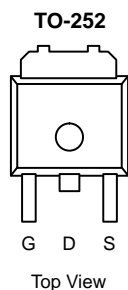
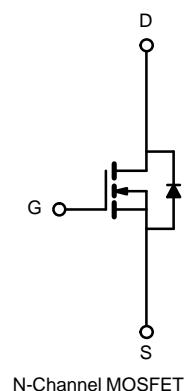


PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A) ^a
60	0.022 @ V _{GS} = 10 V	30
	0.025 @ V _{GS} = 4.5 V	30



Order Number:
SUD40N06-25L

Drain Connected to Tab



ABSOLUTE MAXIMUM RATINGS (T_C = 25 °C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Limit	Unit
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (T _J = 175 °C) ^b	I _D	T _C = 25 °C	30
		T _C = 100 °C	30
Pulsed Drain Current	I _{DM}	100	A
Continuous Source Current (Diode Conduction)	I _S	34	A
Avalanche Current	I _{AR}	34	A
Repetitive Avalanche Energy (Duty Cycle ≤ 1%)	L = 0.1 mH E _{AR}	58	mJ
Maximum Power Dissipation	P _D	T _C = 25 °C	75
		T _A = 25 °C	1.4 ^b , 2.5 ^c
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}	Free Air, FR4 Board Mount	60
		Free Air, Vertical Mount	110
Maximum Junction-to-Case	R _{thJC}	2.0	°C/W

Notes:

- Package limited.
- Free air, vertical mount.
- Surface mounted on 1" x 1" FR4 Board, t ≤ 10 sec.

