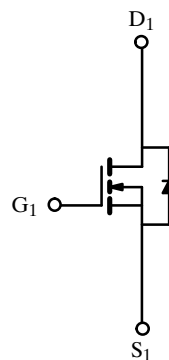
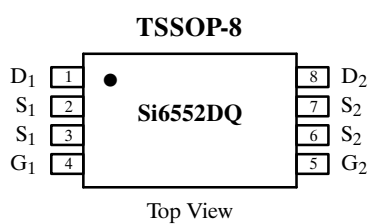


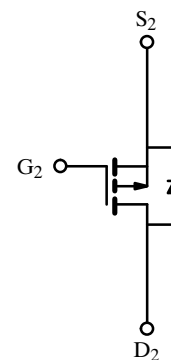
Dual Enhancement-Mode MOSFET (N- and P- Channel)

Product Summary

	V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
N-Channel	20	0.08 @ V _{GS} = 4.5 V	±2.8
		0.11 @ V _{GS} = 2.5 V	±2.1
P-Channel	-12	0.1 @ V _{GS} = -4.5 V	±2.5
		0.18 @ V _{GS} = -2.5 V	±1.9



N-Channel MOSFET



P-Channel MOSFET

Absolute Maximum Ratings (T_A = 25°C Unless Otherwise Noted)

Parameter	Symbol	N-Channel	P-Channel	Unit	
Drain-Source Voltage	V _{DS}	20	-12	V	
Gate-Source Voltage	V _{GS}	±8			
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	±2.8	±2.5	A
		T _A = 70°C	±2.3	±2.0	
Pulsed Drain Current	I _{DM}	±20			
Continuous Source Current (Diode Conduction) ^a	I _S	1.0	-1.0		
Maximum Power Dissipation ^a	P _D	T _A = 25°C	1.0		W
		T _A = 70°C	0.64		
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150		°C	

Thermal Resistance Ratings

Parameter	Symbol	N- or P-Channel	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	125	°C/W

Notes

a. Surface Mounted on FR4 Board, t ≤ 10 sec.

Subsequent updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #1808.

Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

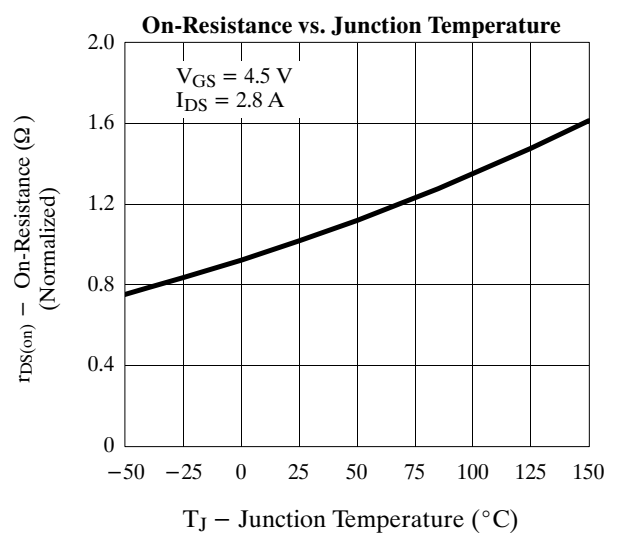
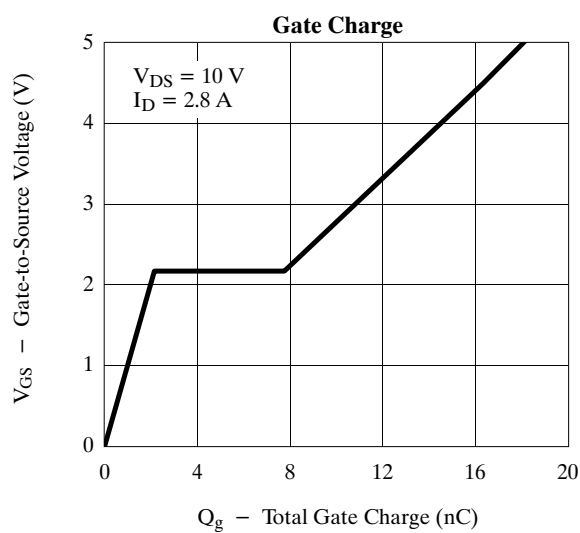
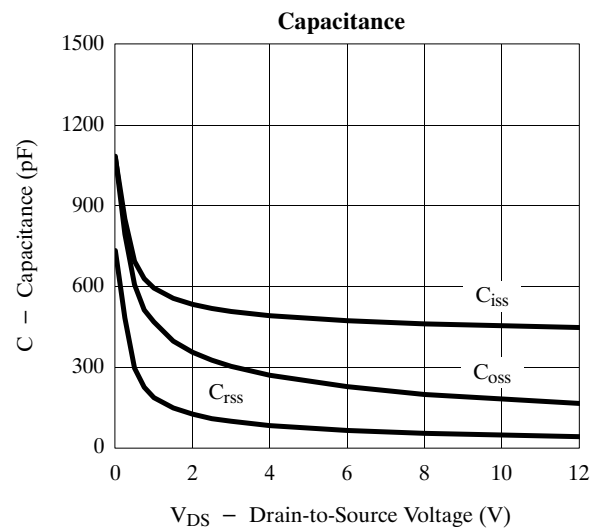
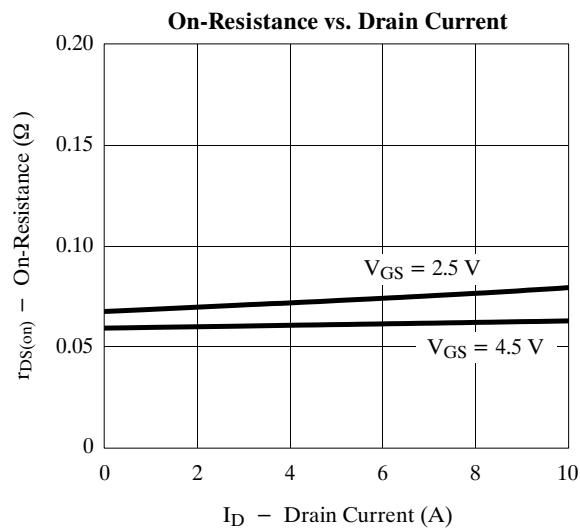
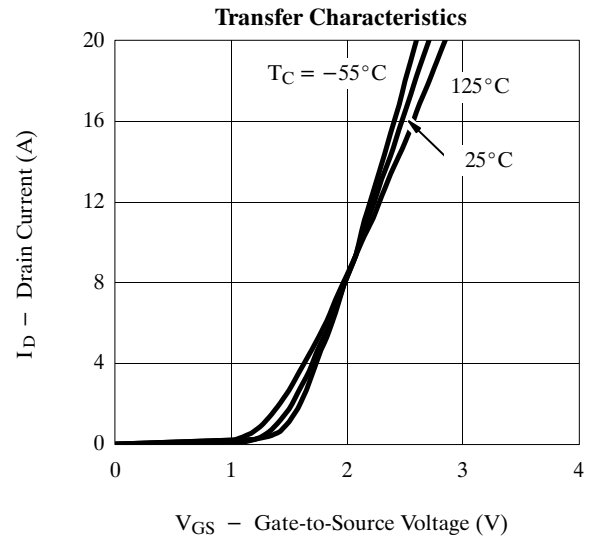
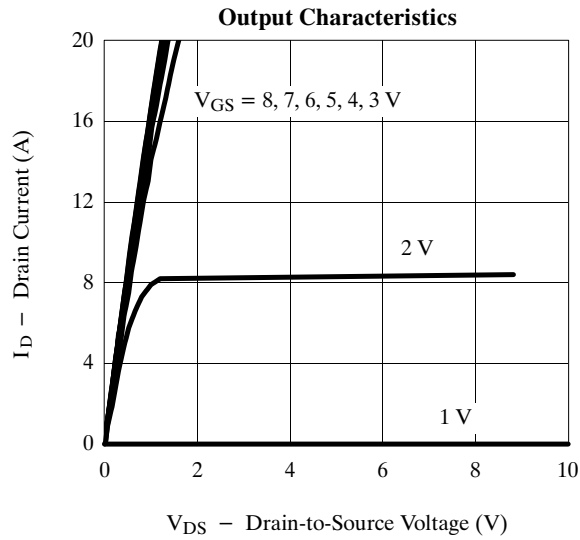
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Static							
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	N-Ch	0.6		V	
		$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	P-Ch	-0.6			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			± 100	nA	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\ \text{V}, V_{GS} = 0\ \text{V}$	N-Ch		1	μA	
		$V_{DS} = -12\ \text{V}, V_{GS} = 0\ \text{V}$	P-Ch		-1		
		$V_{DS} = 20\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$	N-Ch		5		
		$V_{DS} = -12\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$	P-Ch		-5		
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5\ \text{V}, V_{GS} = 4.5\ \text{V}$	N-Ch	10		A	
		$V_{DS} = -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	P-Ch	-10			
		$V_{DS} = 5\ \text{V}, V_{GS} = 2.5\ \text{V}$	N-Ch	4			
		$V_{DS} = -5\ \text{V}, V_{GS} = -2.5\ \text{V}$	P-Ch	-4			
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 4.5\ \text{V}, I_D = 2.8\ \text{A}$	N-Ch		0.08	Ω	
		$V_{GS} = -4.5\ \text{V}, I_D = 2.5\ \text{A}$	P-Ch		0.1		
