

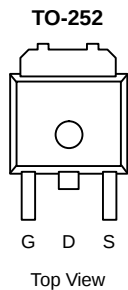


P-Channel 60-V (D-S), 175°C MOSFET, Logic Level

PRODUCT SUMMARY

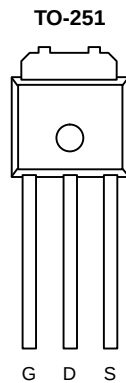
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-60	0.170 @ $V_{GS} = -10$ V	-10
	0.280 @ $V_{GS} = -4.5$ V	-8

175°C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETs



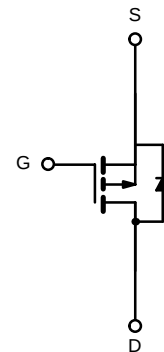
Order Number:
SUD10P06-280L

Drain Connected to Tab



Order Number:
SUU10P06-280L

and DRAIN-TAB



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	Limit	Unit
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	$T_C = 25^\circ\text{C}$	I_D	-10	A
	$T_C = 100^\circ\text{C}$		-7	
Pulsed Drain Current		I_{DM}	-20	
Continuous Source Current (Diode Conduction)		I_S	-10	
Avalanche Current		I_{AR}	-10	
Repetitive Avalanche Energy (Duty Cycle $\leq 1\%$)		E_{AR}	5	mJ
Maximum Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	37	W
	$T_A = 25^\circ\text{C}$		2 ^a	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 175	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient ^a	FR4 Board Mount	R_{thJA}	60	70	$^\circ\text{C/W}$
	Free Air		120	140	
Junction-to-Case		R_{thJC}	3.7	4.0	

