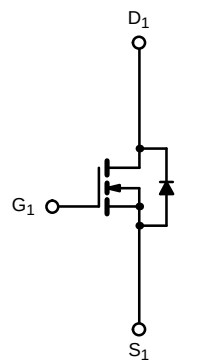
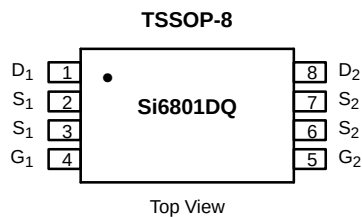




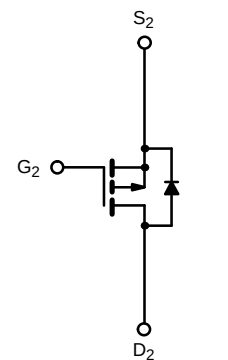
N- and P-Channel, Reduced Q_g , Fast Switching MOSFET

High-Efficiency
PWM Optimized

PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	20	0.160 @ $V_{GS} = 4.5$ V	± 1.9
		0.260 @ $V_{GS} = 3.0$ V	± 1.5
P-Channel	-20	0.190 @ $V_{GS} = -4.5$ V	± 1.7
		0.280 @ $V_{GS} = -3.0$ V	± 1.3



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	−20	V
Gate-Source Voltage		V _{GS}	± 12		
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 25 °C	I _D	± 1.9	± 1.7	A
	T _A = 70 °C		± 1.5	± 1.3	
Pulsed Drain Current		I _{DM}	± 8		
Continuous Source Current (Diode Conduction) ^a		I _S	1.0	−1.0	
Maximum Power Dissipation ^a	T _A = 25 °C	P _D	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	$^\circ\text{C/W}$

Notes

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

SPECIFICATIONS (T _J = 25 °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 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} = ±12 V	N-Ch P-Ch			±100 ±100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V	N-Ch			1	μA	
		V _{DS} = −20 V, V _{GS} = 0 V	P-Ch			−1		
		V _{DS} = 20 V, V _{GS} = 0 V, T _J = 70 °C	N-Ch			25		
		V _{DS} = −20 V, V _{GS} = 0 V, T _J = 70 °C	P-Ch			−25		
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	N-Ch	6			A	
		V _{DS} = −5 V, V _{GS} = −4.5 V	P-Ch	−6				
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 1.9 A	N-Ch		0.120	0.160	Ω	
		V _{GS} = −4.5 V, I _D = −1.7 A	P-Ch		0.155	0.190		
		V _{GS} = 3.0 V, I _D = 1.5 A	N-Ch		0.160	0.260		
		V _{GS} = −3.0 V, I _D = −1.3 A	P-Ch		0.210	0.280		
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 1.9 A	N-Ch		5.4		S	
		V _{DS} = −15 V, I _D = −1.7 A	P-Ch		4.0			
Diode Forward Voltage ^a	V _{SD}	I _S = 1.0 A, V _{GS} = 0 V	N-Ch		0.77	1.2	V	
		I _S = −1.0 A, V _{GS} = 0 V	P-Ch		−0.77	−1.2		
Dynamic ^b								
Total Gate Charge	Q _g	N-Channel V _{DS} = 3.5 V, V _{GS} = 4.5 V, I _D = 0.3 A P-Channel V _{DS} = −3.5 V, V _{GS} = −4.5 V I _D = −0.3 A	N-Ch P-Ch		1.7 3.5	3.5 7.0	nC	
Gate-Source Charge	Q _{gs}		N-Ch P-Ch		0.26 0.76			
Gate-Drain Charge	Q _{gd}		N-Ch P-Ch		0.41 0.70			
Turn-On Delay Time	t _{d(on)}	N-Channel V _{DD} = 3.5 V, R _L = 11.5 Ω I _D ≅ 0.3 A, V _{GEN} = 4.5 V, R _G = 6 Ω P-Channel V _{DD} = −3.5 V, R _L = 11.5 Ω I _D ≅ −0.3 A, V _{GEN} = −4.5 V, R _G = 6 Ω	N-Ch P-Ch		7.3 6.0	15 15	ns	
Rise Time	t _r		N-Ch P-Ch		10.0 10.0	20.0 20.0		
Turn-Off Delay Time	t _{d(off)}		N-Ch P-Ch		11.0 10.0	20.0 20.0		
Fall Time	t _f		N-Ch P-Ch		6.0 7.0	15 15		
Source-Drain Reverse Recovery Time	t _{rr}		N-Channel—I _F = 1.0 A, di/dt = 100 A/μs	N-Ch		31		60
			P-Channel—I _F = −1.0 A, di/dt = 100 A/μs	P-Ch		35		60