		$V_{GS} = 2.5\ \text{V}, I_D = 2.1\ \text{A}$	N-Ch		0.11		
		$V_{GS} = -2.5\ \text{V}, I_D = 1.9\ \text{A}$	P-Ch		0.18		
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\ \text{V}, I_D = 2.8\ \text{A}$	N-Ch			S	
		$V_{DS} = -9\ \text{V}, I_D = -2.5\ \text{A}$	P-Ch				
Diode Forward Voltage ^a	V_{SD}	$I_S = 1.0\ \text{A}, V_{GS} = 0\ \text{V}$	N-Ch		1.2	V	
		$I_S = -1.0\ \text{A}, V_{GS} = 0\ \text{V}$	P-Ch		-1.2		
Dynamic^b							
Total Gate Charge	Q_g	N-Channel $V_{DS} = 10\ \text{V}, V_{GS} = 4.5\ \text{V}, I_D = 2.8\ \text{A}$ P-Channel $V_{DS} = -6\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -2.5\ \text{A}$	N-Ch		16	40	nC
Gate-Source Charge	Q_{gs}		N-Ch		3		
Gate-Drain Charge	Q_{gd}		N-Ch		6		
Turn-On Delay Time	$t_{d(on)}$	N-Channel $V_{DD} = 10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong 1\ \text{A}, V_{GEN} = 4.5\ \text{V}, R_G = 6\ \Omega$ P-Channel $V_{DD} = -6\ \text{V}, R_L = 6\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$	N-Ch		37	60	ns
			P-Ch		21	40	
Rise Time	t_r		N-Ch		66	100	
			P-Ch		35	70	
Turn-Off Delay Time	$t_{d(off)}$		N-Ch		56	100	
			P-Ch		43	80	
Fall Time	t_f		N-Ch		57	100	
			P-Ch		22	40	
Source-Drain Reverse Recovery Time	t_{rr}	N-Channel— $I_F = 1.0\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$	N-Ch		26	70	
		P-Channel— $I_F = -1.0\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$	P-Ch		35	70	

