

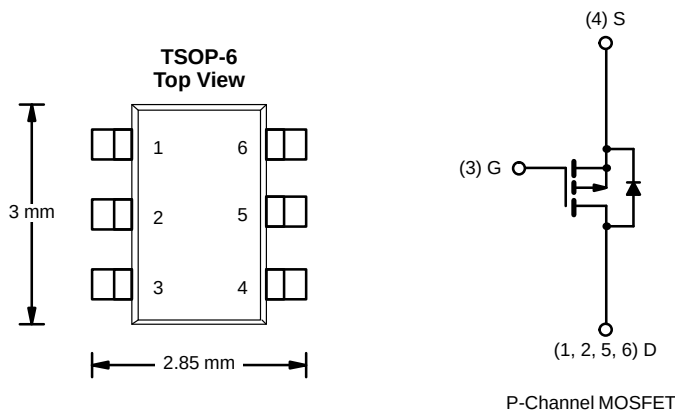


P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.065 @ $V_{GS} = -10$ V	± 4.3
	0.100 @ $V_{GS} = -4.5$ V	± 3.4

TrenchFET®
Power MOSFETs



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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	± 4.3	A
	$T_A = 70^\circ\text{C}$		± 3.4	
Pulsed Drain Current		I_{DM}	± 20	
Continuous Source Current (Diode Conduction) ^a		I_S	-1.7	
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	2	W
	$T_A = 70^\circ\text{C}$		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	62.5	$^\circ\text{C/W}$

Notes

a. Surface Mounted on FR4 Board, $t \leq 5$ sec.

**SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\ \mu\text{A}$	-1.0			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 20\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\ \text{V}$, $V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -30\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 70^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5\ \text{V}$, $V_{GS} = -10\ \text{V}$	-15			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -10\ \text{V}$, $I_D = -4.3\ \text{A}$			0.065	Ω
		$V_{GS} = -4.5\ \text{V}$, $I_D = -3.4\ \text{A}$			0.100	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -15\ \text{V}$, $I_D = -4.3\ \text{A}$		6		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1.7\ \text{A}$, $V_{GS} = 0\ \text{V}$			-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -15\ \text{V}$, $V_{GS} = -10\ \text{V}$, $I_D = -4.3\ \text{A}$		11	20	nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			1.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15\ \text{V}$, $R_L = 15\ \Omega$ $I_D \approx -1\ \text{A}$, $V_{GEN} = -10\ \text{V}$, $R_G = 6\ \Omega$		7	15	ns
Rise Time	t_r			11	20	
Turn-Off Delay Time	$t_{d(off)}$			30	50	
Fall Time	t_f			11	20	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -1.7\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$		50	80	

