

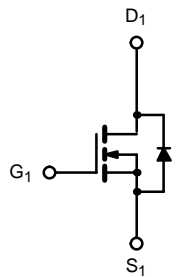
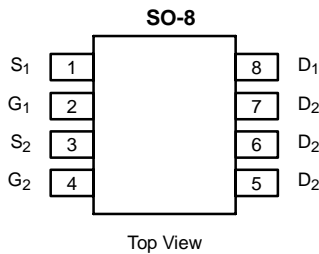


Asymmetrical Dual N-Channel 30-V (D-S) MOSFET

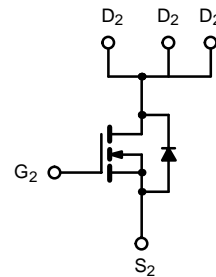
PRODUCT SUMMARY			
	V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
Channel-1	30	0.022 @ V _{GS} = 10 V	6.3
		0.030 @ V _{GS} = 4.5 V	5.4
Channel-2		0.0155 @ V _{GS} = 10 V	9.5
		0.0205 @ V _{GS} = 4.5 V	8.2

FEATURES

- 100% R_g Tested



N-Channel 1
MOSFET



N-Channel 2
MOSFET

Ordering Information: Si4826DY
Si4826DY-T1 (with Tape and Reel)

ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Channel 1		Channel 2		Unit	
		10 secs	Steady State	10 secs	Steady State		
Drain-Source Voltage	V _{DS}	30				V	
Gate-Source Voltage	V _{GS}	20					
Continuous Drain Current (T _J = 150°C) ^{NO TAG}	I _D	T _A = 25 °C	6.3	5.3	9.5	7.0	A
		T _A = 70 °C	5.4	4.2	7.6	5.6	
Pulsed Drain Current	I _{DM}	30		40		W	
Continuous Source Current (Diode Conduction) ^{NO TAG}	I _S	1.3	0.9	2.2	1.15		
Maximum Power Dissipation ^{NO TAG}	P _D	T _A = 25 °C	1.4	1.0	2.4	1.25	W
		T _A = 70 °C	0.9	0.64	1.5	0.80	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150				°C	

THERMAL RESISTANCE RATINGS							
Parameter	Symbol	Channel 1		Channel 2		Unit	
		Typ	Max	Typ	Max		
Maximum Junction-to-Ambient ^{NO TAG}	R _{thJA}	t ≤ 10 sec	72	90	43	53	°C/W
		Steady-State	100	125	82	100	
Maximum Junction-to-Foot (Drain)	R _{thJC}	51	63	25	30		

Notes
a. Surface Mounted on 1" x 1" FR4 Board.

MOSFET SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED).							
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Static							
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	Ch-1	0.8		V	
			Ch-2	1.0			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = 20\ \text{V}$	Ch-1		100	nA	
			Ch-2		100		
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24\ \text{V}$, $V_{GS} = 0\ \text{V}$	Ch-1		1	μA	
			Ch-2		1		
		$V_{DS} = 24\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 85^\circ\text{C}$	Ch-1		15		
			Ch-2		15		
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5\ \text{V}$, $V_{GS} = 10\ \text{V}$	Ch-1	20		A	
			Ch-2	30			
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}$, $I_D = 6.3\ \text{A}$	Ch-1		0.018	0.022	Ω
		$V_{GS} = 10\ \text{V}$, $I_D = 9.5\ \text{A}$	Ch-2		0.0125	0.0155	
		$V_{GS} = 4.5\ \text{V}$, $I_D = 5.4\ \text{A}$	Ch-1		0.024	0.030	
		$V_{GS} = 4.5\ \text{V}$, $I_D = 8.2\ \text{A}$	Ch-2		0.0165	0.0205	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\ \text{V}$, $I_D = 6.3\ \text{A}$	Ch-1		17	S	
		$V_{DS} = 15\ \text{V}$, $I_D = 9.5\ \text{A}$	Ch-2		28		
Diode Forward Voltage ^a	V_{SD}	$I_S = 1.3\ \text{A}$, $V_{GS} = 0\ \text{V}$	Ch-1		0.7	1.1	V
		$I_S = 2.2\ \text{A}$, $V_{GS} = 0\ \text{V}$	Ch-2		0.75	1.1	
Dynamic^b							
Total Gate Charge	Q_g	Channel-1 $V_{DS} = 15\ \text{V}$, $V_{GS} = 5\ \text{V}$, $I_D = 6.3\ \text{A}$ Channel-2 $V_{DS} = 15\ \text{V}$, $V_{GS} = 5\ \text{V}$, $I_D = -9.5\ \text{A}$	Ch-1		8.0	12	nC
			Ch-2		15	23	
Gate-Source Charge	Q_{gs}		Ch-1		1.75		
			Ch-2		5.3		
Gate-Drain Charge	Q_{gd}		Ch-1		3.2		
			Ch-2		4.6		
Gate Resistance	R_g	Ch-1	1.5		5.1	Ω	
		Ch-2	0.5		2.6		
Turn-On Delay Time	$t_{d(on)}$	Channel-1 $V_{DD} = 15\ \text{V}$, $R_L = 15\ \Omega$ $I_D \cong 1\ \text{A}$, $V_{GEN} = 10\ \text{V}$, $R_G = 6\ \Omega$ Channel-2 $V_{DD} = 15\ \text{V}$, $R_L = 15\ \Omega$ $I_D \cong 1\ \text{A}$, $V_{GEN} = 10\ \text{V}$, $R_G = 6\ \Omega$	Ch-1		10	20	ns
Rise Time	t_r		Ch-2		15	30	
			Ch-1		5	10	
Turn-Off Delay Time	$t_{d(off)}$		Ch-2		5	10	
			Ch-1		26	50	
Fall Time	t_f		Ch-2		44	80	
			Ch-1		8	16	
Source-Drain Reverse Recovery Time	t_{rr}		$I_F = 1.3\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$	Ch-1		30	
		$I_F = 2.2\ \text{A}$, $di/dt = 100\ \mu\text{A}/\mu\text{s}$	Ch-2		32	70	

