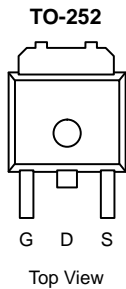




N-Ch 30-V (D-S), 175 °C, MOSFET PWM Optimized
New Product

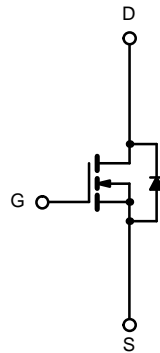
175 °C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETS

PRODUCT SUMMARY table with columns: V(BR)DSS (V), RDS(ON) (Ω), ID (A). Values: 30, 0.010 @ VGS = 10 V, ±50A; 0.015 @ VGS = 4.5 V, ±45



Drain Connected to Tab

Order Number: SUD50N03-10P



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (TC = 25 °C UNLESS OTHERWISE NOTED) table with columns: PARAMETER, SYMBOL, LIMIT, UNIT. Rows include Drain-Source Voltage, Gate-Source Voltage, Continuous Drain Current, Pulsed Drain Current, etc.

THERMAL RESISTANCE RATINGS table with columns: PARAMETER, SYMBOL, LIMIT, UNIT. Rows include Maximum Junction-to-Ambient, Maximum Junction-to-Case

- Notes:
A. Package limited.
B. Surface mounted on FR4 Board, t ≤ 10 sec.
C. See SOA curve for voltage derating.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70822.