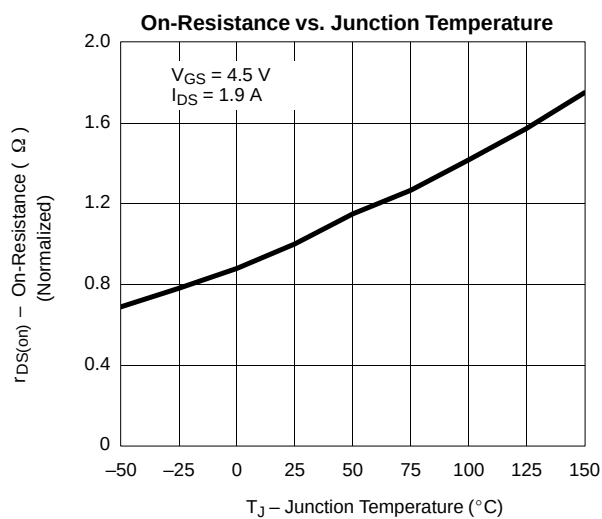
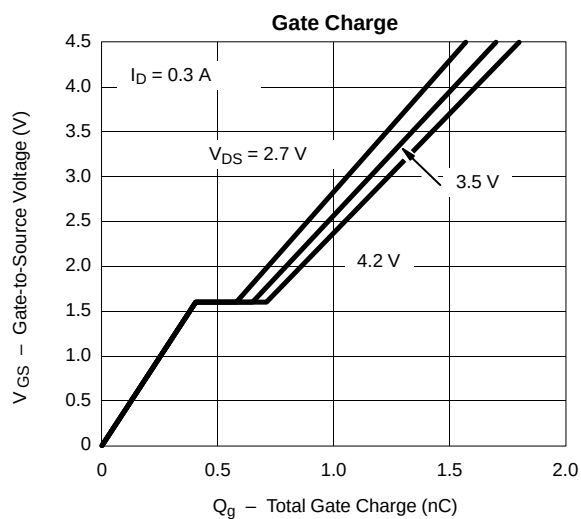
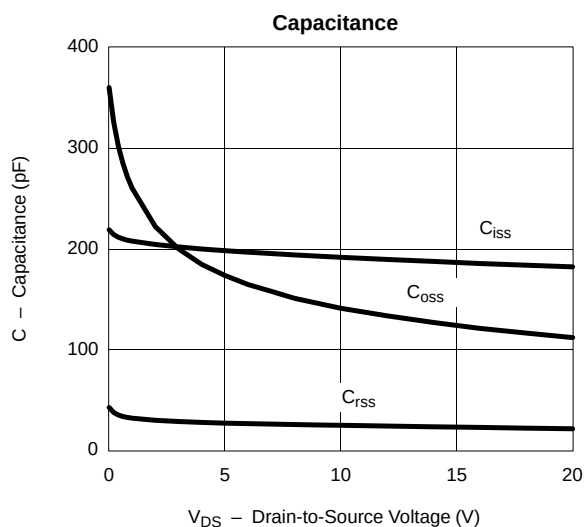
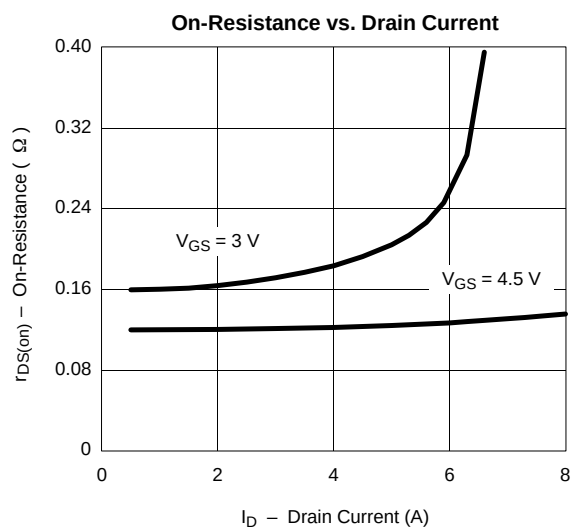
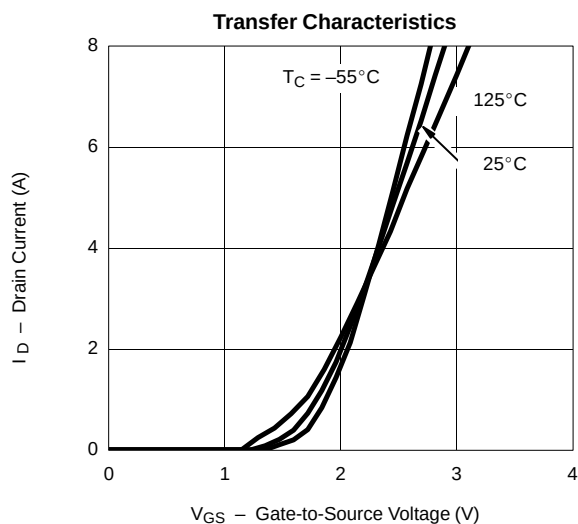
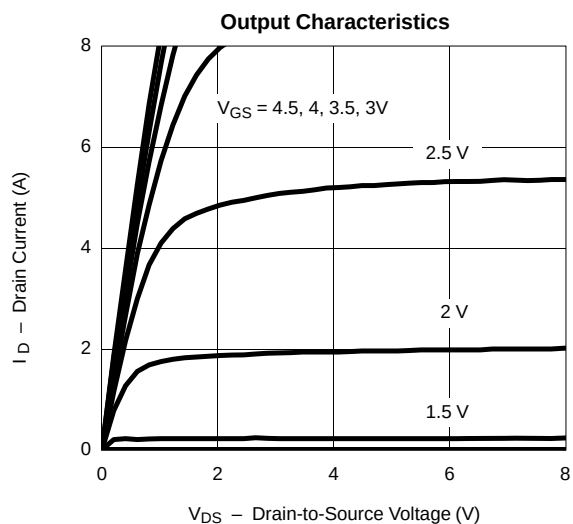
Notes

