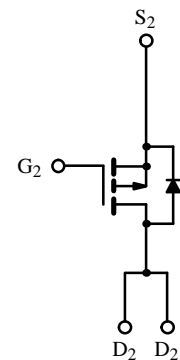
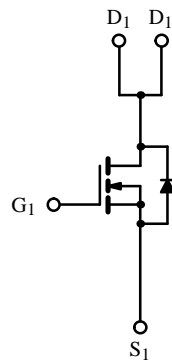
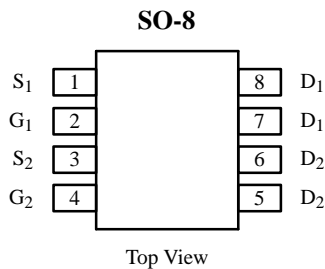


Dual N- and P-Channel 2.5-V (G-S) Rated MOSFET

Product Summary

	V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
N-Channel	20	0.03 @ V _{GS} = 4.5 V	± 6
		0.04 @ V _{GS} = 2.5 V	± 5.2
P-Channel	-12	0.05 @ V _{GS} = -4.5 V	± 5
		0.074 @ V _{GS} = -2.5 V	± 4.1

2.5-V Rated



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	± 8	
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	± 6	A
		T _A = 70°C	± 4.8	
Pulsed Drain Current	I _{DM}	± 20	± 20	A
Continuous Source Current (Diode Conduction) ^a	I _S	1.7	-1.7	
Maximum Power Dissipation ^a	P _D	T _A = 25°C	2.0	W
		T _A = 70°C	1.3	
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}	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 #70161.