Notes

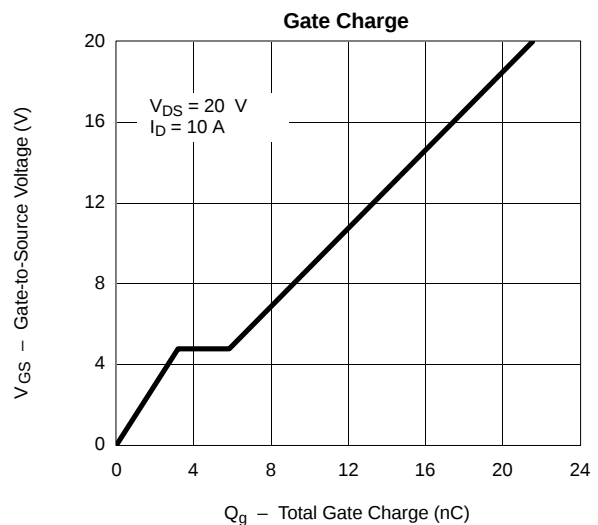
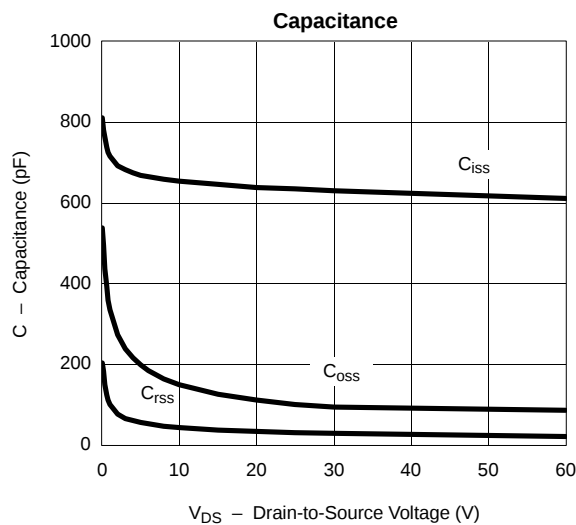
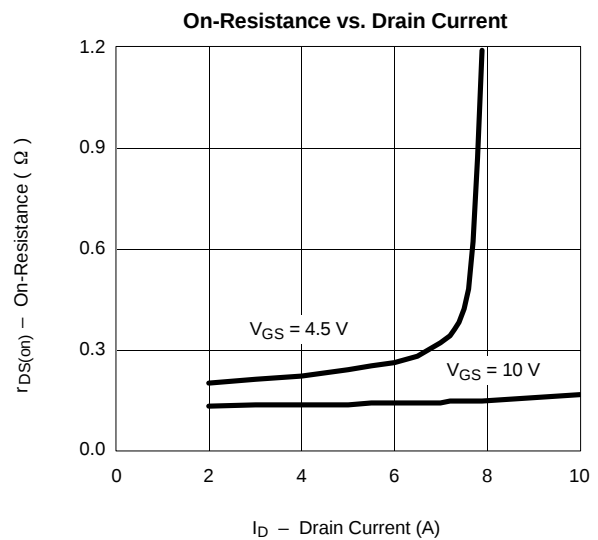
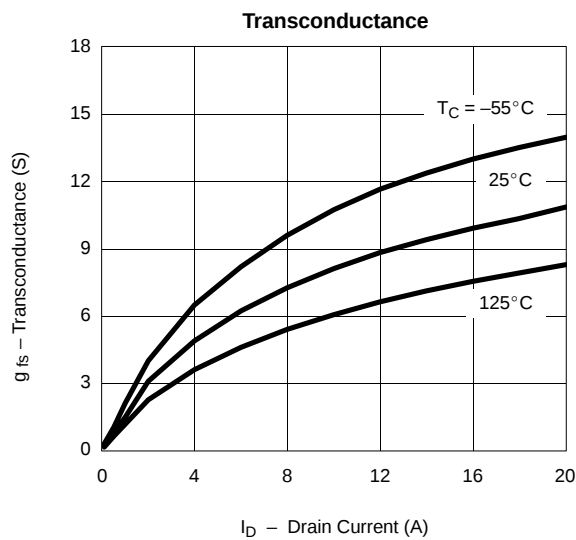
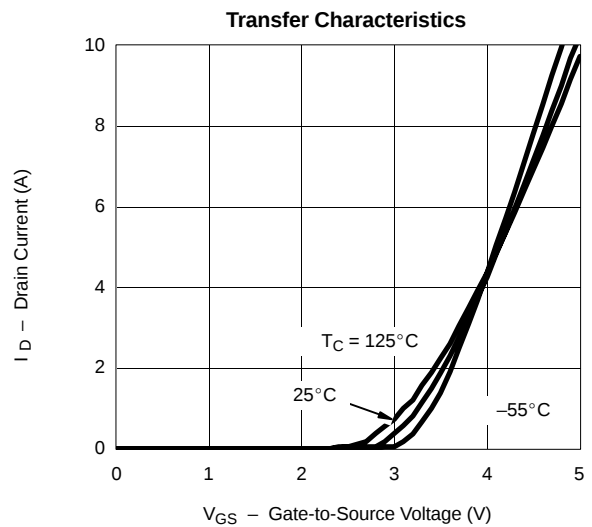
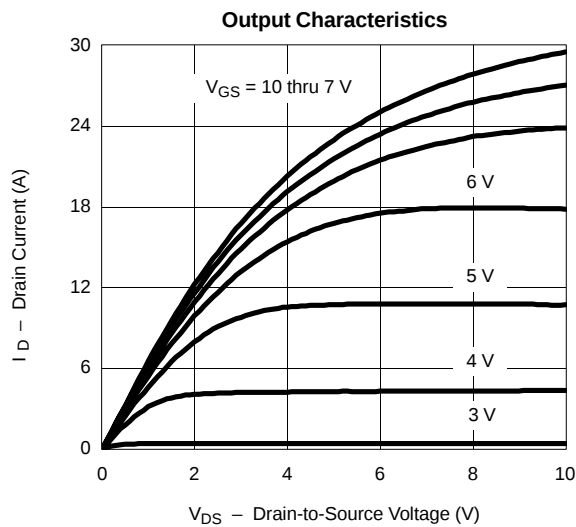
a. Surface Mounted on FR4 Board.