Notes

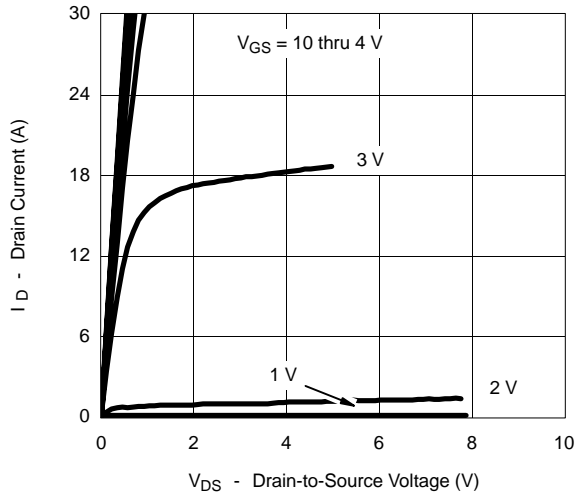
- a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
 b. Guaranteed by design, not subject to production testing.



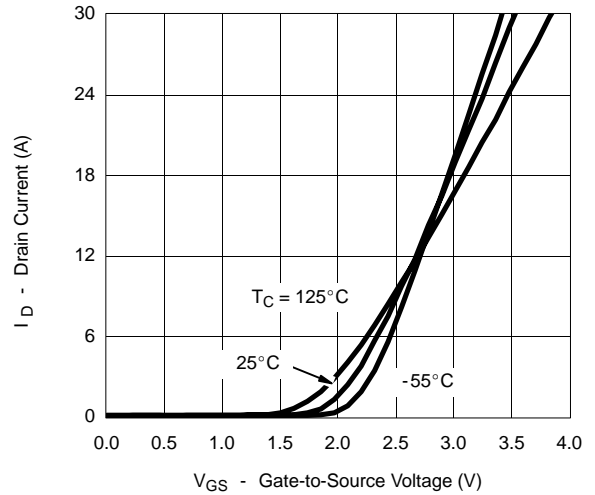
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 1