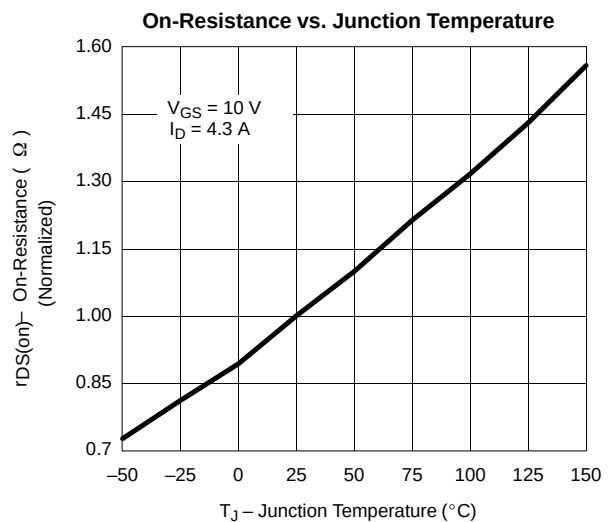
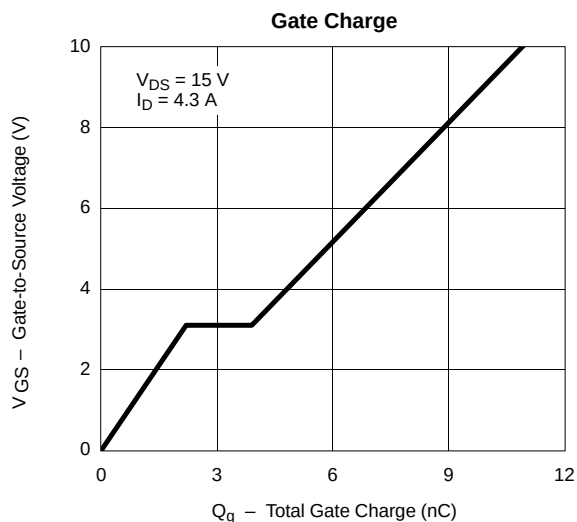
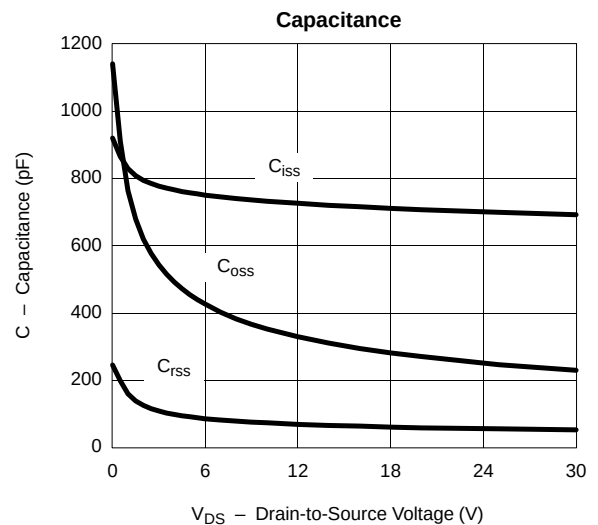
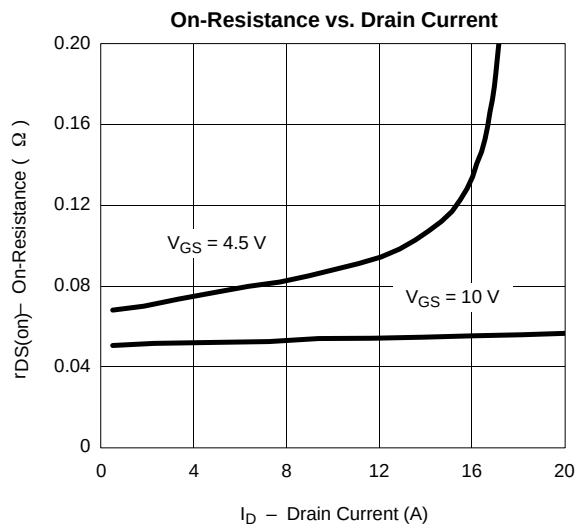
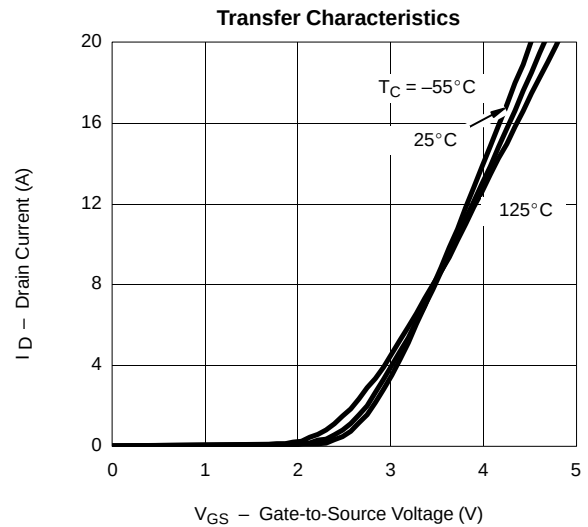
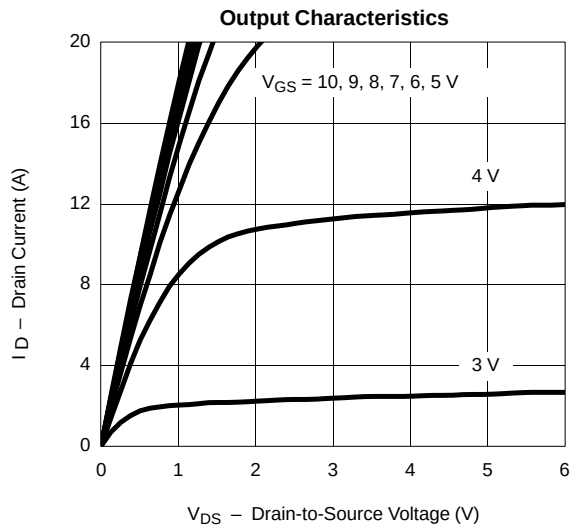
Notes

