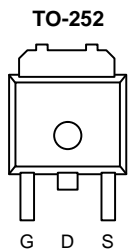




N-Channel 30-V (D-S), 175°C MOSFET

175°C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETs

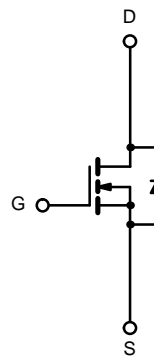
PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
30	0.030 @ V _{GS} = 10 V	±30
	0.045 @ V _{GS} = 4.5 V	±25



Top View

Order Number:
SUD30N03-30

Drain Connected to Tab



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _C = 25°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 = 175°C)	I _D	T _C = 25°C	±30
		T _C = 100°C	±21
Pulsed Drain Current	I _{DM}	±40	A
Continuous Source Current (Diode Conduction)	I _S	30	
Maximum Power Dissipation	P _D	T _C = 25°C	50
		T _A = 25°C	3 ^a
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient	R _{thJA}	50	°C/W
Maximum Junction-to-Case	R _{thJC}	3.0	

Notes

a. Surface Mounted on 4" x 4" FR4 Board.

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



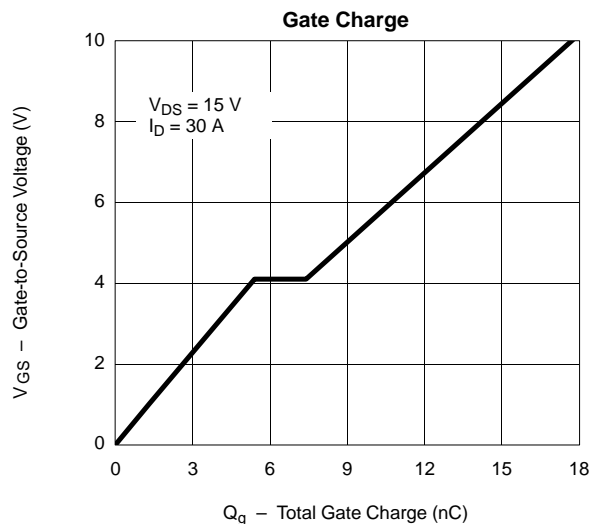
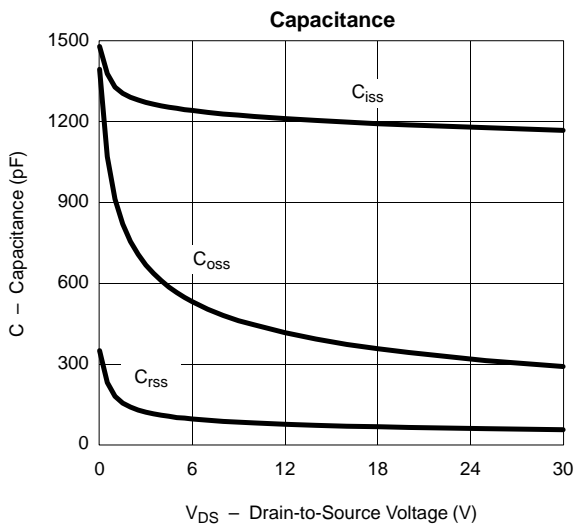
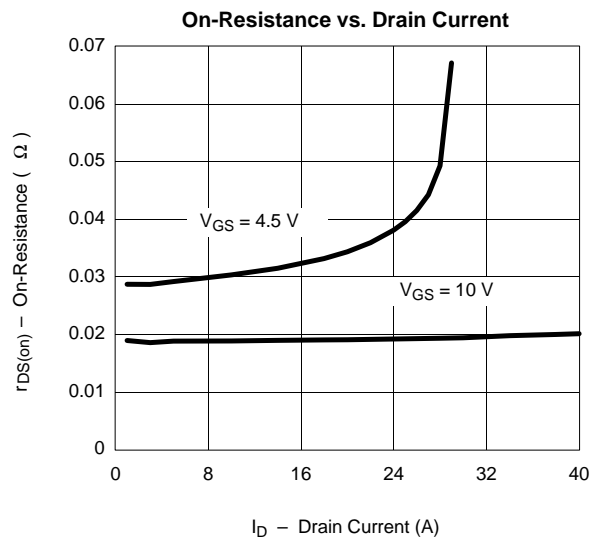
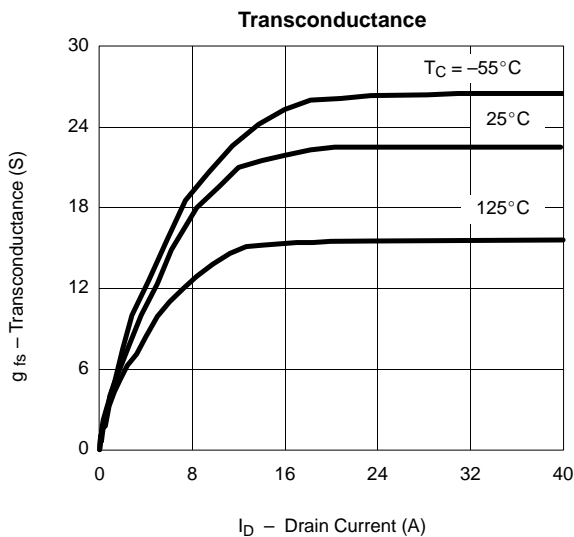
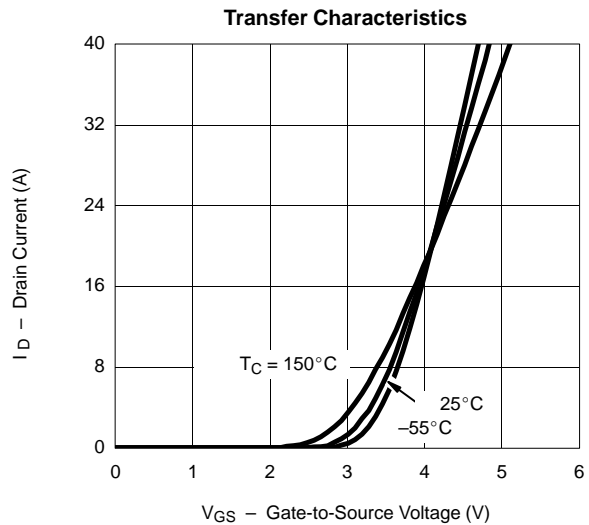
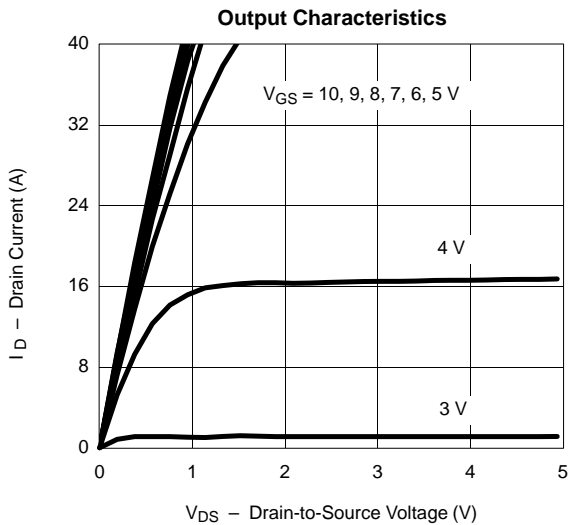
SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.0			
Gate-Body Leakage	I _{GSS}	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 = 125 °C			50	
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 175 °C			150	
On-State Drain Current ^b	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	30			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 15 A		0.020	0.030	Ω
		V _{GS} = 10 V, I _D = 15 A, T _J = 125 °C		0.033	0.050	
		V _{GS} = 10 V, I _D = 15 A, T _J = 175 °C		0.036	0.054	
		V _{GS} = 4.5 V, I _D = 12.5 A		0.030	0.045	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 15 A	10	22		S
Dynamic^a						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		1170		pF
Output Capacitance	C _{oss}			320		
Reverse Transfer Capacitance	C _{rss}			60		
Total Gate Charge ^c	Q _g	V _{DS} = 15 V, V _{GS} = 10 V, I _D = 30 A		18	35	nC
Gate-Source Charge ^c	Q _{gs}			5.5		
Gate-Drain Charge ^c	Q _{gd}			2		
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = 15 V, R _L = 0.5 Ω I _D ≅ 30 A, V _{GEN} = 10 V, R _G = 7.5 Ω		10	20	ns
Rise Time ^c	t _r			10	20	
Turn-Off Delay Time ^c	t _{d(off)}			25	40	
Fall Time ^c	t _f			15	30	
Source-Drain Diode Ratings and Characteristic (T_C = 25 °C)						
Pulsed Current	I _{SM}				40	A
Diode Forward Voltage ^b	V _{SD}	I _F = 30 A, V _{GS} = 0 V		1.1	1.5	V
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 30 A, di/dt = 100 A/μs		50	100	ns