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



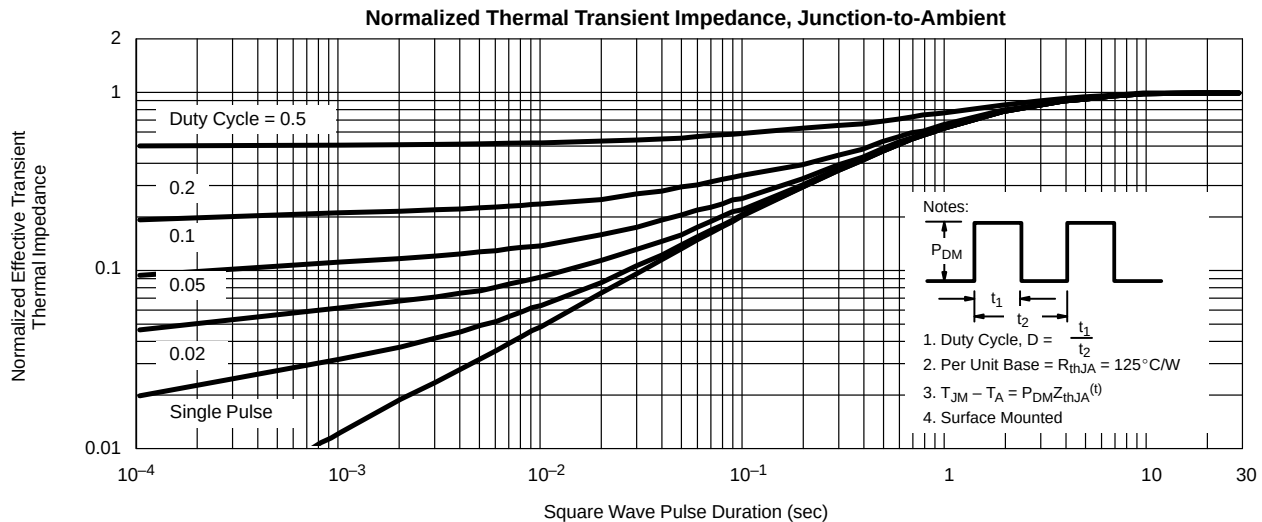
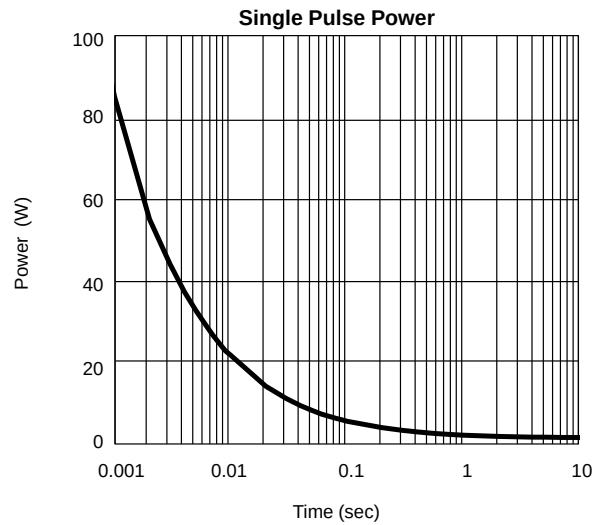