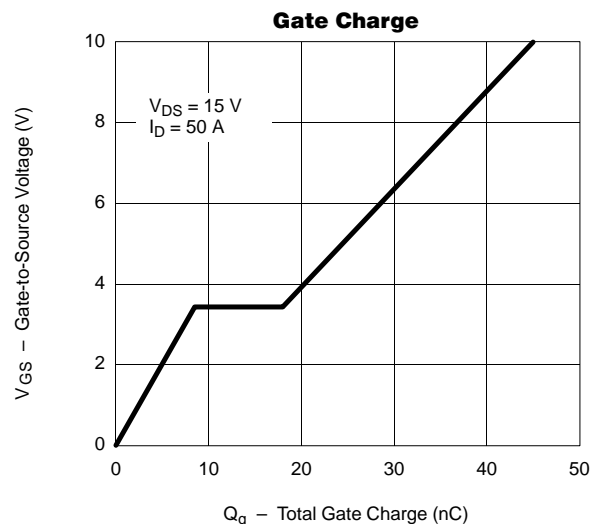
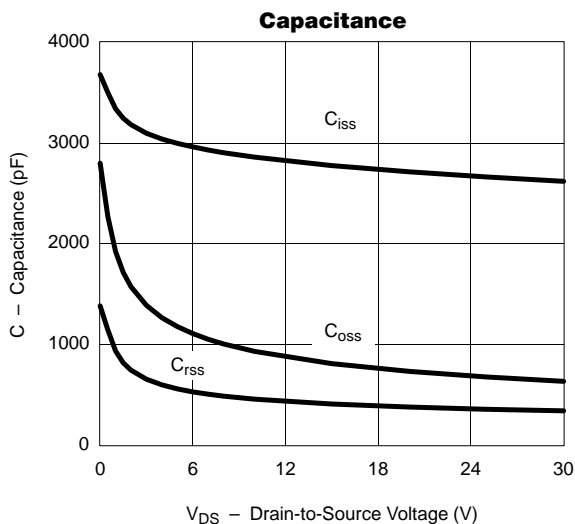
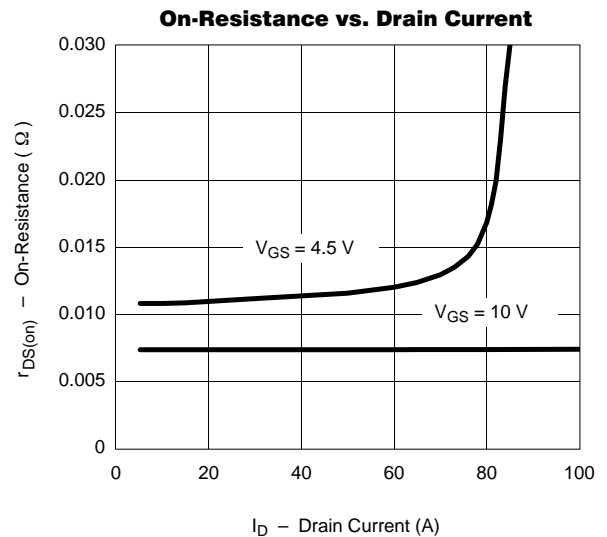
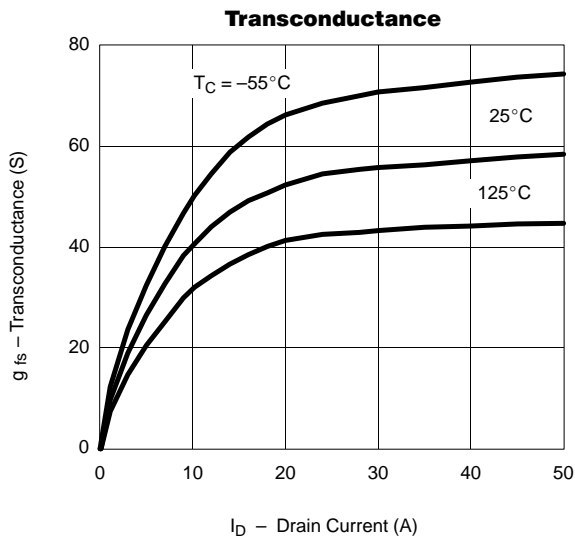
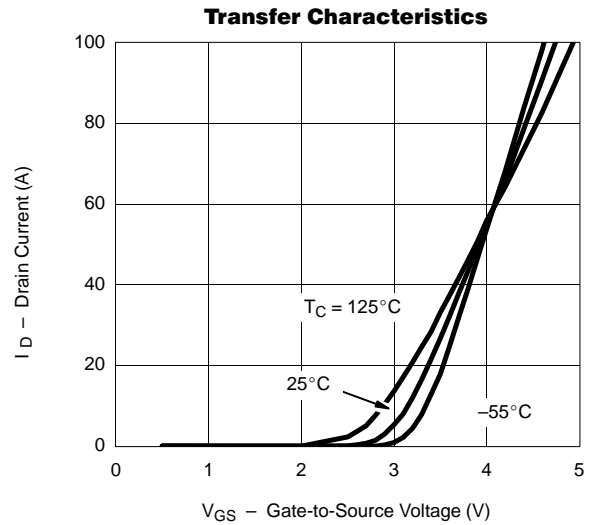
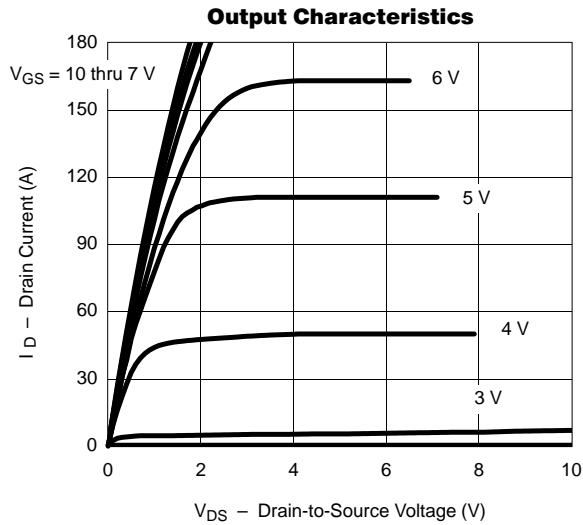
MOSFET SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _{DS} = 250 μA	1	2		
Gate-Body Leakage	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 = 125 °C			50	
		V _{DS} = 24 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	50			A
Drain-Source On-State Resistance ^B	r _{DS(on)}	V _{GS} = 10 V, I _D = 25 A		0.0075	0.010	Ω
		V _{GS} = 10 V, I _D = 15 A, T _J = 125 °C			0.016	
		V _{GS} = 10 V, I _D = 15 A, T _J = 175 °C			0.019	
		V _{GS} = 4.5 V, I _D = 15 A		0.011	0.015	
Forward Transconductance ^B	g _{fs}	V _{DS} = 15 V, I _D = 15 A	20	40		S
DYNAMIC^A						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		2700		pF
Output Capacitance	C _{oss}			680		
Reverse Transfer Capacitance	C _{rss}			360		
Total Gate Charge ^C	Q _g	V _{DS} = 15 V, V _{GS} = 10 V, I _D = 50 A		45	70	nC
Gate-Source Charge ^C	Q _{gs}			8.5		
Gate-Drain Charge ^C	Q _{gd}			9.5		
Turn-On Delay Time ^C	t _{d(on)}	V _{DD} = 15 V, R _L = 0.3 Ω I _D ≈ 50 A, V _{GEN} = 10 V, R _G = 2.5 Ω		12	20	ns
Rise Time ^C	t _r			7	15	
Turn-Off Delay Time ^C	t _{d(off)}			35	60	
Fall Time ^C	t _f			12	20	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)^A						
Continuous Current	I _S				50	A
Pulsed Current	I _{SM}				180	
Forward Voltage ^B	V _{SD}	I _F = 50 A, V _{GS} = 0 V		1.2	1.5	V
Reverse Recovery Time	t _{rr}	I _F = 50 A, di/dt = 100 A/μs		40	80	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 Otherwise Noted)