a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

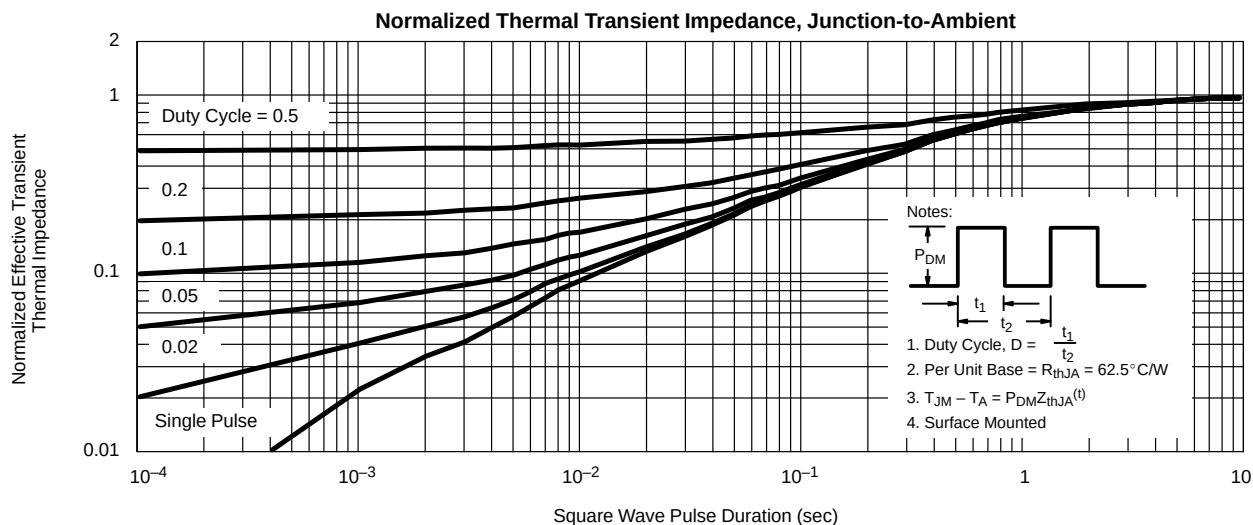
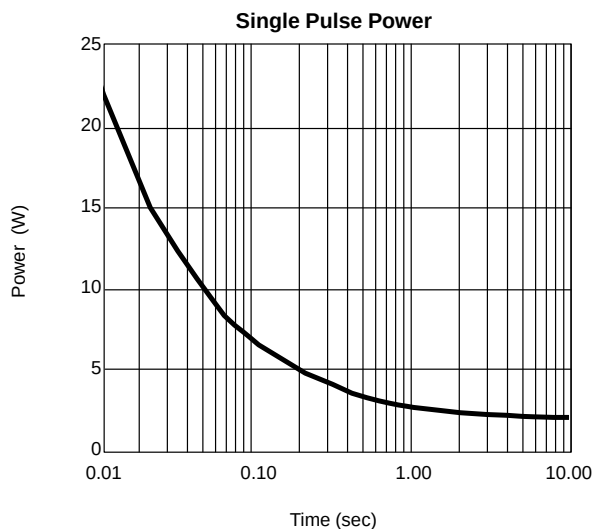
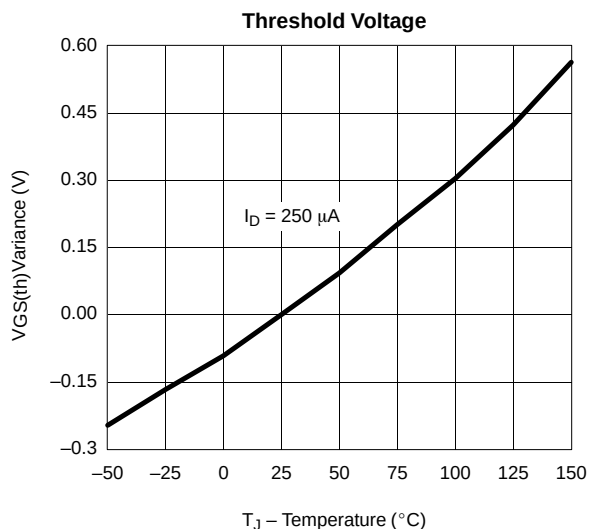
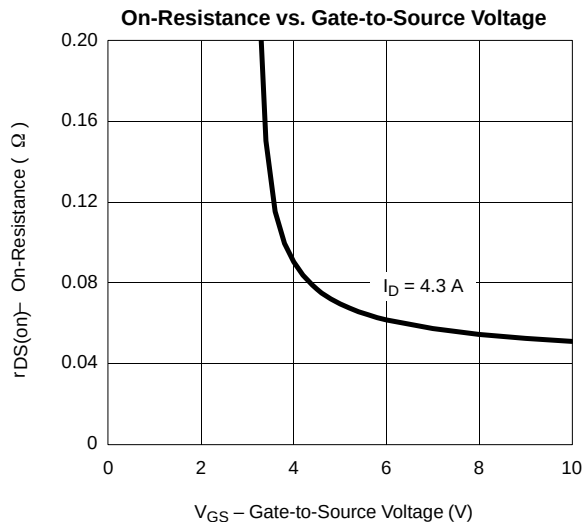
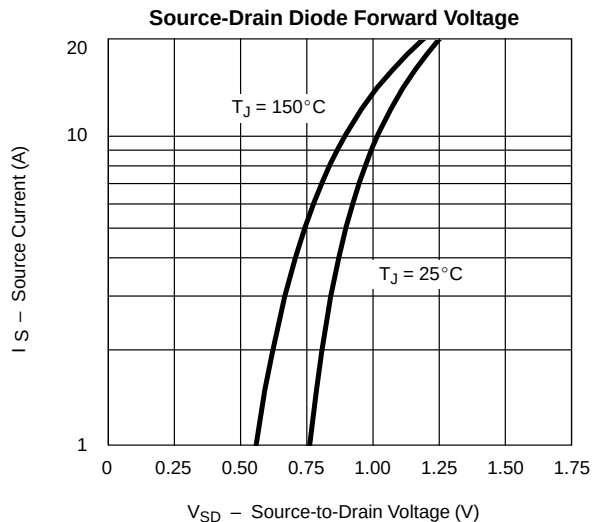
b. Guaranteed by design, not subject to production testing.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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