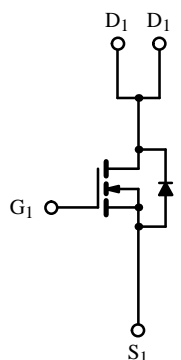
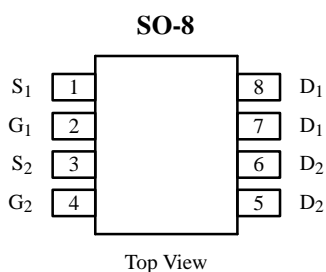


Dual N- and P-Channel 60-V, 175°C Rated MOSFET

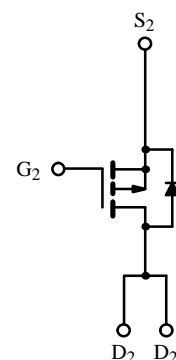
Product Summary

	V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
N-Channel	60	0.055 @ V _{GS} = 10 V	±4.5
		0.075 @ V _{GS} = 4.5 V	±3.9
P-Channel	-60	0.120 @ V _{GS} = -10 V	±3.1
		0.150 @ V _{GS} = -4.5 V	±2.8

175°C Rated
Maximum Junction Temperature
TrenchFET™
Power MOSFETs



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}	60	-60	V
Gate-Source Voltage	V _{GS}	±20	±20	
Continuous Drain Current (T _J = 175°C) ^a	I _D	T _A = 25°C	±4.5	±3.1
		T _A = 70°C	±3.8	±2.6
Pulsed Drain Current	I _{DM}	±30	±30	A
Continuous Source Current (Diode Conduction) ^a	I _S	2.0	-2.0	
Maximum Power Dissipation ^a	P _D	T _A = 25°C	2.4	
		T _A = 70°C	1.7	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 175		°C

Thermal Resistance Ratings

Parameter	Symbol	N- or P- Channel	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	62.5	°C/W

Notes

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

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70167.