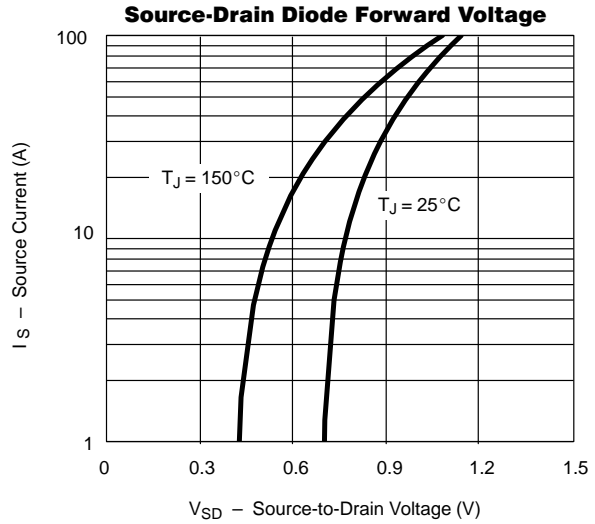
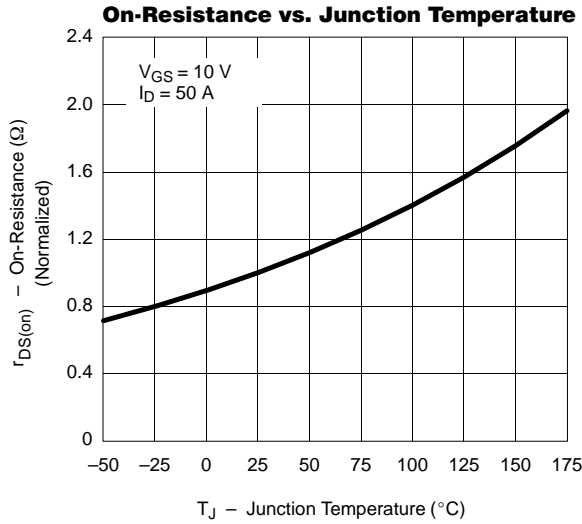