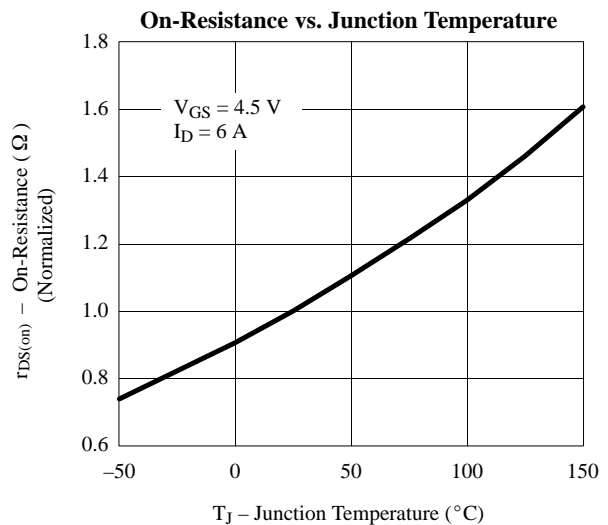
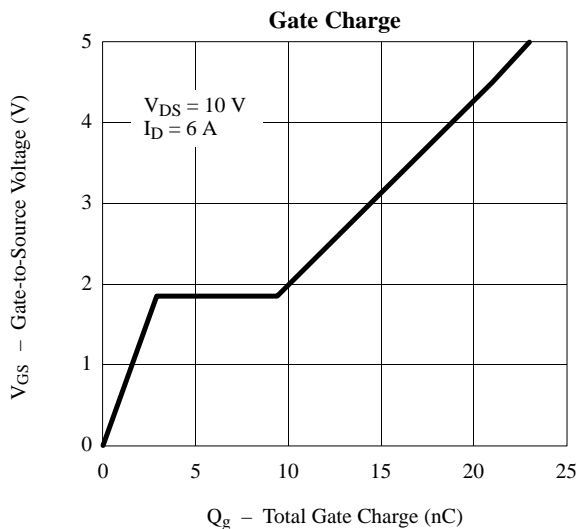
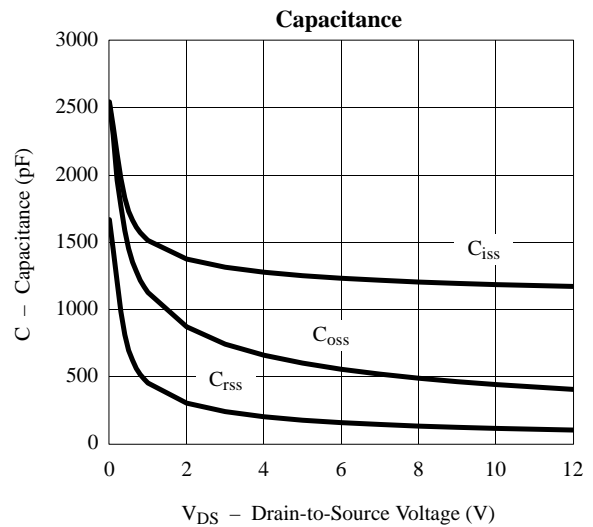
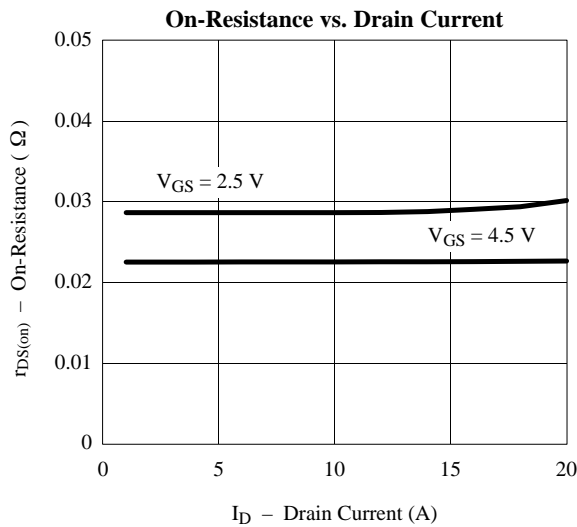
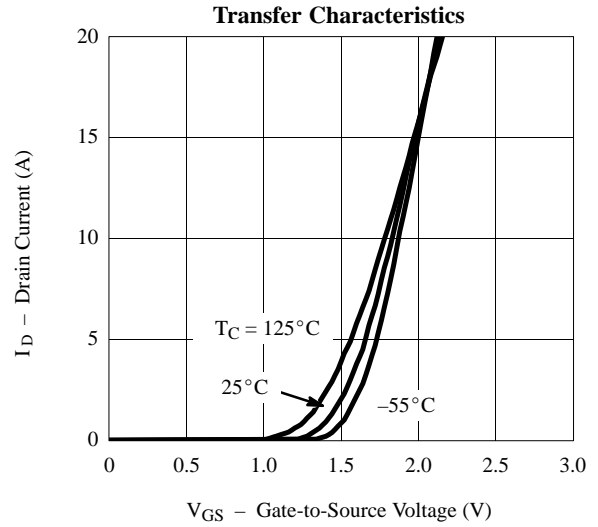
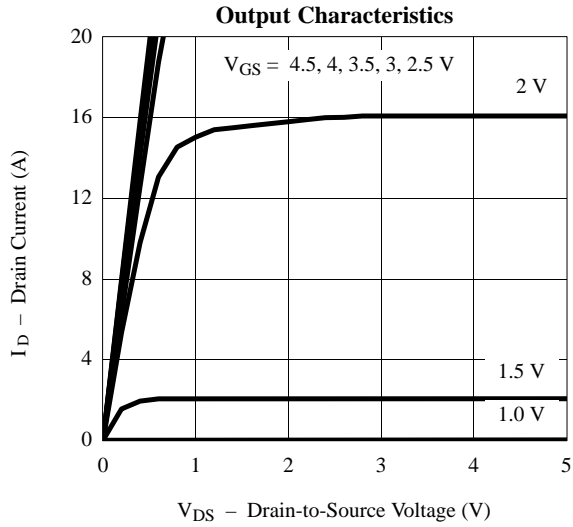
Specifications (T_J = 25°C Unless Otherwise Noted)

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	0.6		V	
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-0.6			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V	N-Ch		±100	nA	
			P-Ch		±100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V	N-Ch		1	μA	
		V _{DS} = -12 V, V _{GS} = 0 V	P-Ch		-1		
		V _{DS} = 20 V, V _{GS} = 0 V, T _J = 55°C	N-Ch		5		
		V _{DS} = -12 V, V _{GS} = 0 V, T _J = 55°C	P-Ch		-5		
On-State Drain Current ^b	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	20		A	
		V _{DS} ≤ -5 V, V _{GS} = -4.5 V	P-Ch	-20			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 6 A	N-Ch		0.023	0.03	Ω
		V _{GS} = -4.5 V, I _D = -5 A	P-Ch		0.039	0.05	
		V _{GS} = 2.5 V, I _D = 5.2 A	N-Ch		0.028	0.04	
		V _{GS} = -2.5 V, I _D = -4.1 A	P-Ch		0.051	0.074	