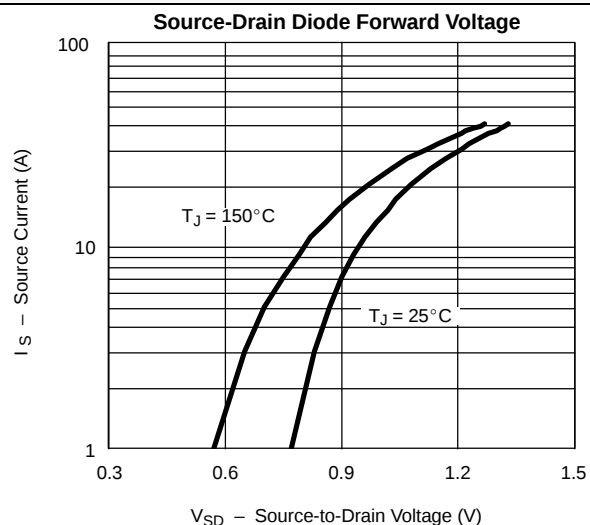
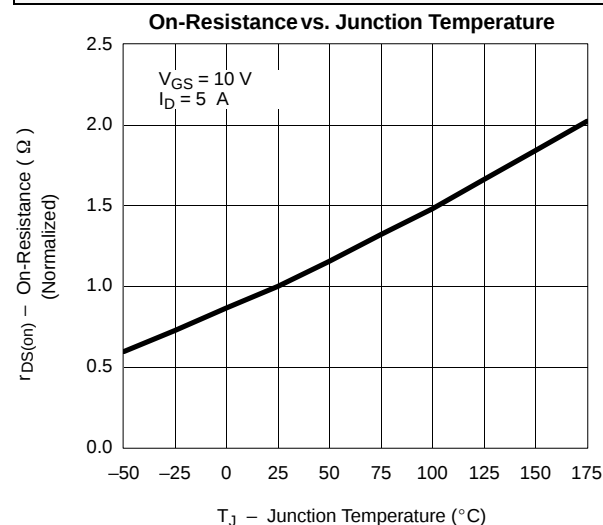
For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

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 _{DS} = 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	−10			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = −10 V, I _D = −5 A		0.130	0.170	Ω
		V _{GS} = −10 V, I _D = −5 A, T _J = 125°C			0.31	
		V _{GS} = −10 V, I _D = −5 A, T _J = 175°C			0.375	
		V _{GS} = −4.5 V, I _D = −2 A		0.210	0.280	
Forward Transconductance ^b	g _{fs}	V _{DS} = −15 V, I _D = −5 A		6		S
Dynamic						
Input Capacitance	C _{iss}	V _{DS} = −25 V, V _{GS} = 0 V, f = 1 MHz		635		pF
Output Capacitance	C _{oss}			100		
Reverse Transfer Capacitance	C _{rss}			30		
Total Gate Charge	Q _g	V _{DS} = −30 V, V _{GS} = −10 V, I _D = −10 A		11.5	25	nC
Gate-Source Charge	Q _{gs}			3.5		
Gate-Drain Charge	Q _{gd}			2		
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = −30 V, R _L = 3 Ω I _D ≈ 10 A, V _{GEN} = −10 V, R _G = 2.5 Ω		9	20	ns
Rise Time ^c	t _r			16	20	
Turn-Off Delay Time ^c	t _{d(off)}			17	30	
Fall Time ^c	t _f			19	35	
Source-Drain Diode Ratings and Characteristics (T _C = 25° C) ^a						
Pulsed Current	I _{SM}				−20	A
Forward Voltage ^b	V _{SD}	I _F = 10 A, V _{GS} = 0 V			−1.3	V
Reverse Recovery Time	t _{rr}	I _F = 10 A, di/dt = 100 A/μs		50	80	ns

Notes:

- Guaranteed by design, not subject to production testing.
- Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.
- Independent of operating temperature.

**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**THERMAL RATINGS**