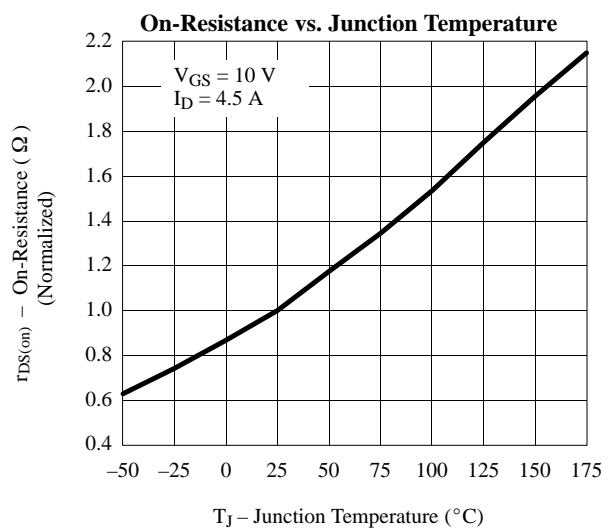
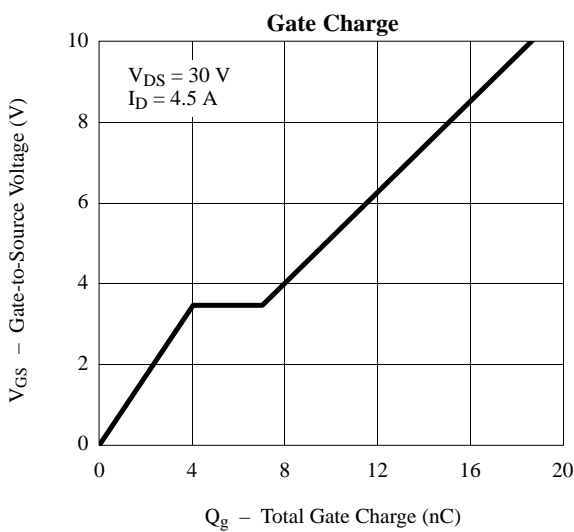
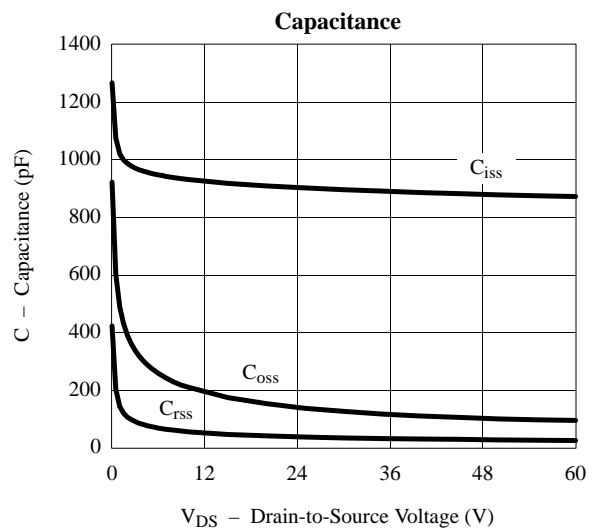
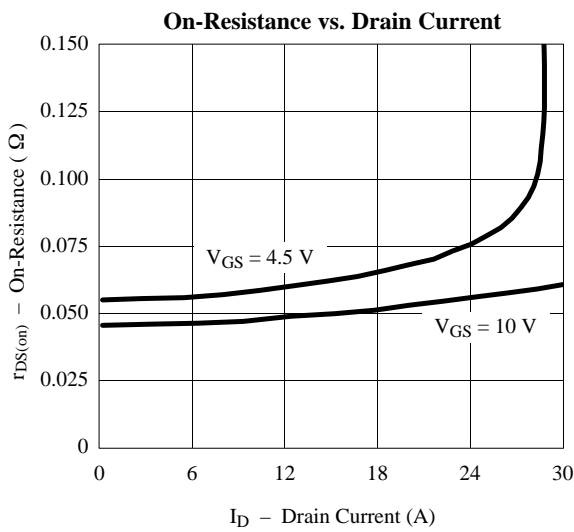
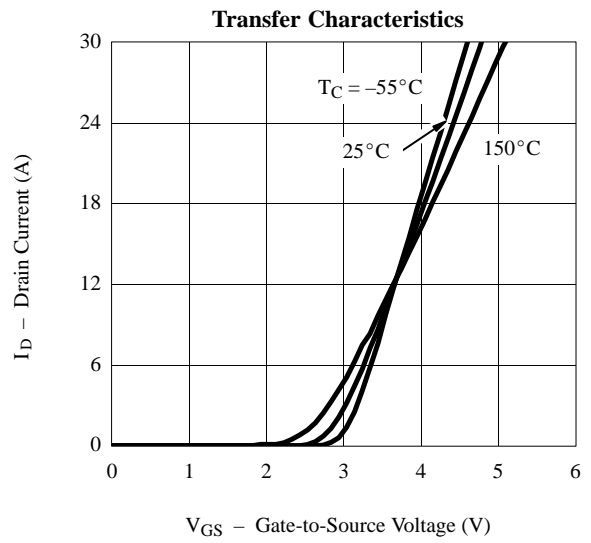
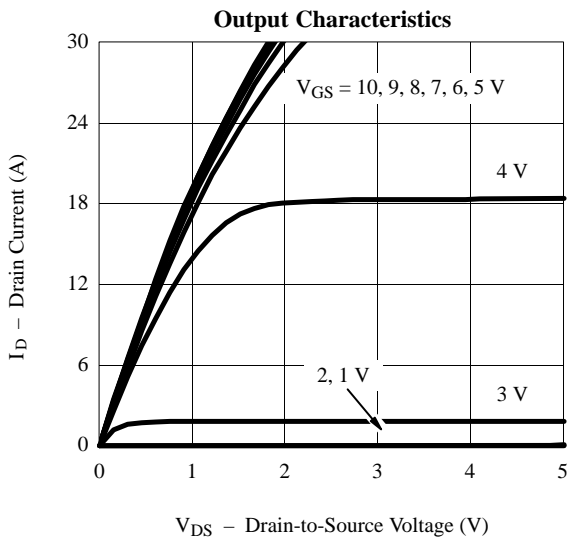
Specifications (T_J = 25°C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit	
Static							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	1		V	
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-1			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V	N-Ch		±100	nA	
			P-Ch		±100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0 V	N-Ch		2	μA	
		V _{DS} = -60 V, V _{GS} = 0 V	P-Ch		-2		
		V _{DS} = 60 V, V _{GS} = 0 V, T _J = 55°C	N-Ch		25		
		V _{DS} = -60 V, V _{GS} = 0 V, T _J = 55°C	P-Ch		-25		
On-State Drain Current ^b	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	N-Ch	20		A	
		V _{DS} ≤ -5 V, V _{GS} = -10 V	P-Ch	-20			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 4.5 A	N-Ch		0.045	0.055	Ω
		V _{GS} = -10 V, I _D = -3.1 A	P-Ch		0.100	0.120	
		V _{GS} = 4.5 V, I _D = 3.9 A	N-Ch		0.055	0.075	