Forward Transconductance ^b	g _{fs}	V _{DS} = 10 V, I _D = 6 A	N-Ch		24	S	
		V _{DS} = -9 V, I _D = -5 A	P-Ch		16		
Diode Forward Voltage ^b	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V	N-Ch		0.75	1.2	V
		I _S = -1.7 A, V _{GS} = 0 V	P-Ch		-0.75	-1.2	
Dynamic^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 6 A	N-Ch		21	40	nC
Gate-Source Charge	Q _{gs}		P-Ch		21	40	
Gate-Drain Charge	Q _{gd}	P-Channel V _{DS} = -6 V, V _{GS} = -4.5 V, I _D = -5A	N-Ch		2.9		nC
			P-Ch		3		
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω	N-Ch		6.5		nC
			P-Ch		6		
Rise Time	t _r	P-Channel V _{DD} = -10 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω	N-Ch		30	60	ns
			P-Ch		20	40	
Turn-Off Delay Time	t _{d(off)}	N-Channel V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω	N-Ch		70	140	ns
			P-Ch		40	80	
Fall Time	t _f	P-Channel V _{DD} = -10 V, R _L = 10 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω	N-Ch		70	140	ns
			P-Ch		100	200	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.7 A, di/dt = 100 A/μs	N-Ch		30	60	ns
		I _F = -1.7 A, di/dt = 100 A/μs	P-Ch		60	120	
			N-Ch		70	100	
			P-Ch		67	100	

