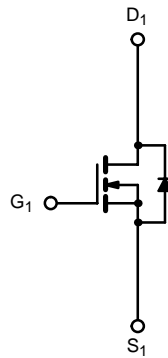
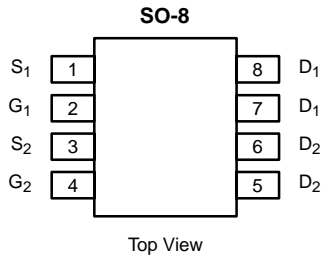




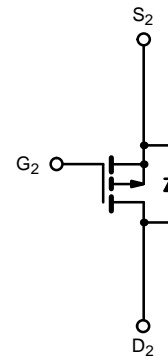
## N- and P-Channel 30-V (D-S) MOSFET

### PRODUCT SUMMARY

	$V_{DS}$ (V)	$R_{DS(ON)}$ ( $\Omega$ )	$I_D$ (A)
N-Channel	30	0.065 @ $V_{GS} = 10$ V	$\pm 3.9$
		0.095 @ $V_{GS} = 4.5$ V	$\pm 3.1$
P-Channel	-30	0.085 @ $V_{GS} = -10$ V	$\pm 3.5$
		0.19 @ $V_{GS} = -4.5$ V	$\pm 2.5$



N-Channel MOSFET



P-Channel MOSFET

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

PARAMETER	SYMBOL	N-CHANNEL	P-CHANNEL	UNIT
Drain-Source Voltage	$V_{DS}$	30	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	$\pm 20$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>A</sup>	$I_D$	$T_A = 25^\circ\text{C}$	$\pm 3.9$	A
		$T_A = 70^\circ\text{C}$	$\pm 3.1$	
Pulsed Drain Current	$I_{DM}$	$\pm 20$	$\pm 20$	
Continuous Source Current (Diode Conduction) <sup>A</sup>	$I_S$	1.7	-1.7	
Maximum Power Dissipation <sup>A</sup>	$P_D$	$T_A = 25^\circ\text{C}$	2.0	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	N- OR P-CHANNEL	UNIT
Maximum Junction-to-Ambient <sup>A</sup>	$R_{thJA}$	62.5	$^\circ\text{C}/\text{W}$

Notes

A. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70155. For SPICE model information via the Worldwide Web: <http://www.siliconix.com/www/product/spice.htm>



SPECIFICATIONS (T <sub>J</sub> = 25°C UNLESS OTHERWISE NOTED)							
PARAMETER	SYMBOL	TEST CONDITION		MIN	TYP	MAX	UNIT
<b>STATIC</b>							
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	N-Ch	1.0			V
		V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	P-Ch	-1.0			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V	N-Ch			±100	nA
			P-Ch			±100	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0 V	N-Ch			1	μA
		V <sub>DS</sub> = -30 V, V <sub>GS</sub> = 0 V	P-Ch			-1	
		V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55°C	N-Ch			25	
		V <sub>DS</sub> = -30 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55°C	P-Ch			-25	
On-State Drain Current <sup>B</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 5 V, V <sub>GS</sub> = 10 V	N-Ch	15			A
		V <sub>DS</sub> ≥ -5 V, V <sub>GS</sub> = -10 V	P-Ch	-15			
Drain-Source On-State Resistance <sup>B</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 3.9 A	N-Ch		0.043	0.065	Ω
		V <sub>GS</sub> = -10 V, I <sub>D</sub> = -2.5 A	P-Ch		0.066	0.085	
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 3.1 A	N-Ch		0.075	0.095	
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -1.8 A	P-Ch		0.125	0.19	
Forward Transconductance <sup>B</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 3.9 A	N-Ch		7		S
		V <sub>DS</sub> = -15 V, I <sub>D</sub> = -2.5 A	P-Ch		5		
Diode Forward Voltage <sup>B</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.7 A, V <sub>GS</sub> = 0 V	N-Ch		0.8	1.2	V
		I <sub>S</sub> = -1.7 A, V <sub>GS</sub> = 0 V	P-Ch		-0.8	-1.2	
<b>DYNAMICA</b>							
Total Gate Charge	Q <sub>g</sub>	N-Channel V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 10 V, I <sub>D</sub> = 3.9 A P-Channel V <sub>DS</sub> = -10 V, V <sub>GS</sub> = -10 V, I <sub>D</sub> = -2.5 A	N-Ch		9.8	15	nC
Gate-Source Charge	Q <sub>gs</sub>		N-Ch		2.1		
Gate-Drain Charge	Q <sub>gd</sub>		P-Ch		1.9		
Turn-On Delay Time	t <sub>d(on)</sub>	N-Channel V <sub>DD</sub> = 10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 10 V, R <sub>G</sub> = 6 Ω P-Channel V <sub>DD</sub> = -10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ -1 A, V <sub>GEN</sub> = -10 V, R <sub>G</sub> = 6 Ω	N-Ch		9	15	ns
			P-Ch		7	15	
Rise Time	t <sub>r</sub>		N-Ch		6	18	
			P-Ch		9	18	
Turn-Off Delay Time	t <sub>d(off)</sub>		N-Ch		18	27	
			P-Ch		14	27	
Fall Time	t <sub>f</sub>	N-Ch		6	15		
		P-Ch		8	15		
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.7 A, di/dt = 100 A/μs	N-Ch		52	80	
		I <sub>F</sub> = -1.7 A, di/dt = 100 A/μs	P-Ch		50	80	