Notes

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

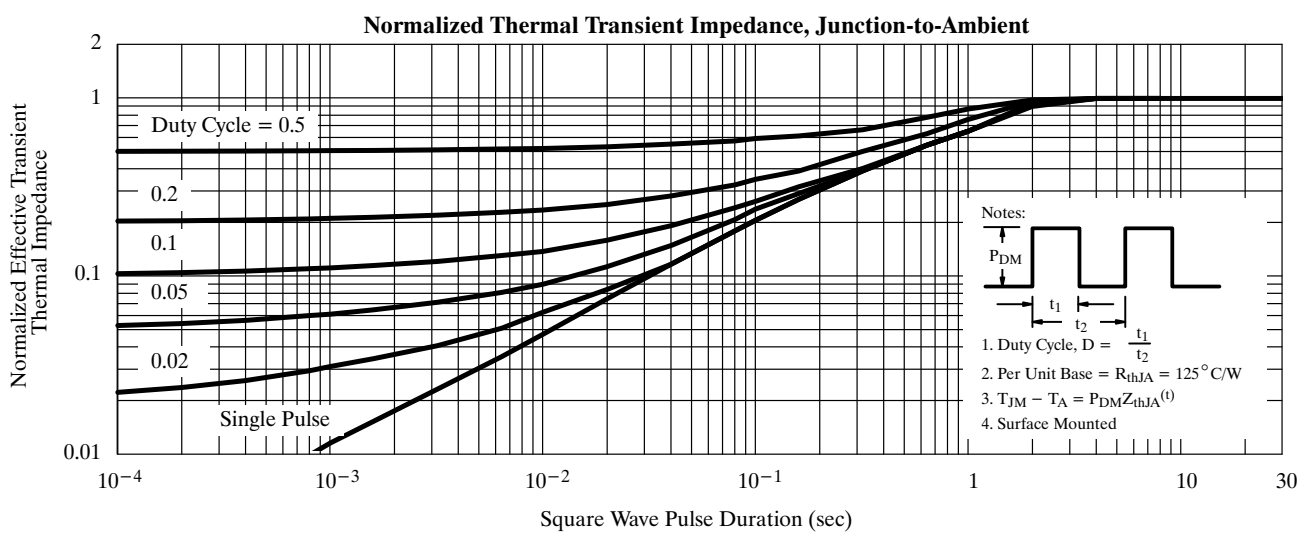
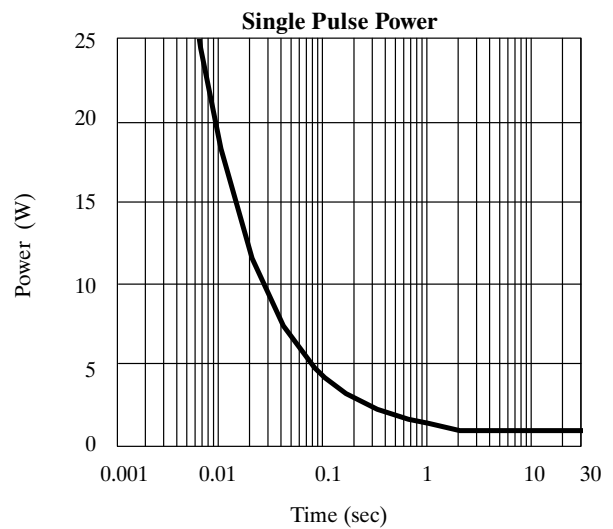
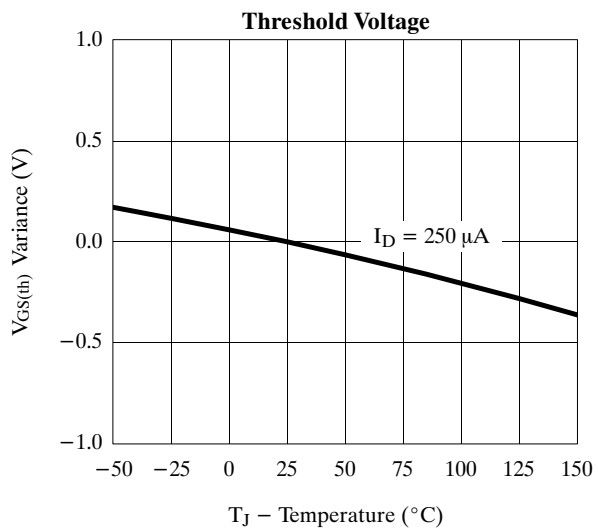
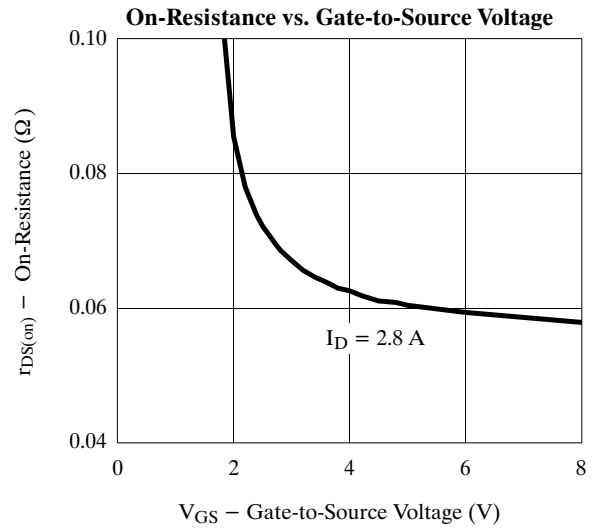
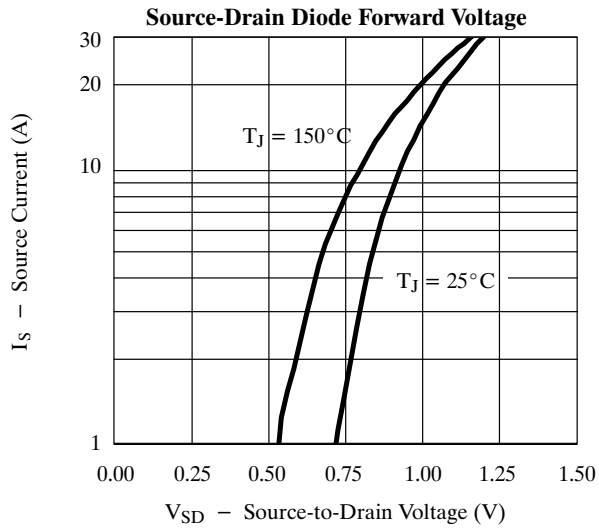
Typical Characteristics (25°C Unless Noted)