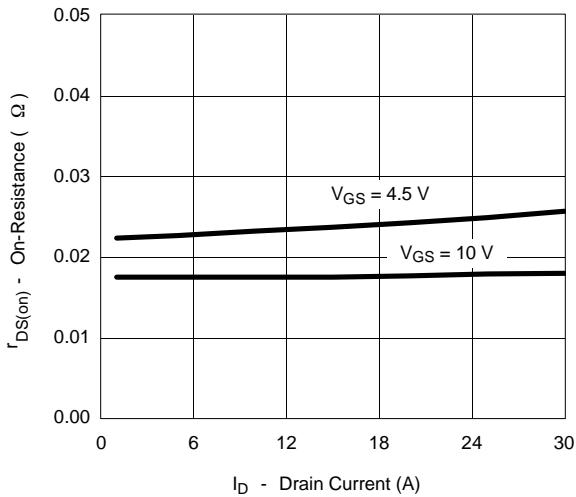
Output Characteristics



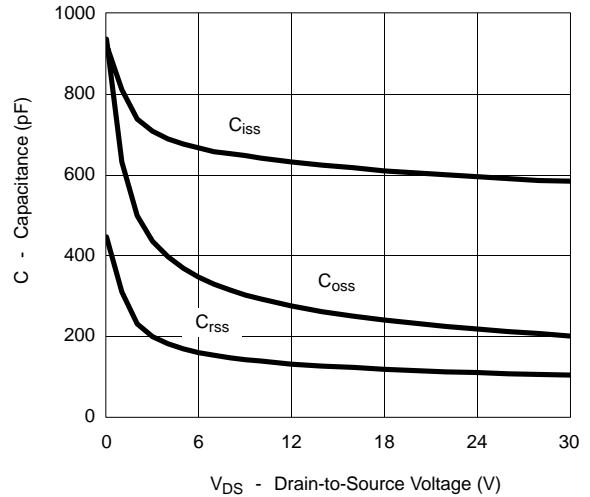
Transfer Characteristics



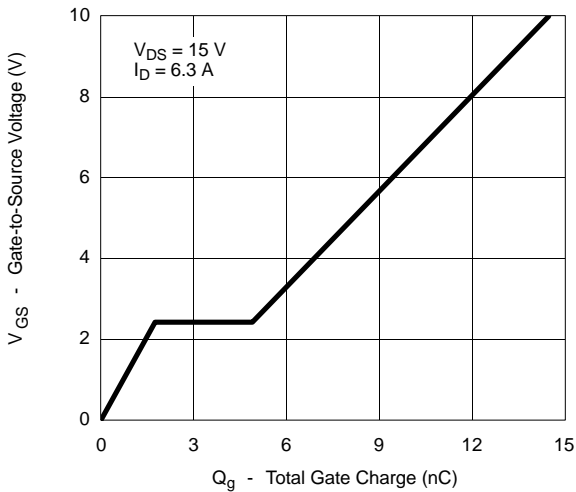
On-Resistance vs. Drain Current



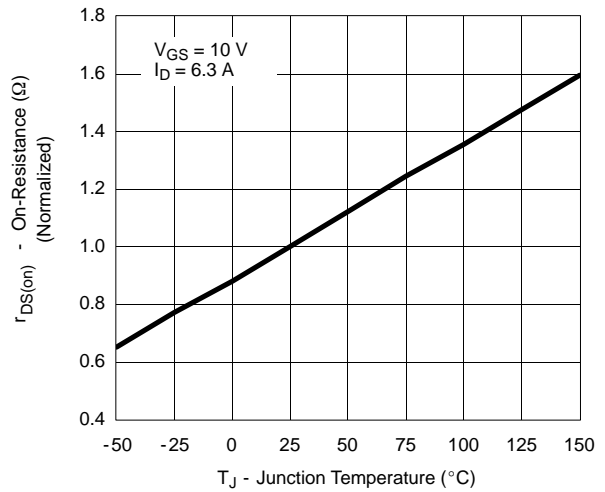