		V _{GS} = -4.5 V, I _D = -2.8 A	P-Ch		0.125	0.150	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 4.5 A	N-Ch		13	S	
		V _{DS} = -15 V, I _D = -3.1 A	P-Ch		7.5		
Diode Forward Voltage ^b	V _{SD}	I _S = 2.0 A, V _{GS} = 0 V	N-Ch		0.9	1.2	V
		I _S = -2.0 A, V _{GS} = 0 V	P-Ch		-0.8	-1.2	
Dynamic^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 30 V, V _{GS} = 10 V, I _D = 4.5 A P-Channel V _{DS} = -30 V, V _{GS} = -10 V I _D = -3.1A	N-Ch		19	30	nC
Gate-Source Charge	Q _{gs}		N-Ch		4		
Gate-Drain Charge	Q _{gd}		P-Ch		4		
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 30 V, R _L = 30 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω P-Channel V _{DD} = -30 V, R _L = 30 Ω I _D ≅ -1 A, V _{GEN} = -10 V, R _G = 6 Ω	N-Ch		13	20	ns
Rise Time	t _r		P-Ch		8	15	
			N-Ch		11	20	
Turn-Off Delay Time	t _{d(off)}		P-Ch		10	20	
			N-Ch		36	60	
Fall Time	t _f		P-Ch		12	25	
			N-Ch		11	20	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 2 A, di/dt = 100 A/μs	N-Ch		35	
		I _F = -2 A, di/dt = 100 A/μs	P-Ch		60	90	