SUD50N03-10P

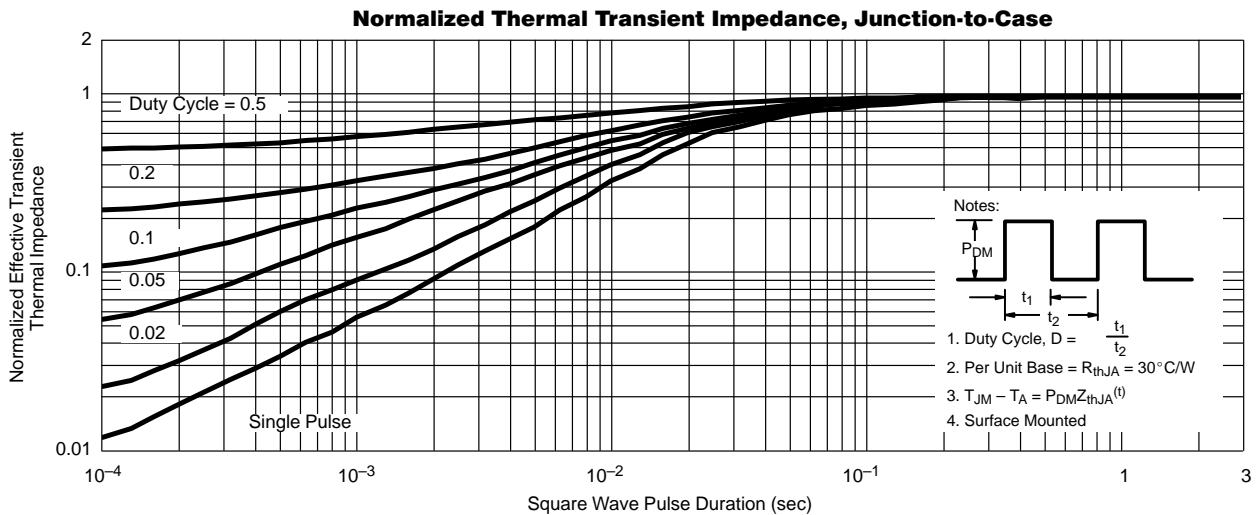
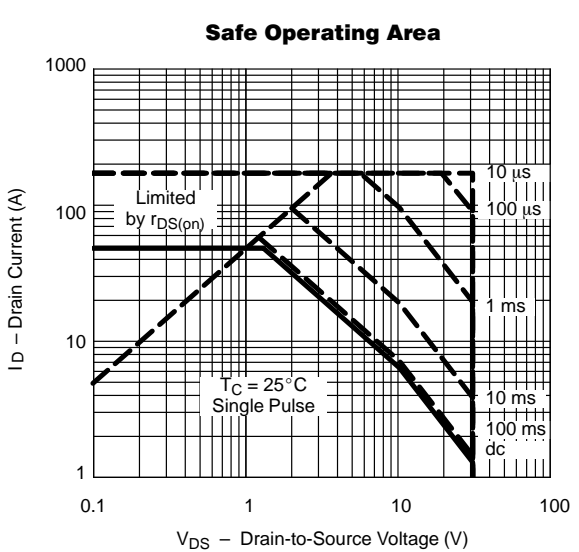
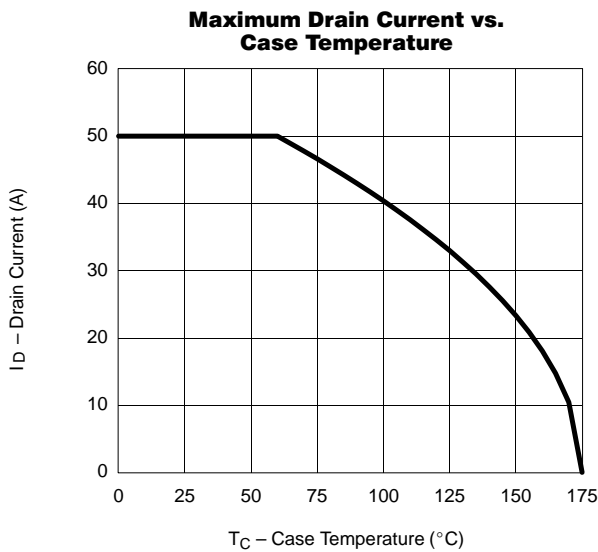
Siliconix



Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings





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