Capacitance



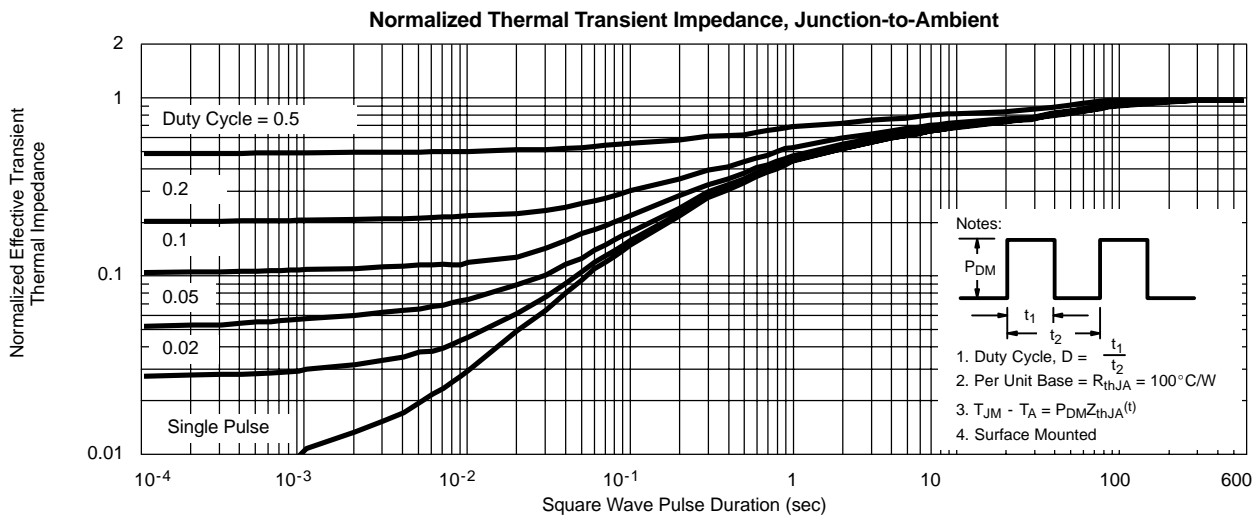
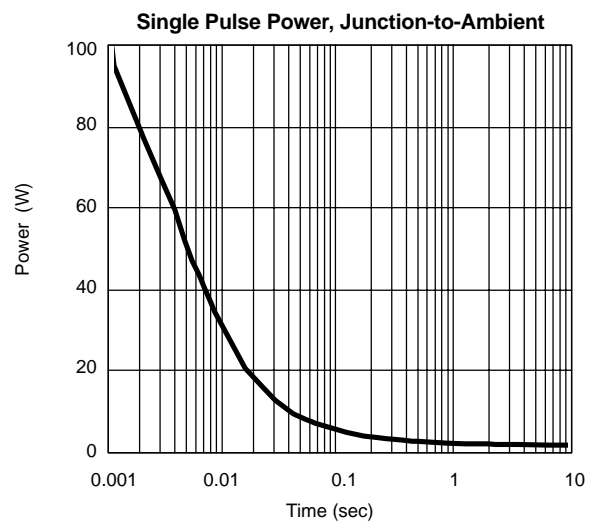
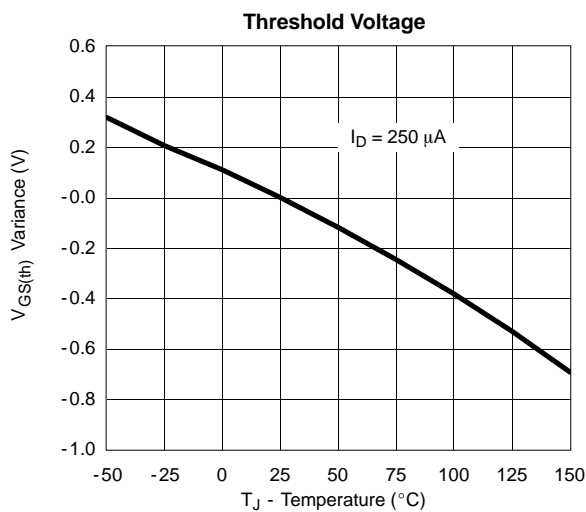
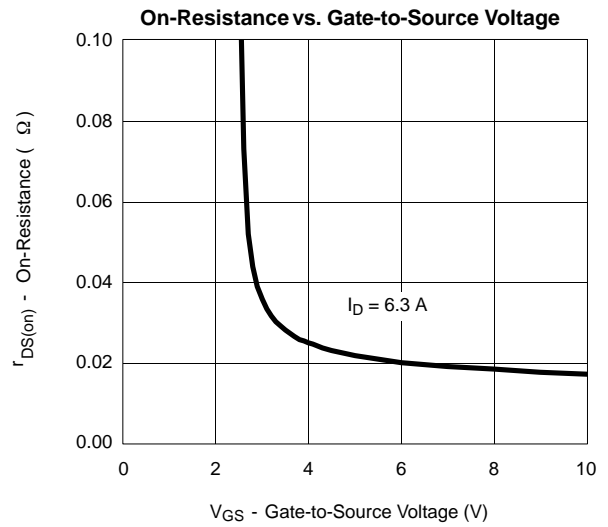
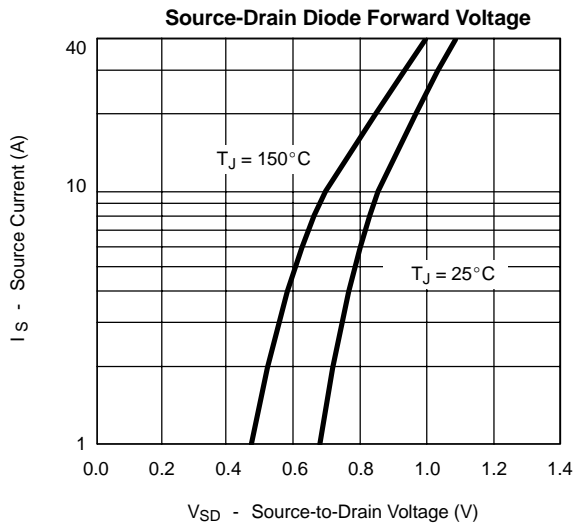
Gate Charge