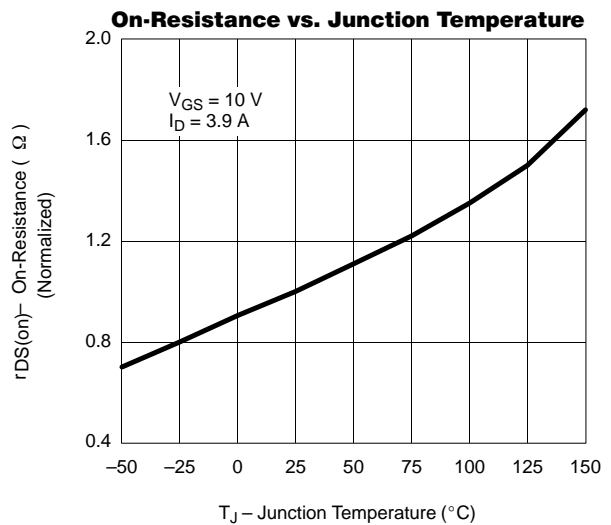
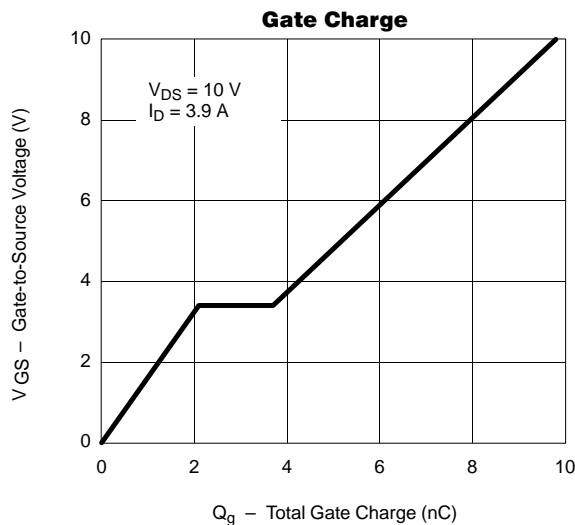
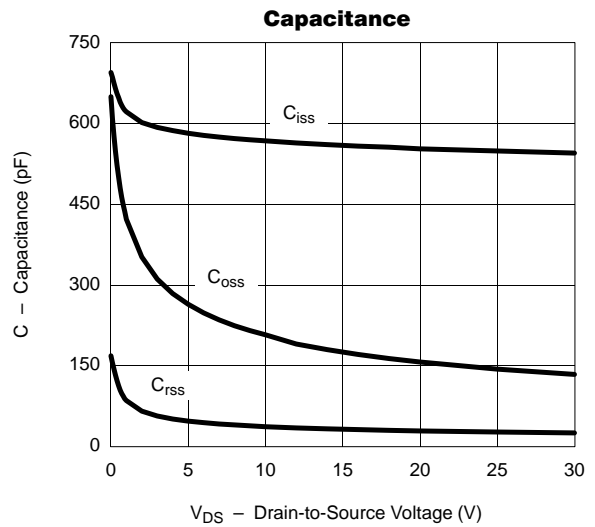
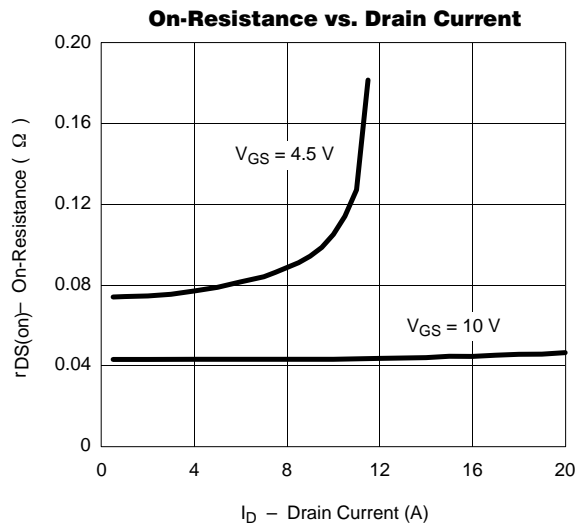
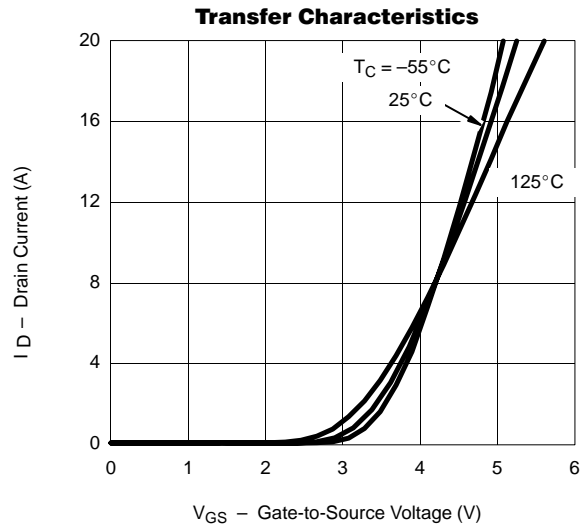
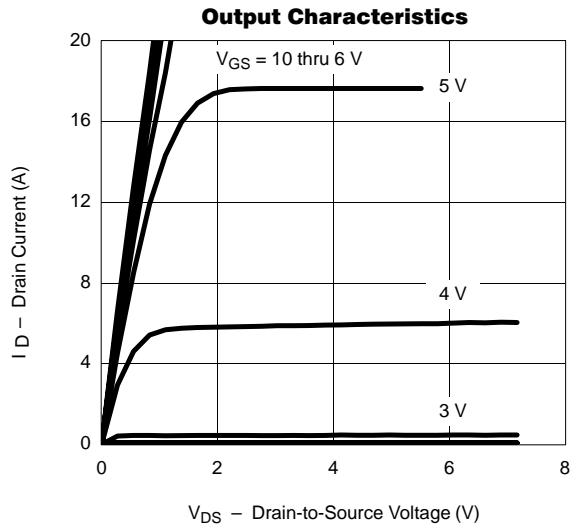
Notes