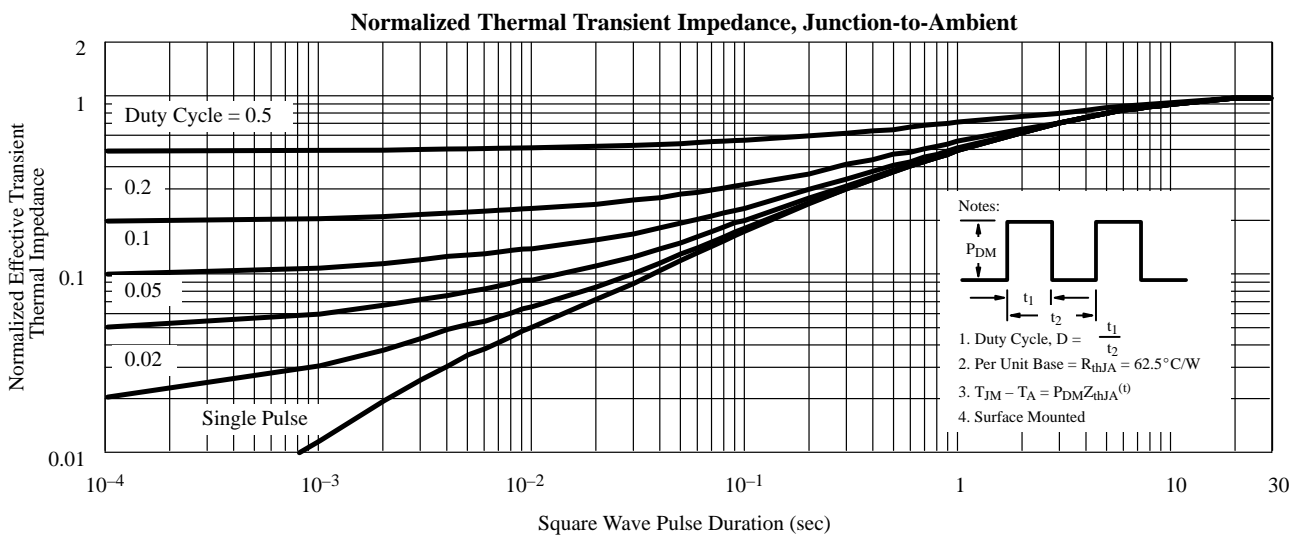
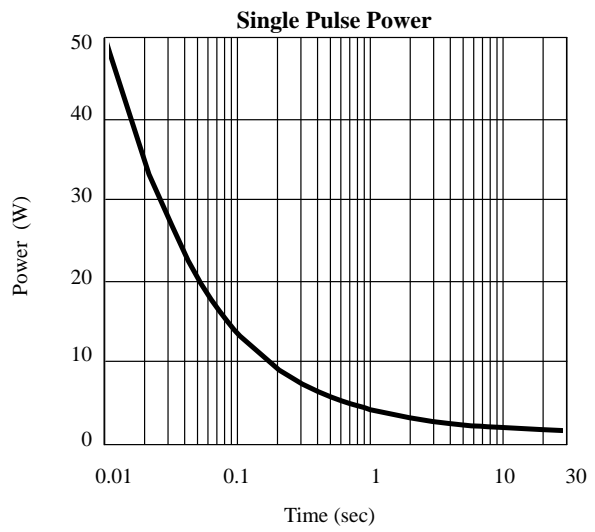
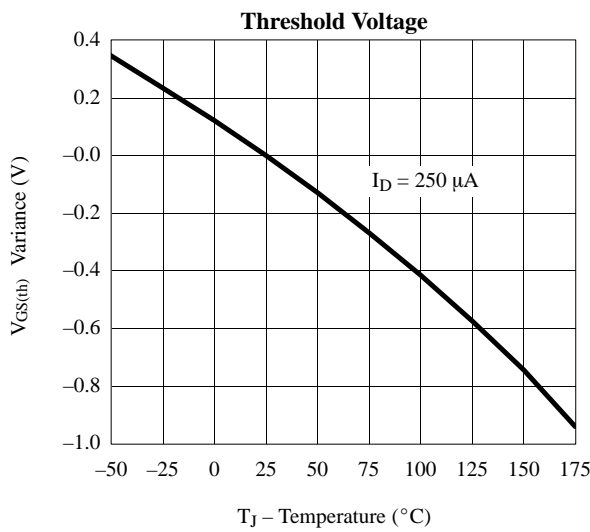
