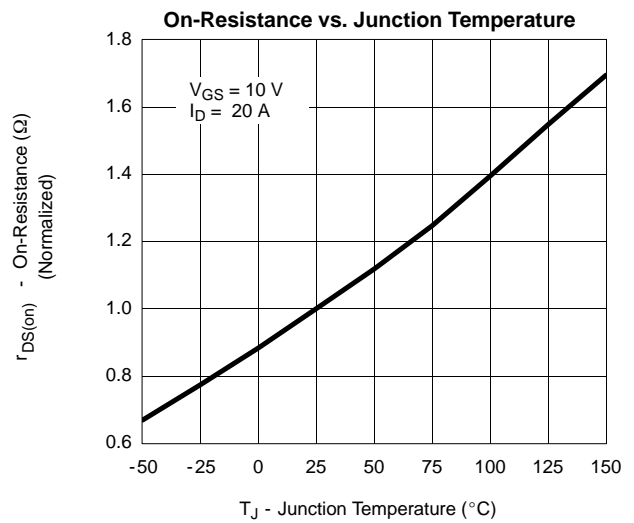
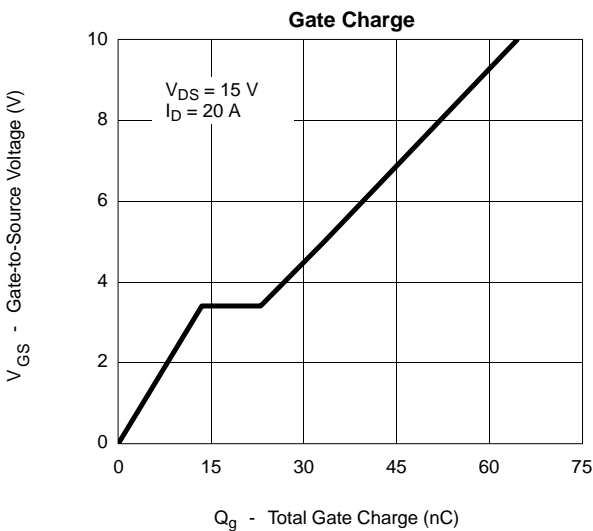
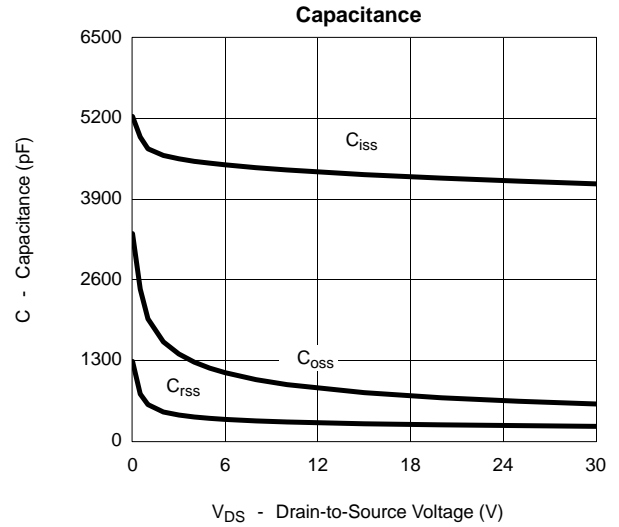
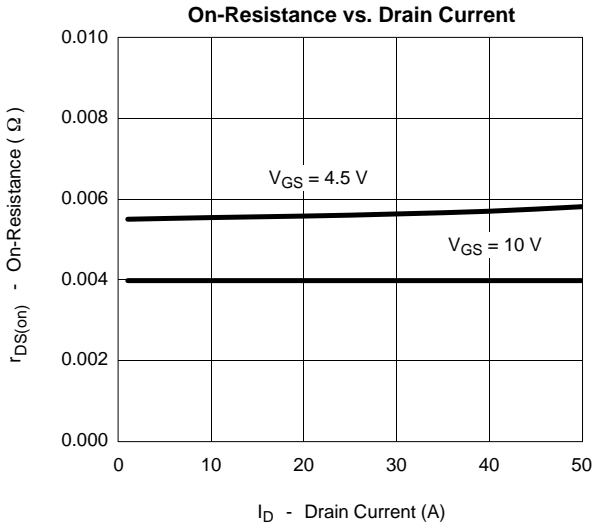
Notes

- 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)