- A. Guaranteed by design, not subject to production testing.
- B. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.



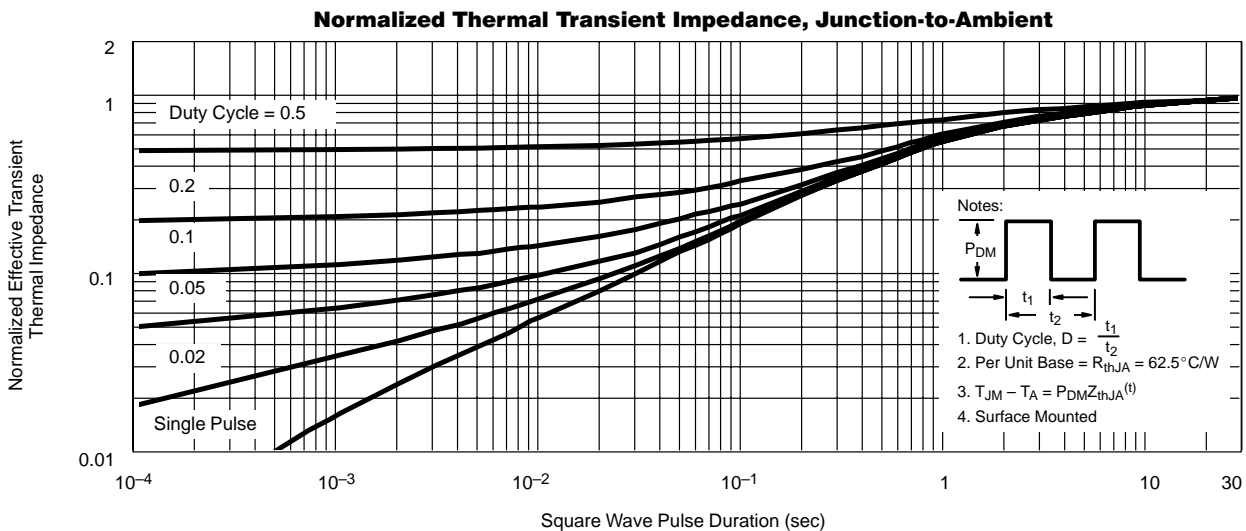
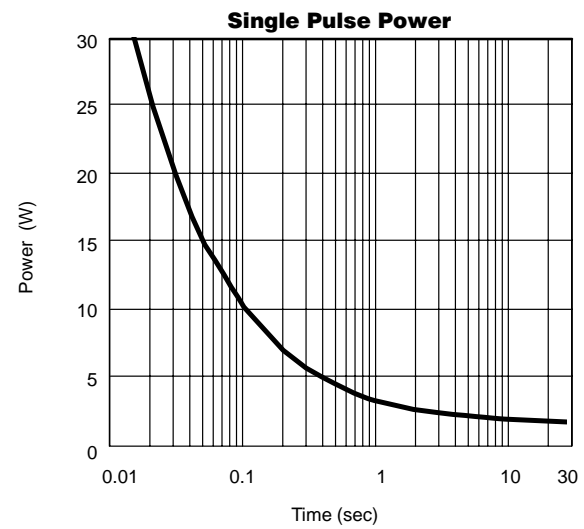