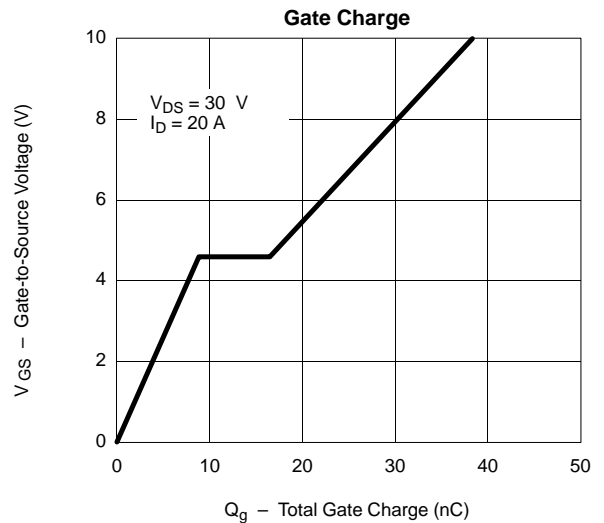
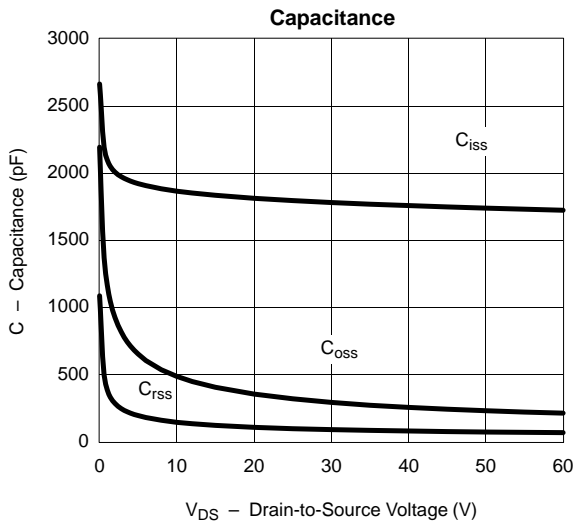
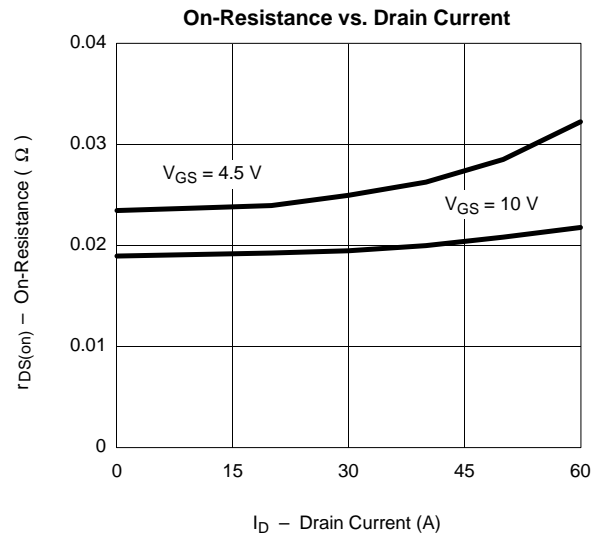
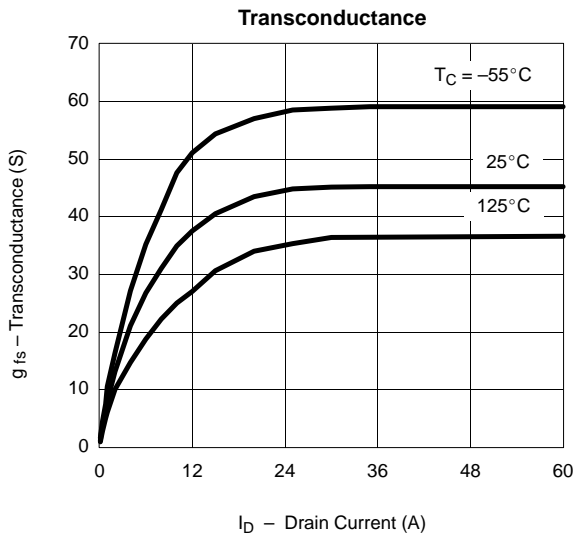
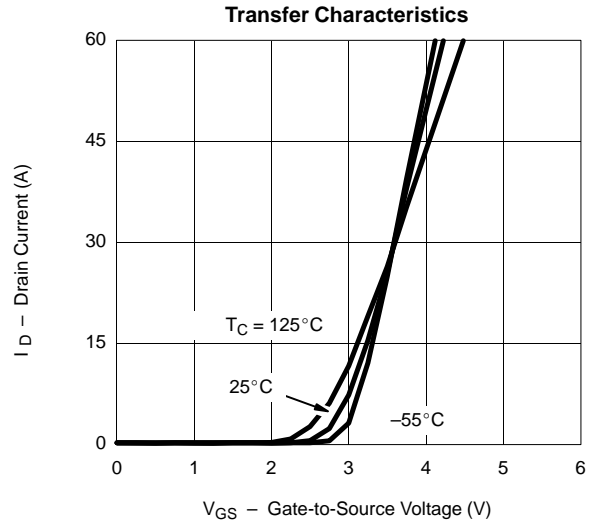
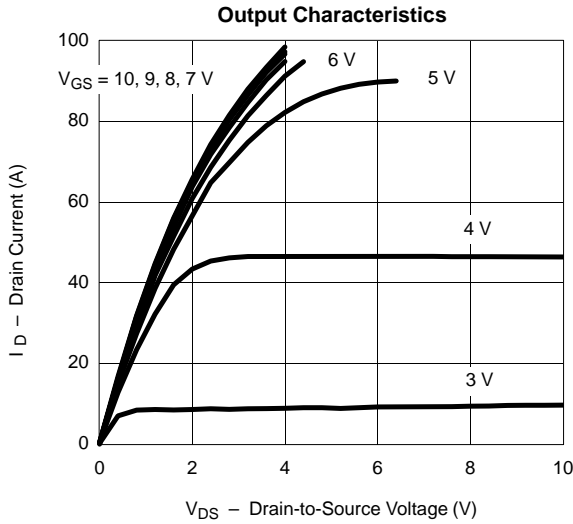
For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.0	2.0	3.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0 V			1	μA
		V _{DS} = 60 V, V _{GS} = 0 V, T _J = 125 °C			50	
		V _{DS} = 60 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	20			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 20 A			0.022	Ω
		V _{GS} = 10 V, I _D = 20 A, T _J = 125 °C			0.043	
		V _{GS} = 10 V, I _D = 20 A, T _J = 175 °C			0.053	
		V _{GS} = 4.5 V, I _D = 20 A			0.025	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 20 A				S
Dynamic						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		1800		pF
Output Capacitance	C _{oss}			350		
Reverse Transfer Capacitance	C _{rss}			100		
Total Gate Charge ^c	Q _g	V _{DS} = 30 V, V _{GS} = 10 V, I _D = 40 A		40	60	nC
Gate-Source Charge ^c	Q _{gs}			9		
Gate-Drain Charge ^c	Q _{gd}			10		
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = 30 V, R _L = 0.9 Ω I _D ≅ 20 A, V _{GEN} = 10 V, R _G = 2.5 Ω		10	20	ns
Rise Time ^c	t _r			9	20	
Turn-Off Delay Time ^c	t _{d(off)}			28	50	
Fall Time ^c	t _f			7	15	
Source-Drain Diode Ratings and Characteristics (T_C = 25 °C)						
Pulsed Current	I _{SM}				20	A
Diode Forward Voltage	V _{SD}	I _F = 20 A, V _{GS} = 0 V		1.0	1.5	V
Reverse Recovery Time	t _{rr}	I _F = 20 A, di/dt = 100 A/μs		48	100	ns