On-Resistance vs. Junction Temperature



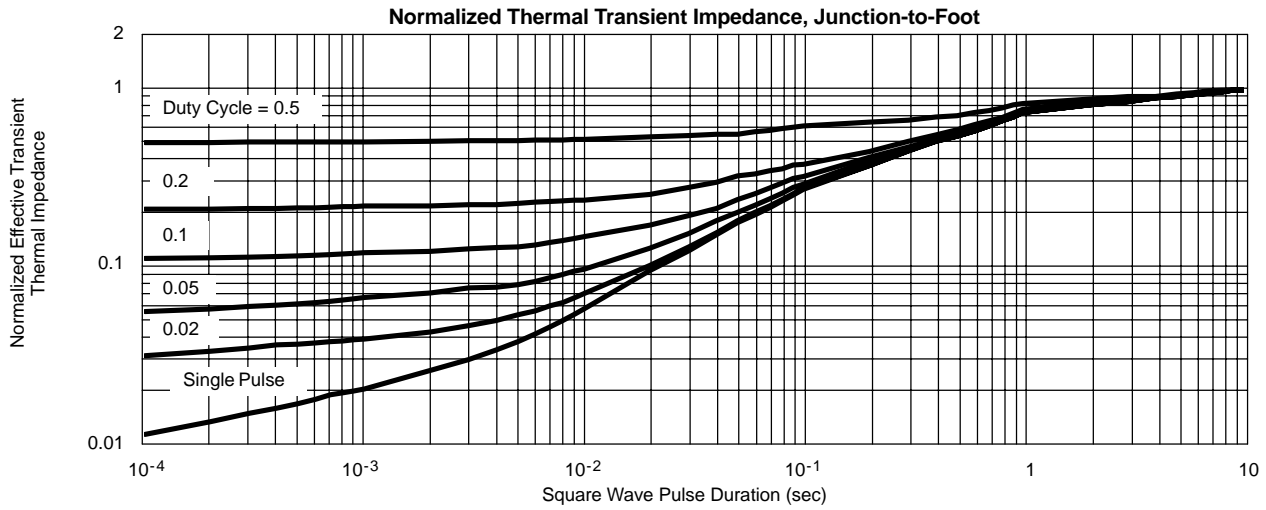
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED) CHANNEL 1