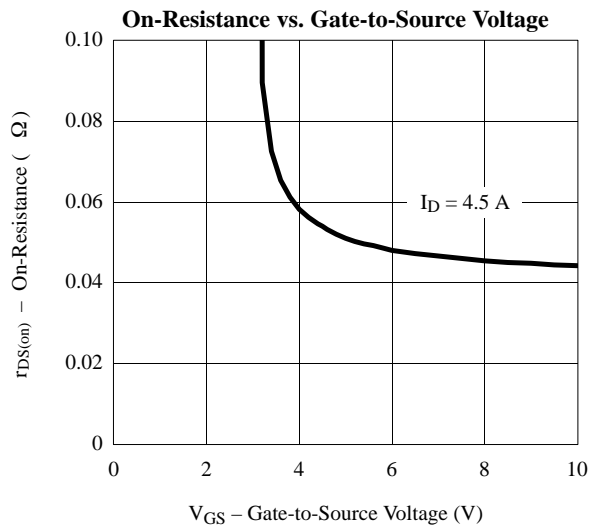
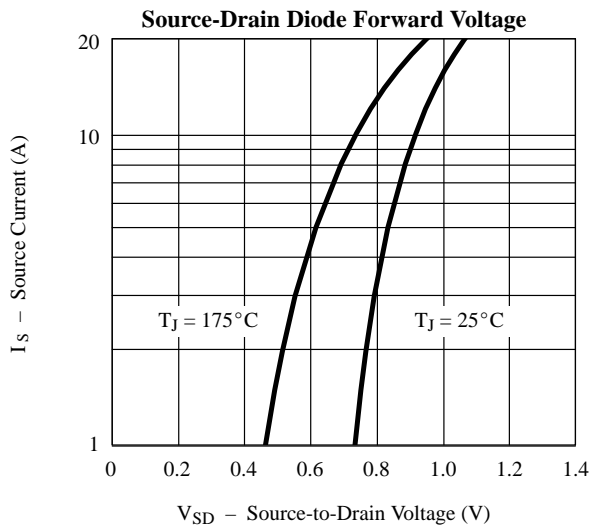
Notes