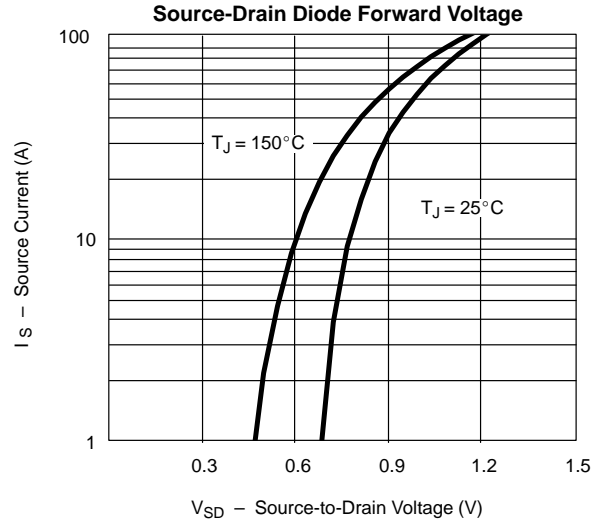
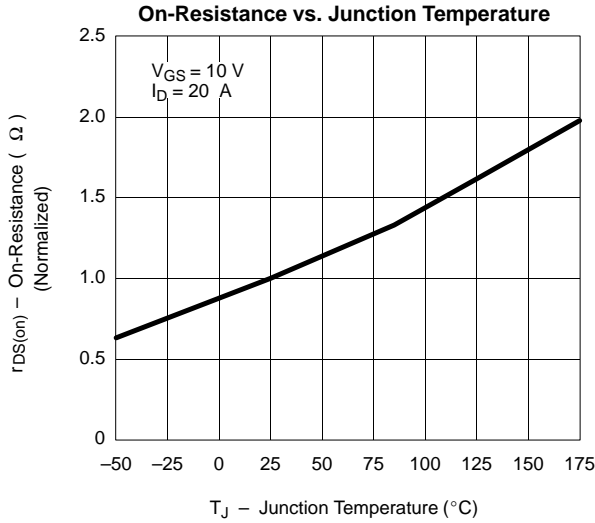
Notes:

- For design aid only; not subject to production testing.
- Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- Independent of operating temperature.