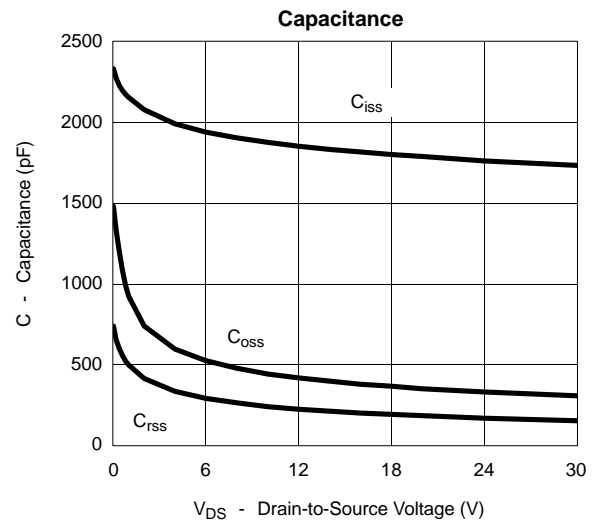
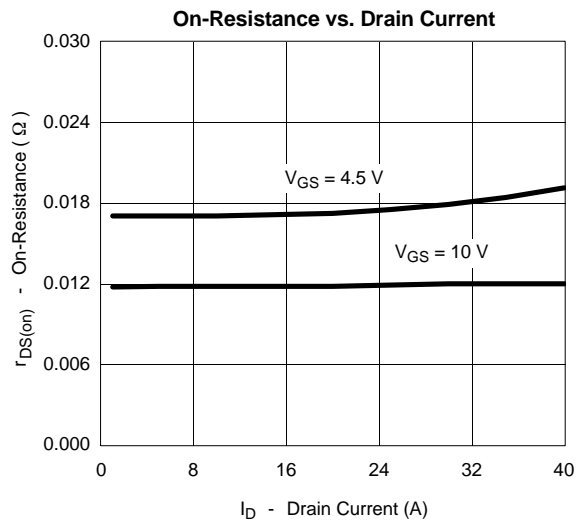
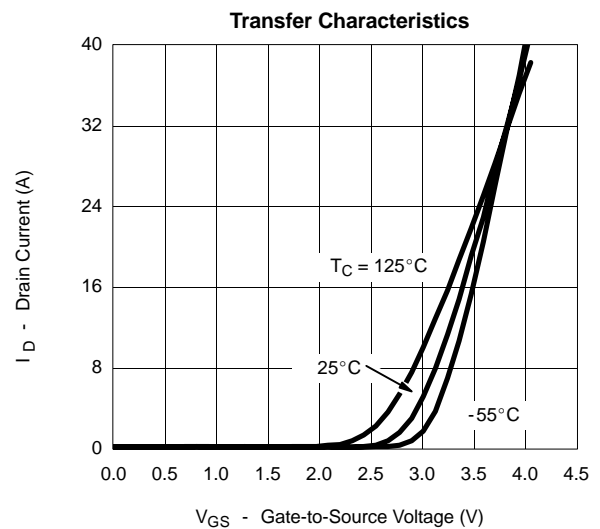
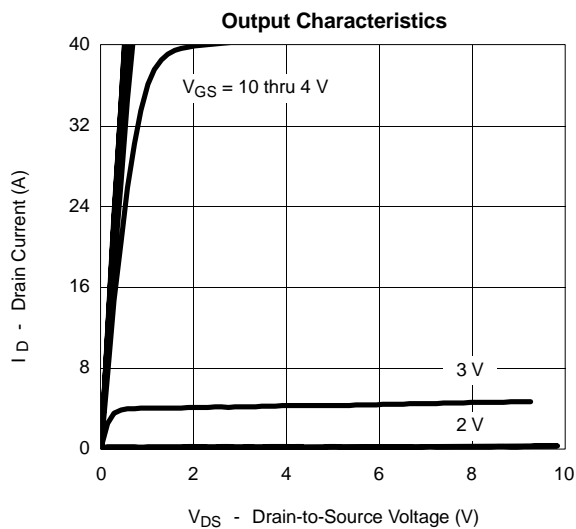
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 1