N-Channel



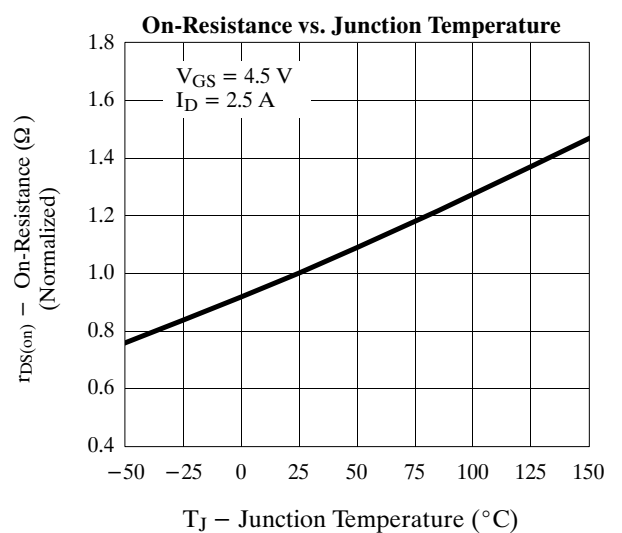
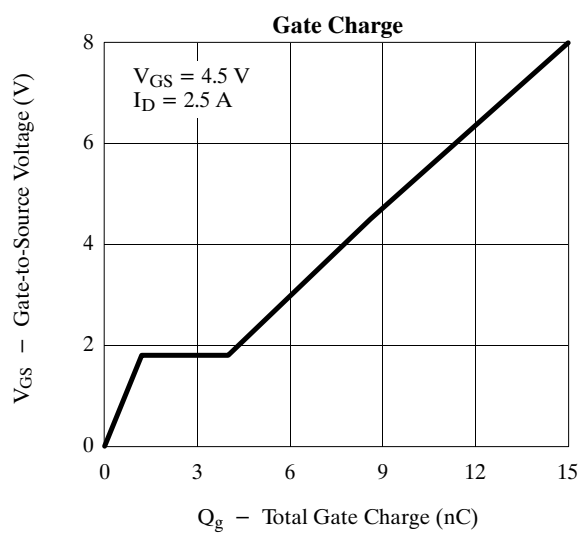
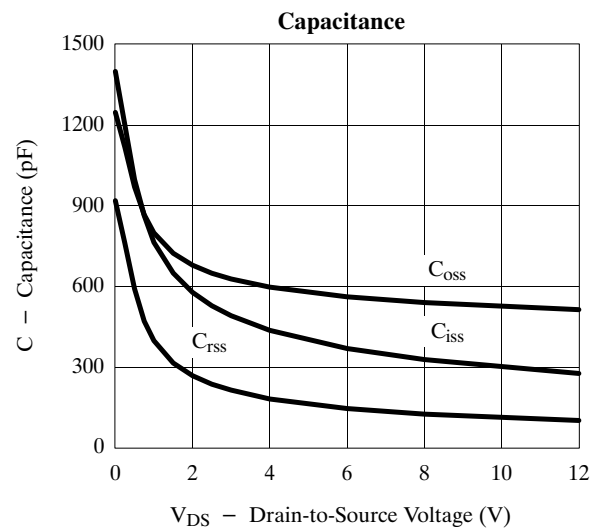
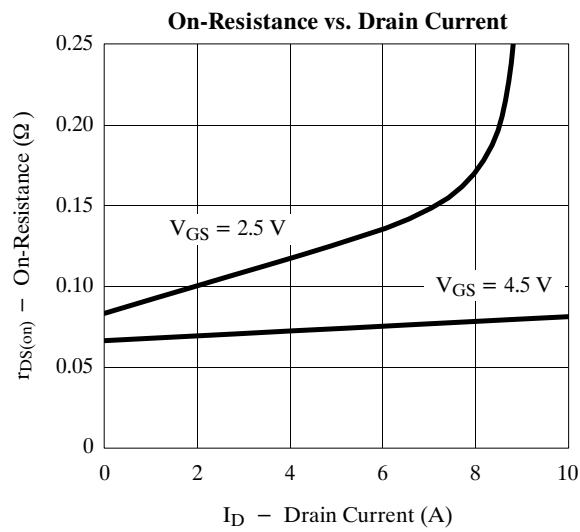
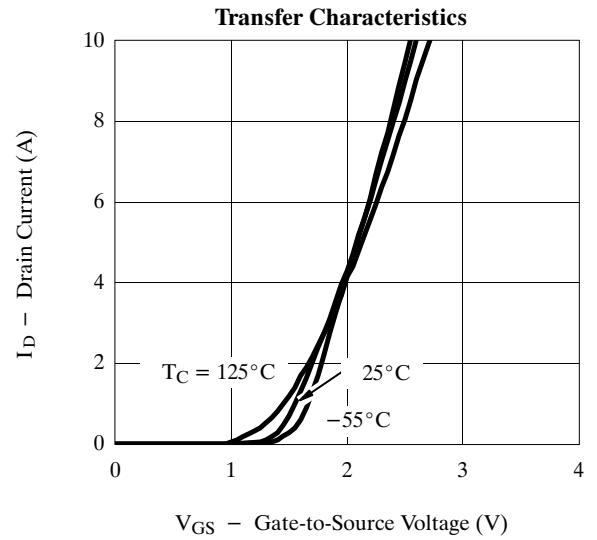
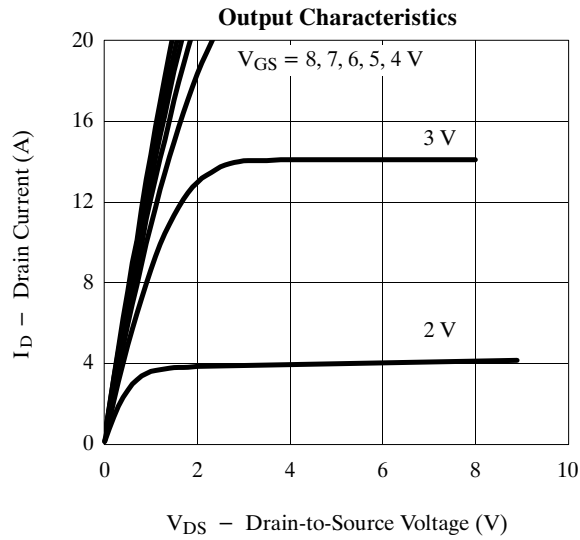
Typical Characteristics (25°C Unless Noted)

N-Channel



Typical Characteristics (25°C Unless Noted)

P-Channel



Typical Characteristics (25°C Unless Noted)

P-Channel