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

Typical Characteristics (25°C Unless Otherwise Noted) N-Channel

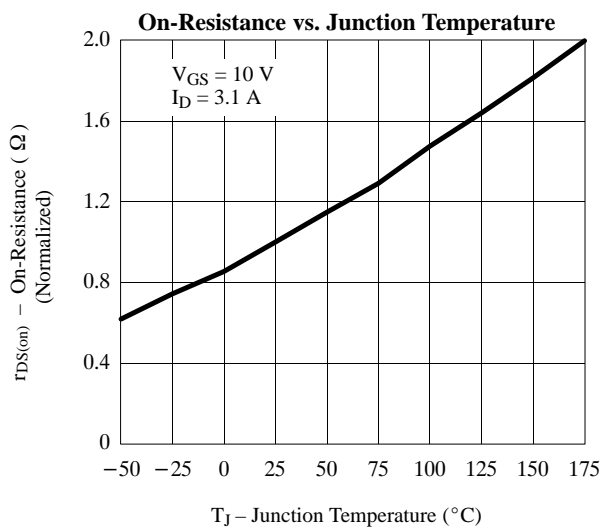
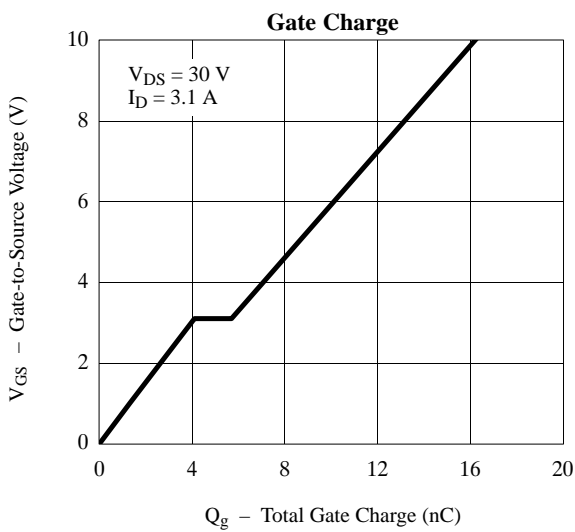
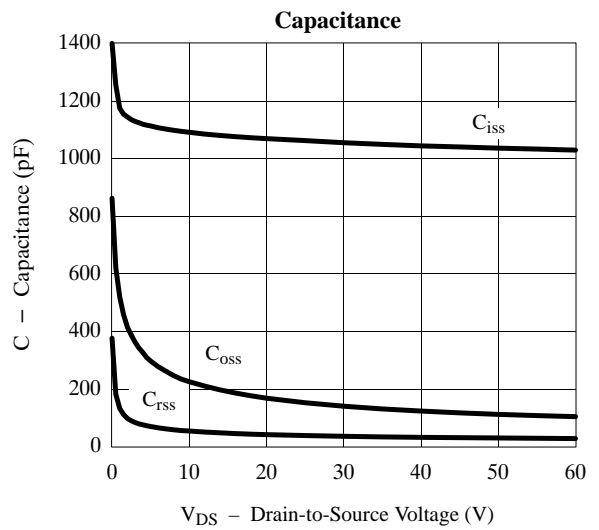
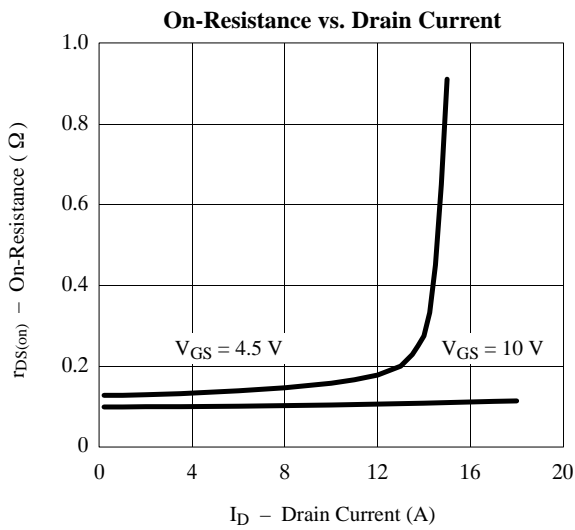
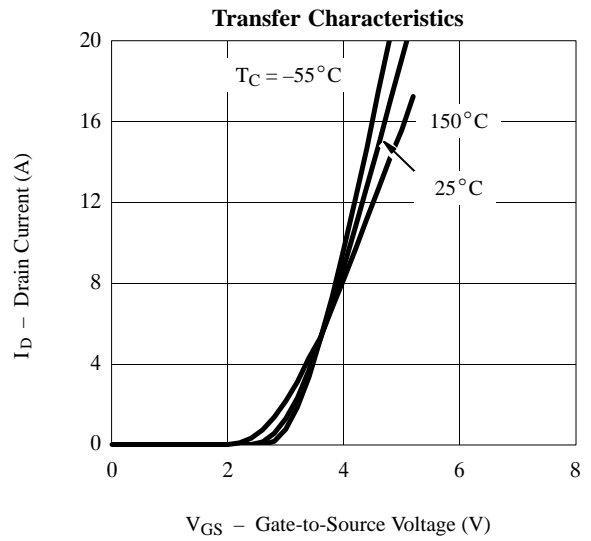
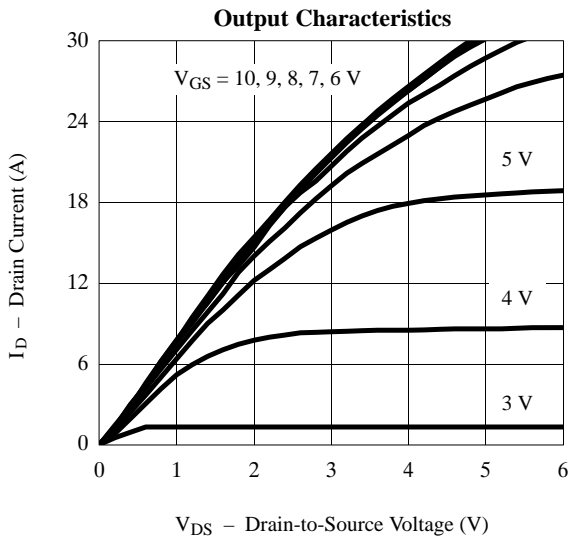


Typical Characteristics (25°C Unless Otherwise Noted) N-Channel



Typical Characteristics (25°C Unless Noted)

P-Channel



Typical Characteristics (25°C Unless Noted)

P-Channel