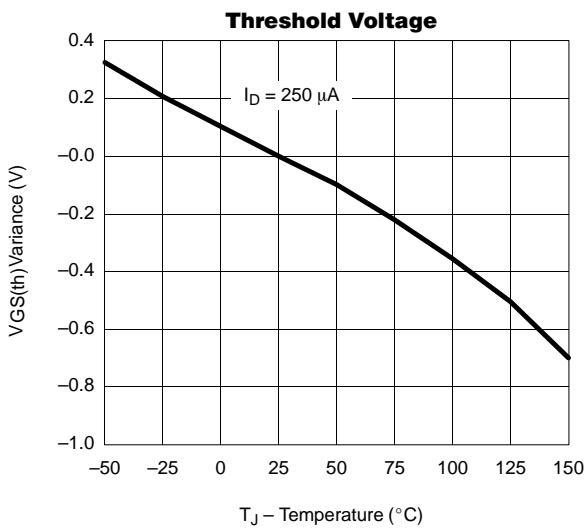
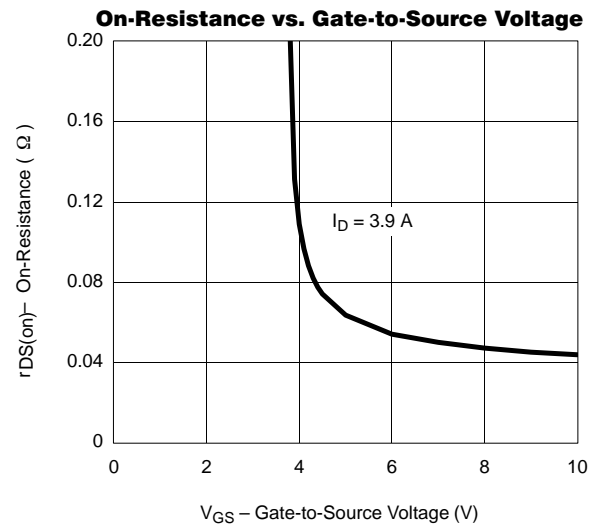
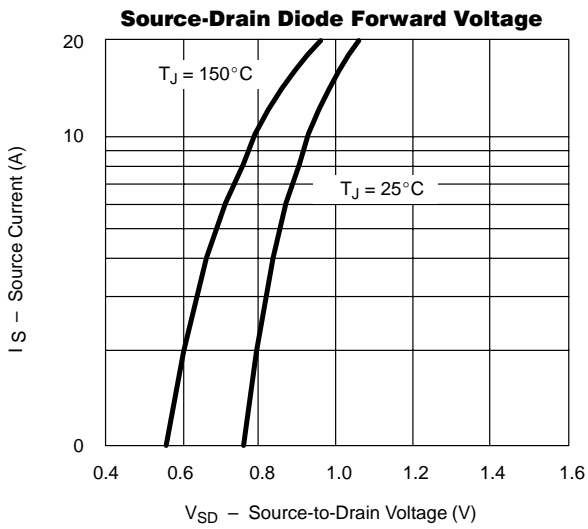
**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