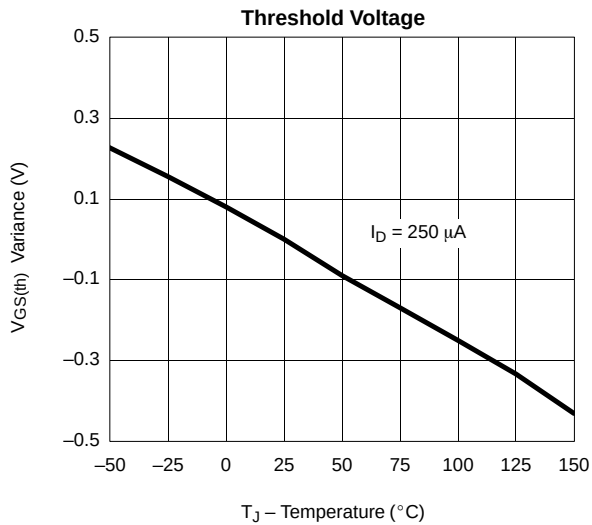
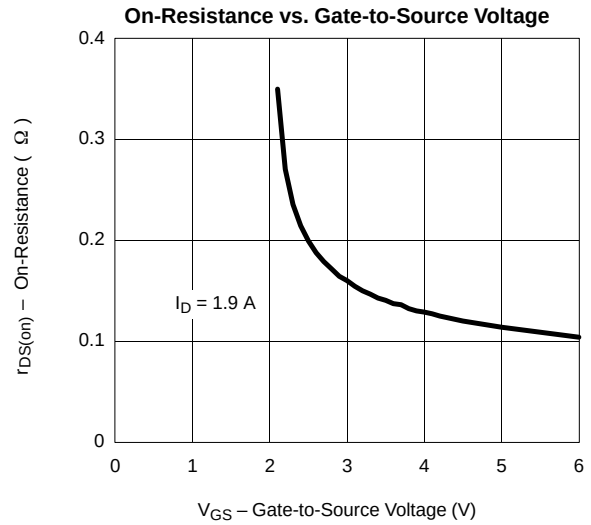
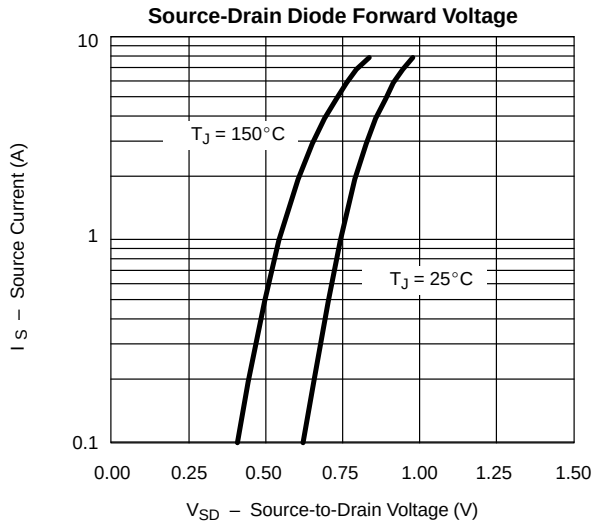
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