Notes

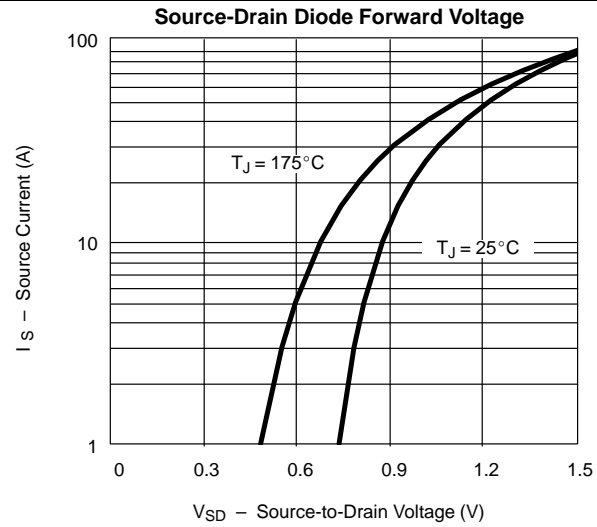
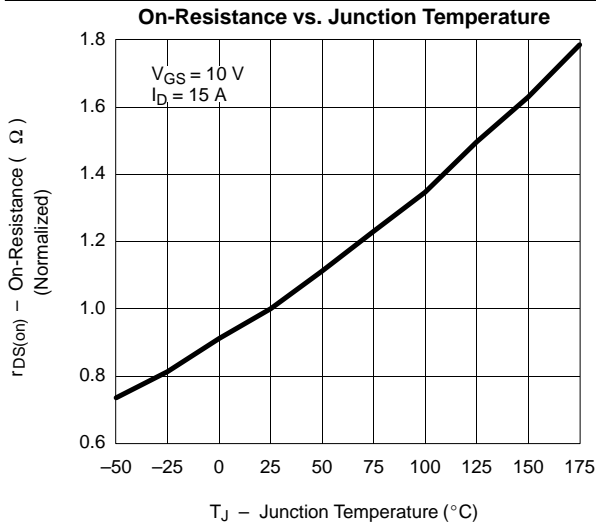
- a. Guaranteed by design, not subject to production testing.
- b. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- c. Independent of operating temperature.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



THERMAL RATINGS