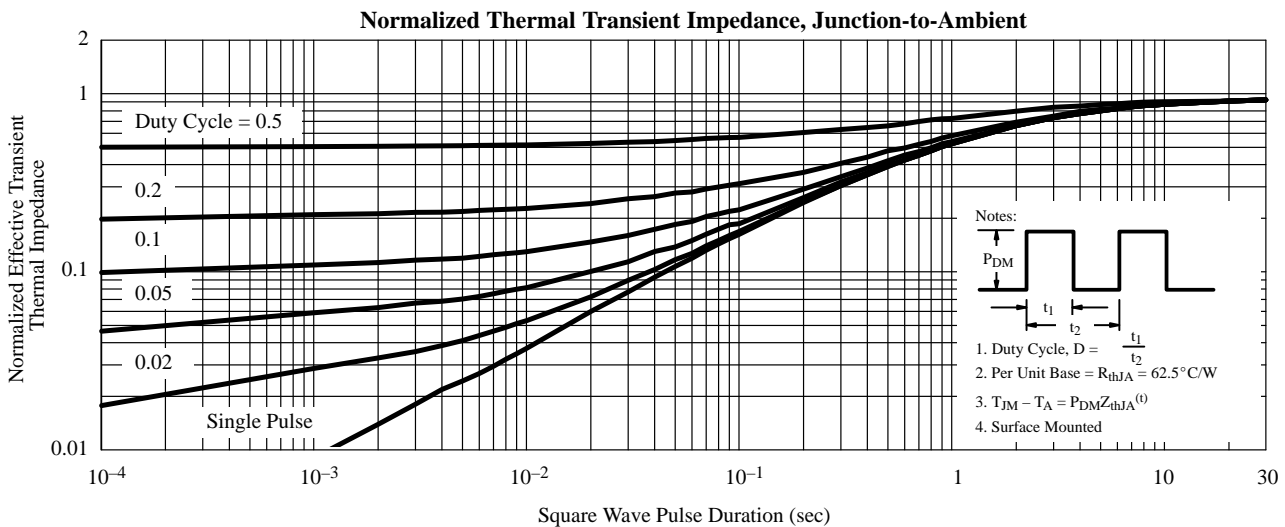
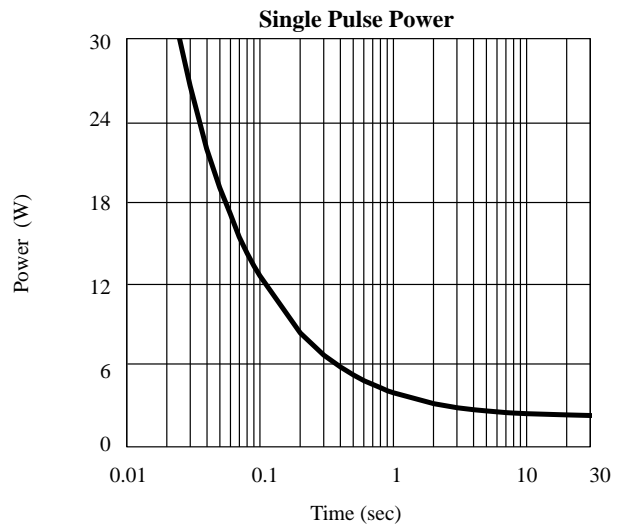
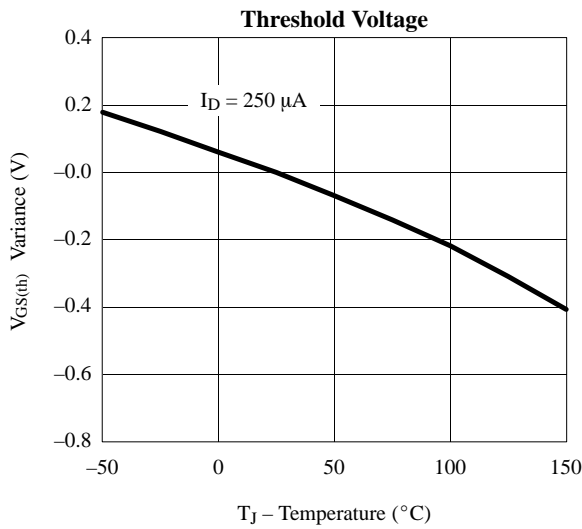
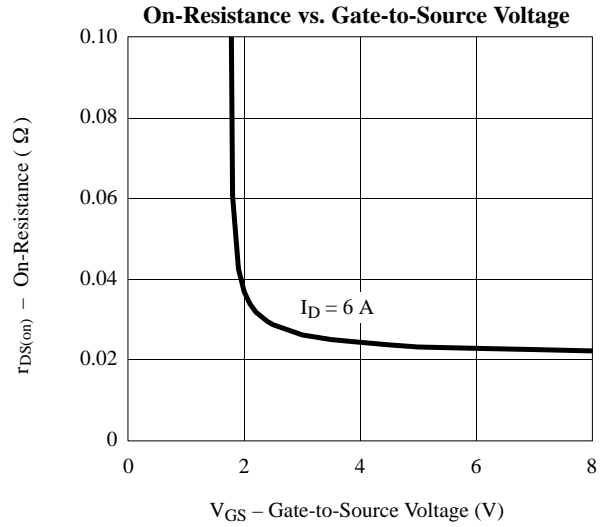
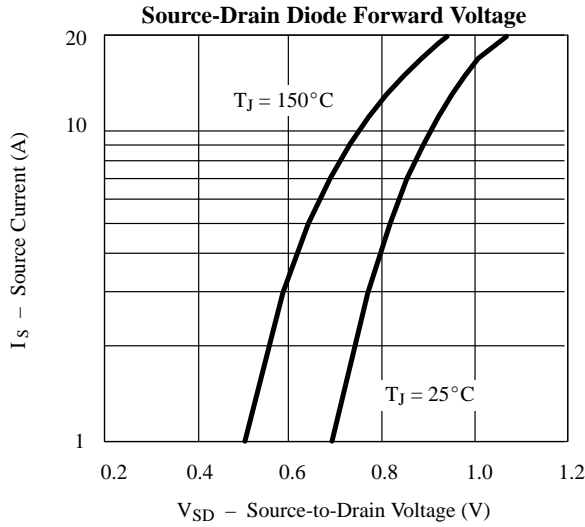
Notes