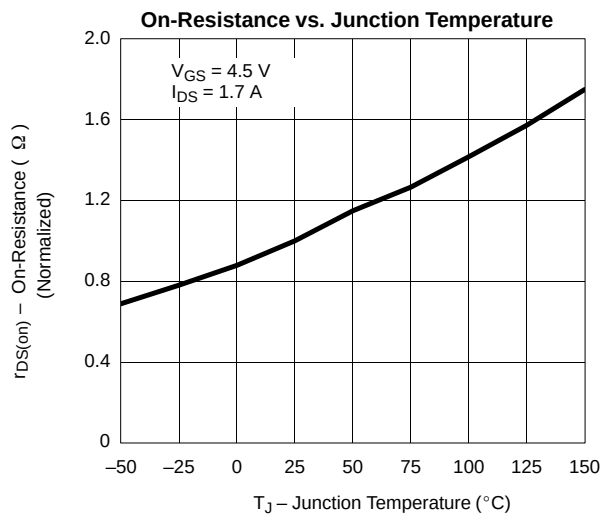
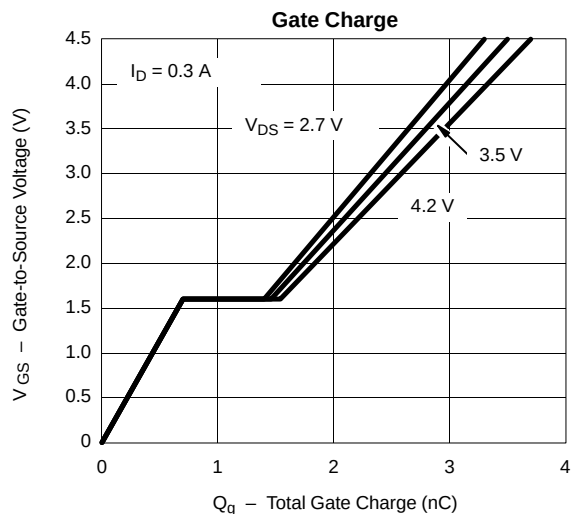
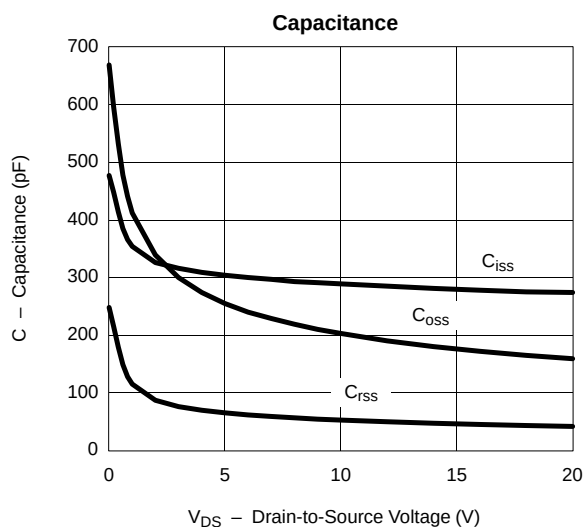
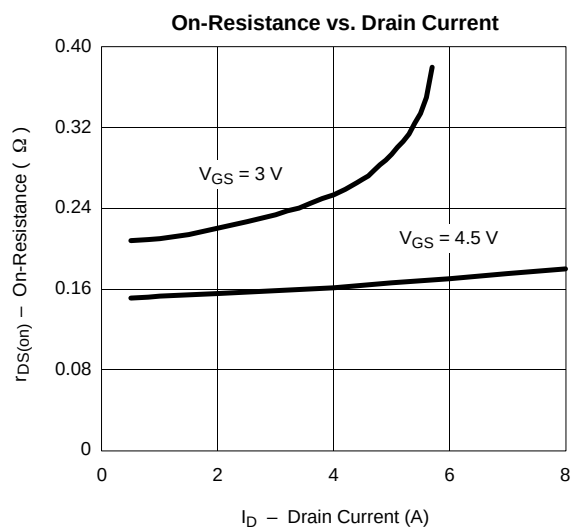