**N-CHANNEL**



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

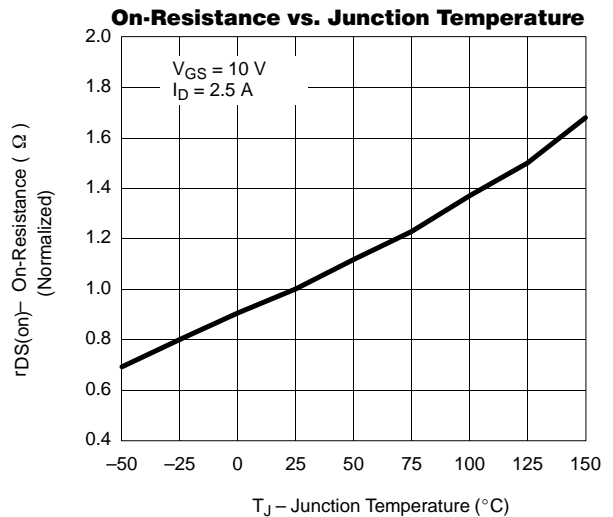
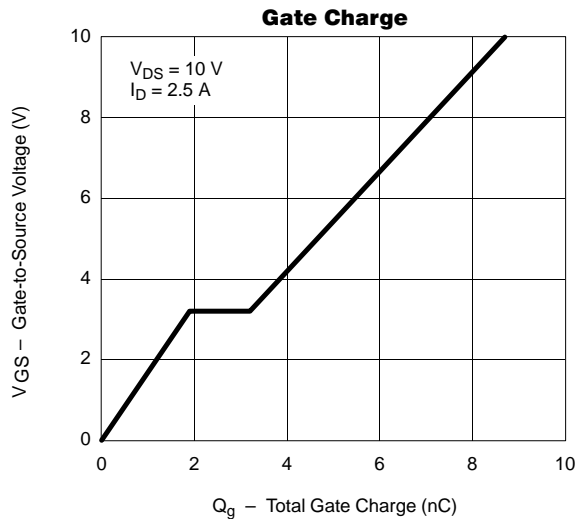
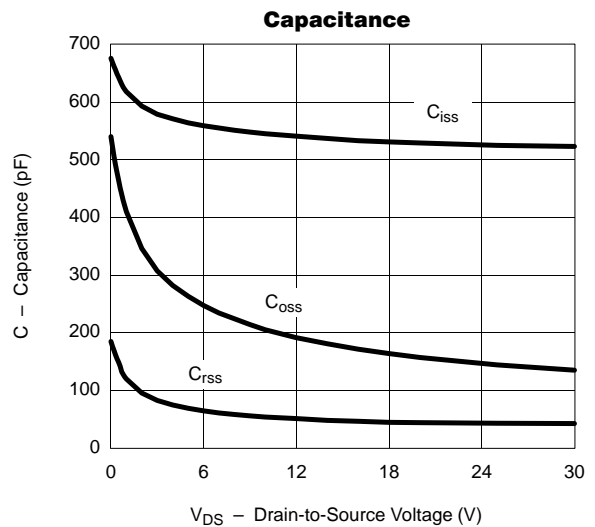
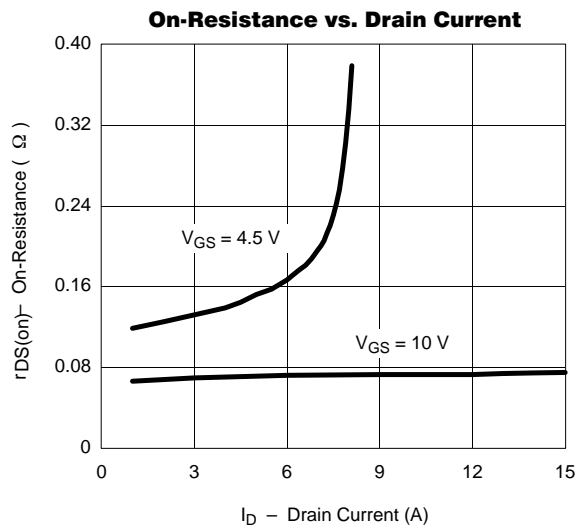
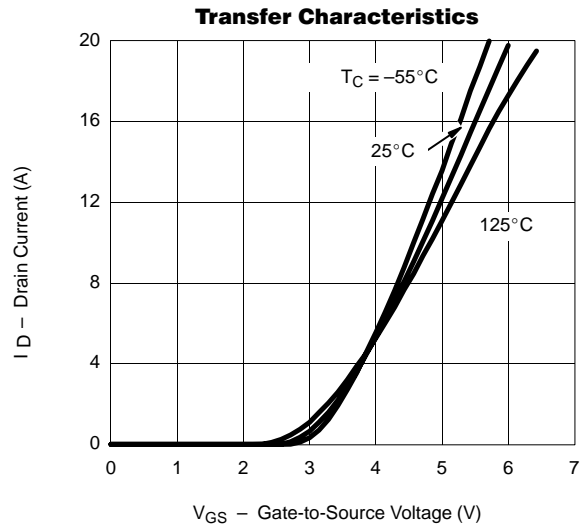
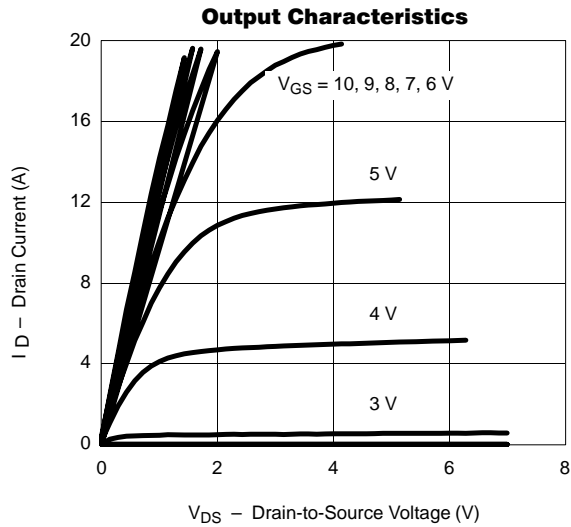
N-CHANNEL