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

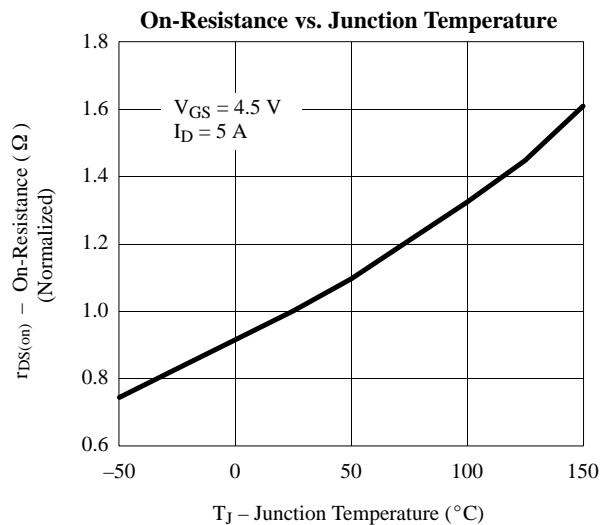
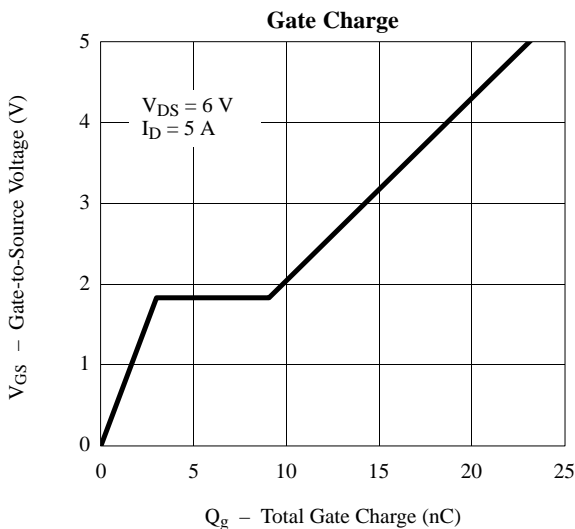
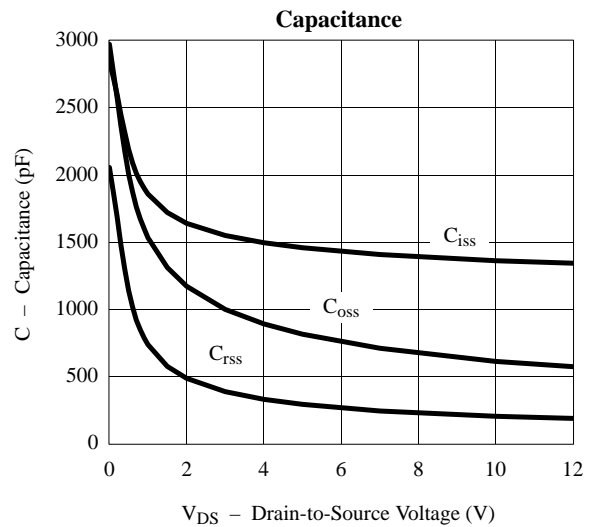
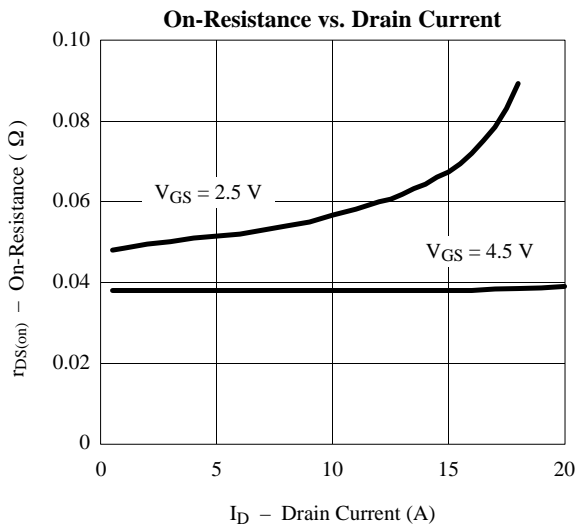
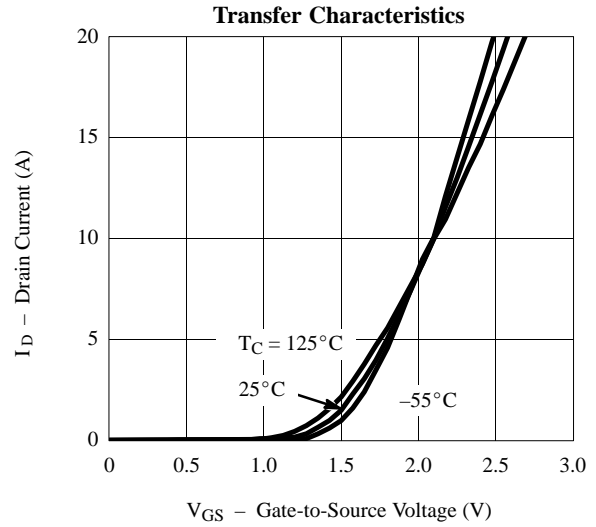
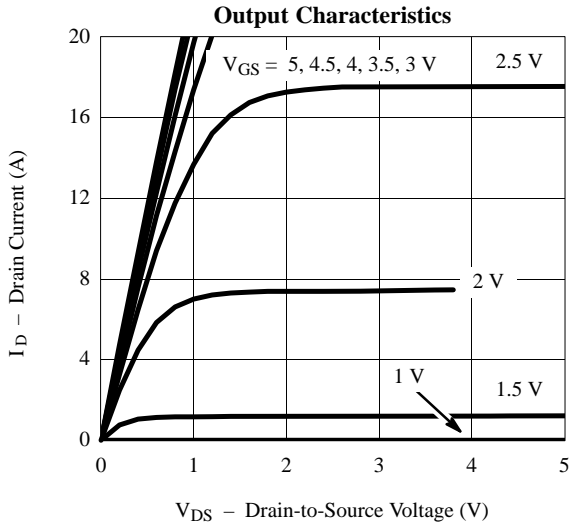
Typical Characteristics (25°C Unless Otherwise Noted) N-Channel



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



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



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