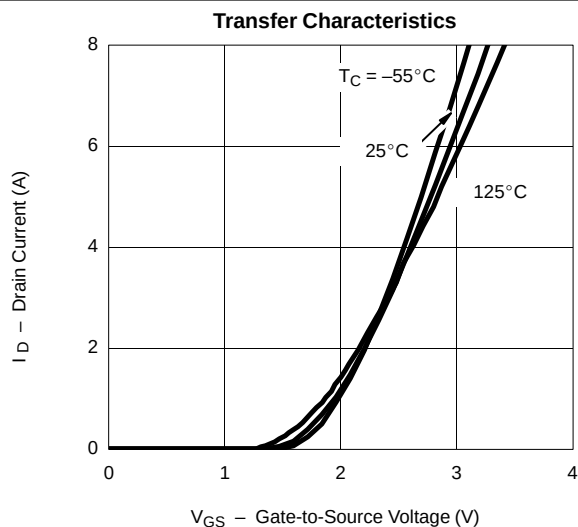
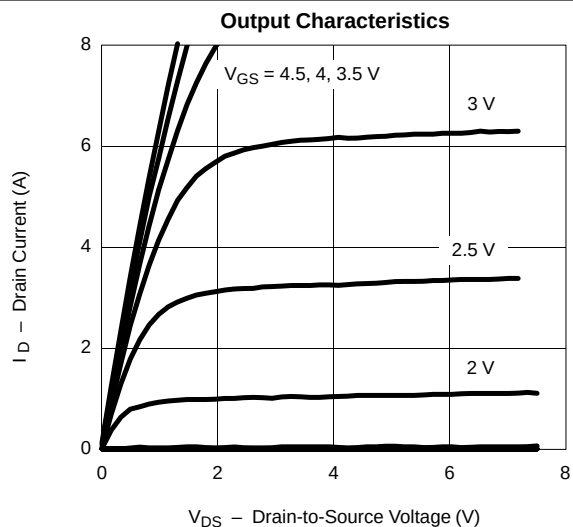
N-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL