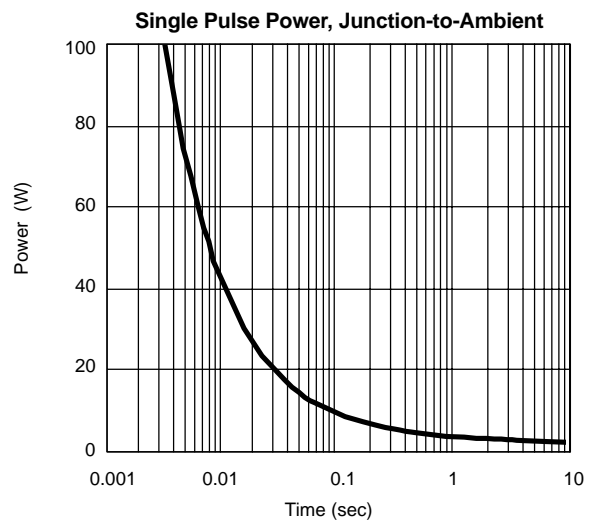
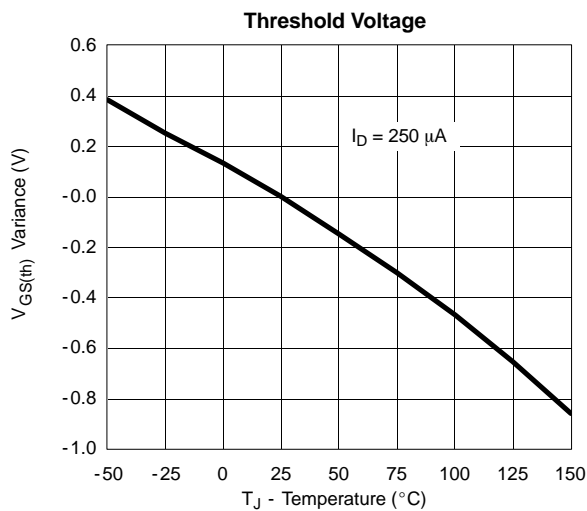
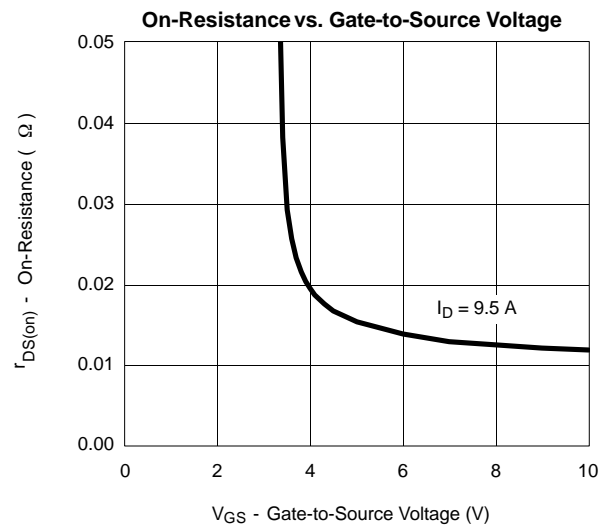
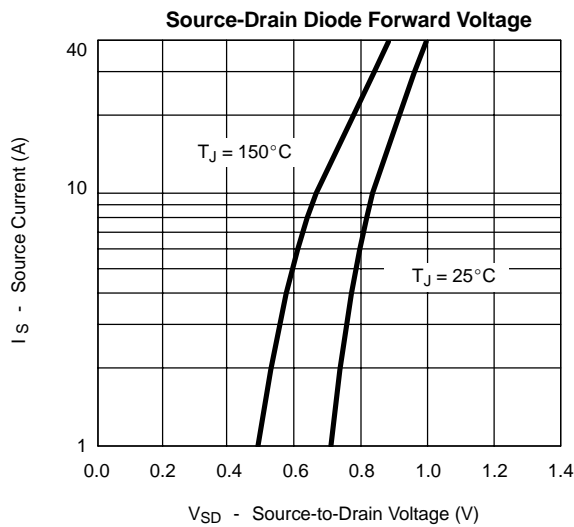
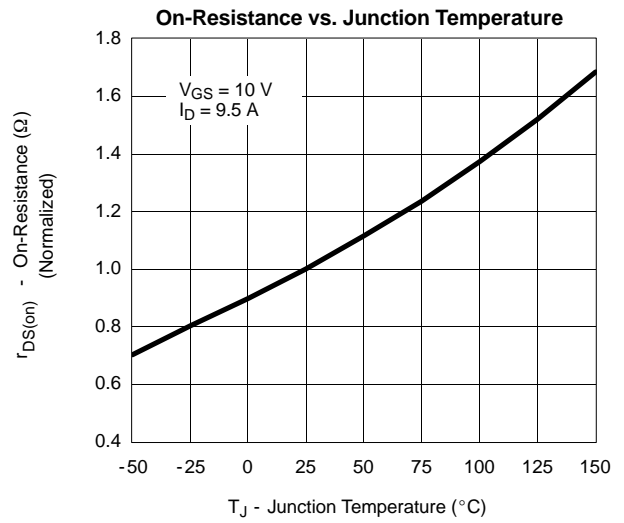
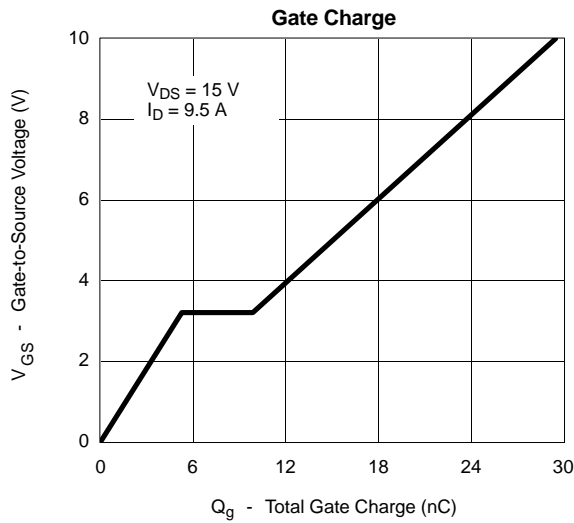
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 2