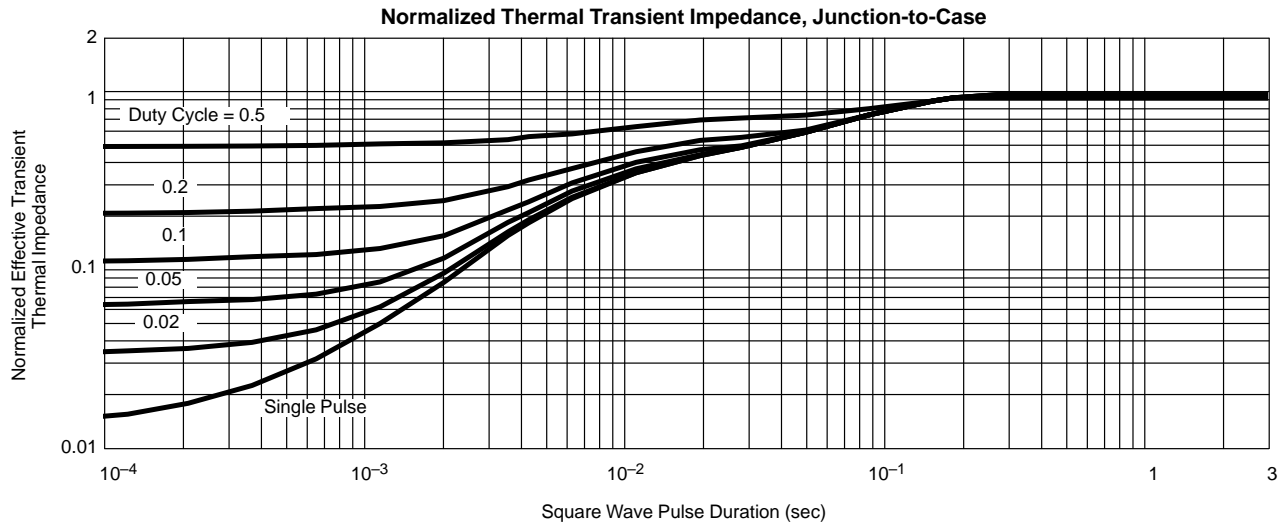
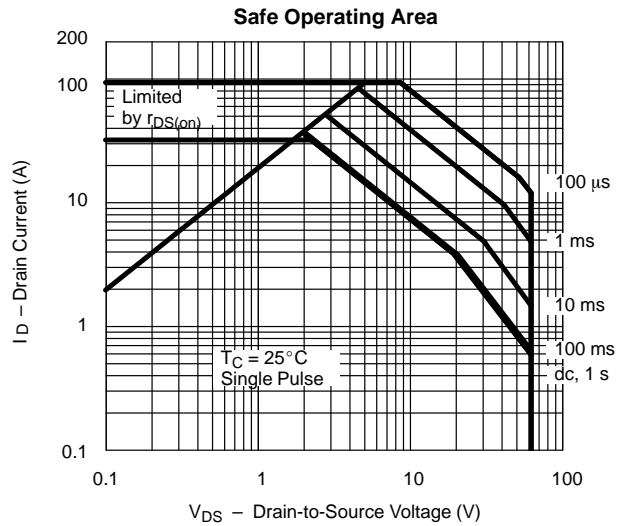
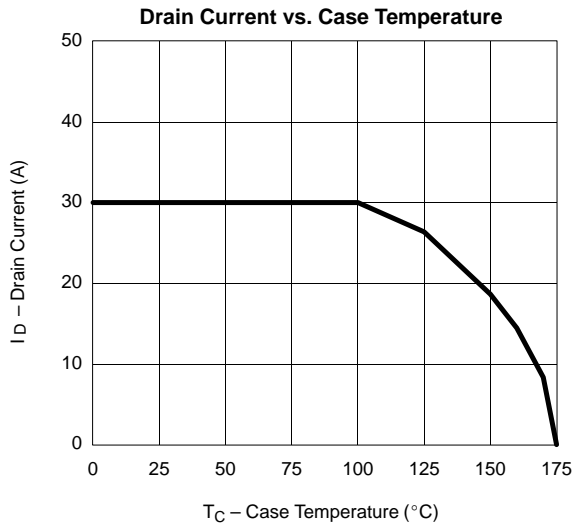
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



THERMAL RATINGS



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