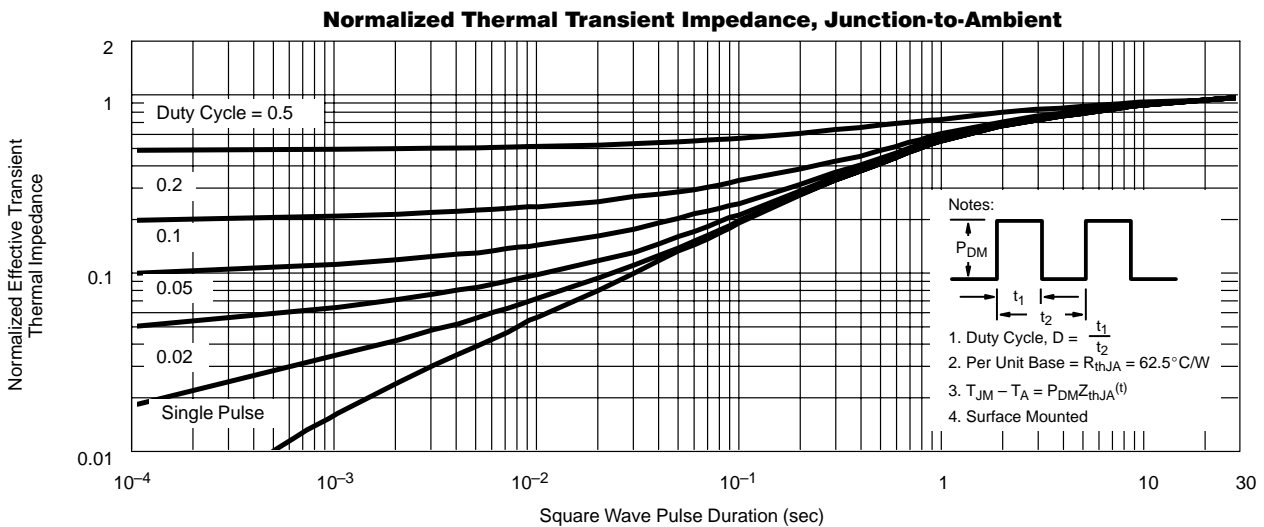
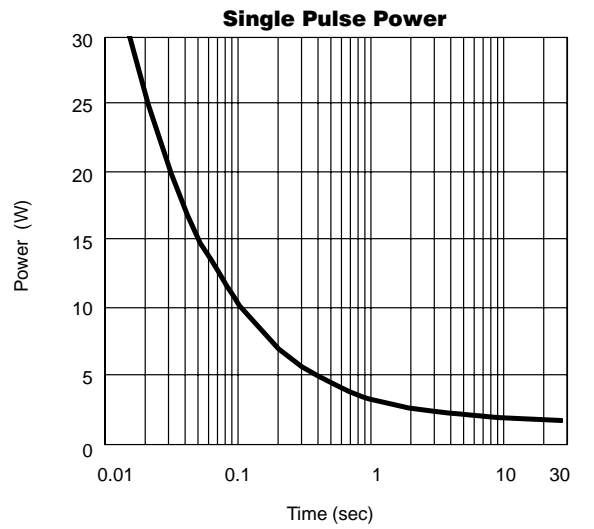
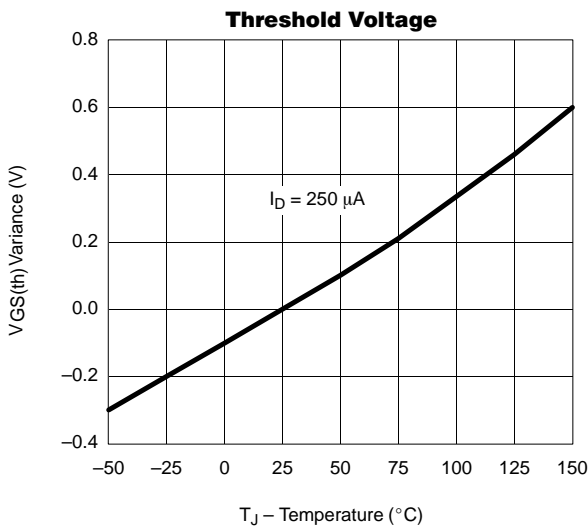
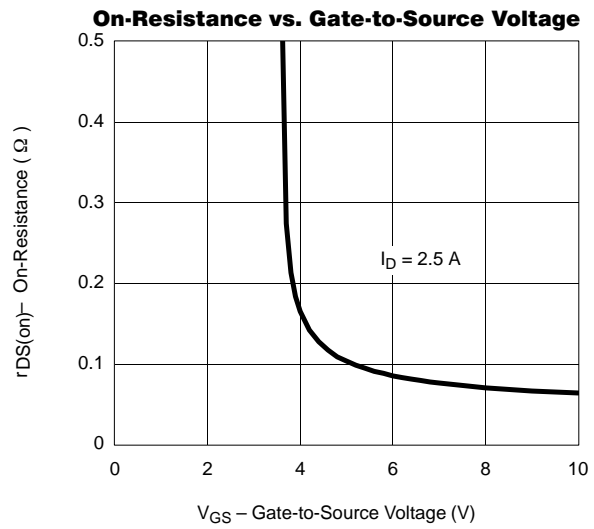
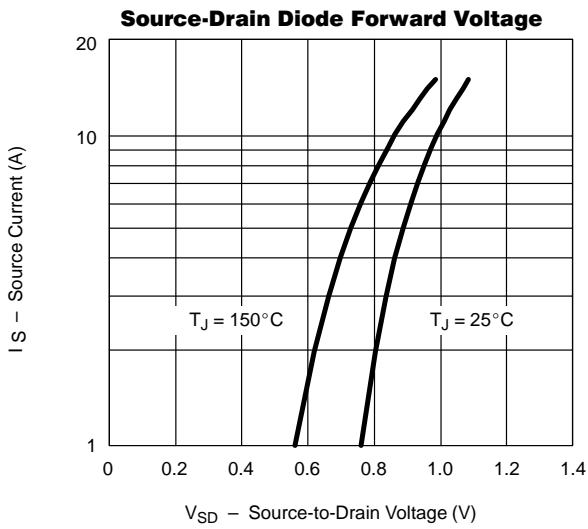
**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

**P-CHANNEL**



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

P-CHANNEL





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