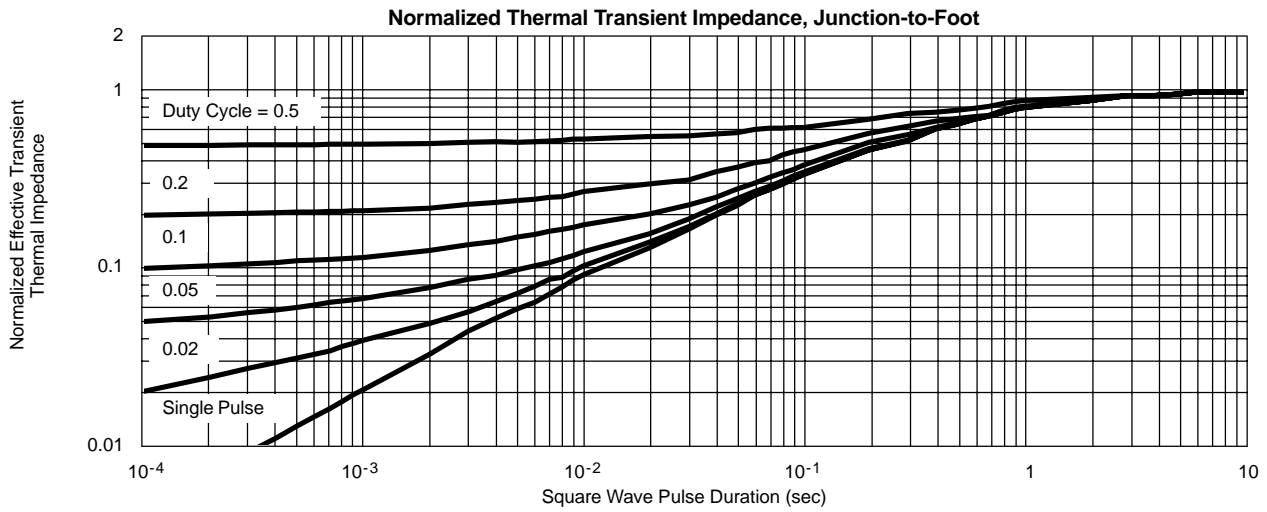
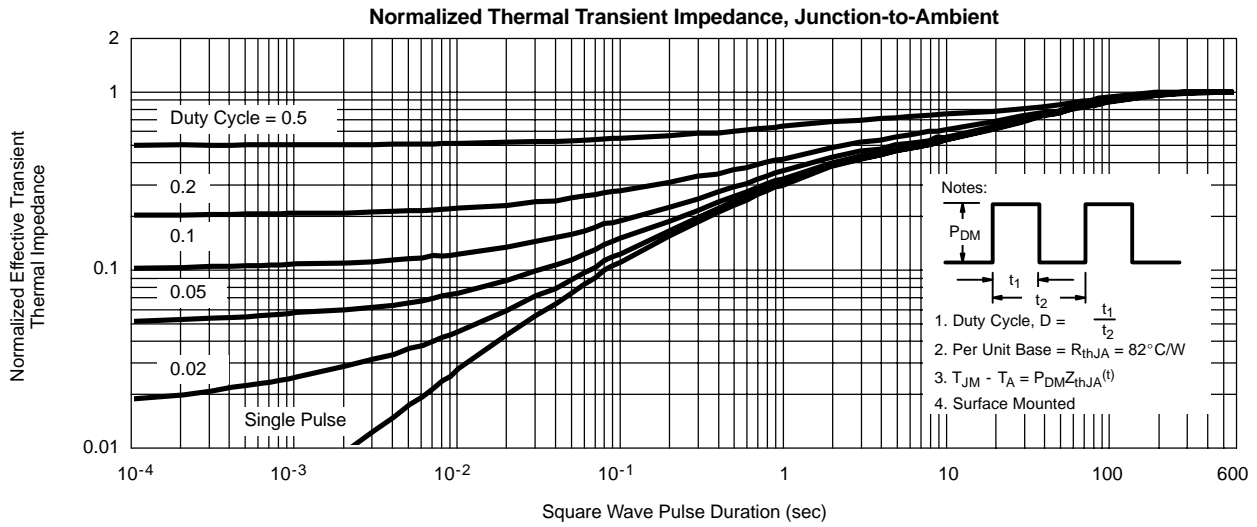


TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

CHANNEL 2



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED) CHANNEL 2





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