



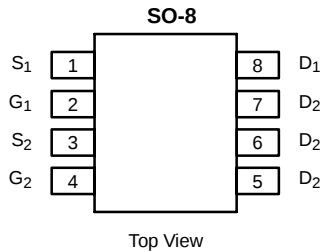
Asymmetrical Dual N-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY

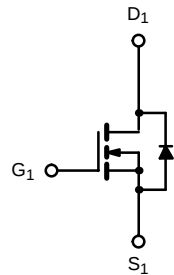
	V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
Channel-1	30	0.022 @ V _{GS} = 10 V	6.3
		0.030 @ V _{GS} = 4.5 V	5.4
Channel-2		0.0155 @ V _{GS} = 10 V	9.5
		0.0205 @ V _{GS} = 4.5 V	8.2

FEATURES

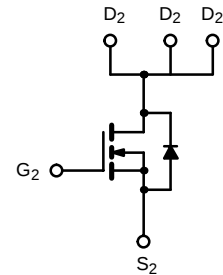
- 100% R_g Tested



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



N-Channel 1
MOSFET



N-Channel 2
MOSFET

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}	T _A = 25°C	I _D	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		
Continuous Source Current (Diode Conduction) ^{NO TAG}		I _S	1.3	0.9	2.2	1.15	
Maximum Power Dissipation ^{NO TAG}	T _A = 25°C	P _D	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}	72	90	43	53	°C/W
		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° 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	Ch-1	0.8			V	
			Ch-2	1.0				
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = 20 V	Ch-1			100	nA	
			Ch-2			100		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V	Ch-1			1	μA	
			Ch-2			1		
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 85°C	Ch-1			15		
			Ch-2			15		
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	Ch-1	20			A	
			Ch-2	30				
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 6.3 A	Ch-1		0.018	0.022	Ω	
		V _{GS} = 10 V, I _D = 9.5 A	Ch-2		0.0125	0.0155		
		V _{GS} = 4.5 V, I _D = 5.4 A	Ch-1		0.024	0.030		
		V _{GS} = 4.5 V, I _D = 8.2 A	Ch-2		0.0165	0.0205		
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 6.3 A	Ch-1		17		S	
		V _{DS} = 15 V, I _D = 9.5 A	Ch-2		28			
Diode Forward Voltage ^a	V _{SD}	I _S = 1.3 A, V _{GS} = 0 V	Ch-1		0.7	1.1	V	
		I _S = 2.2 A, V _{GS} = 0 V	Ch-2		0.75	1.1		
Dynamic ^b								
Total Gate Charge	Q _g	Channel-1 V _{DS} = 15 V, V _{GS} = 5 V, I _D = 6.3 A Channel-2 V _{DS} = 15 V, V _{GS} = 5 V, I _D = -9.5 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	Channel-1 V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω Channel-2 V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω	Ch-1	1.5		5.1	Ω	
			Ch-2	0.5		2.6		
Turn-On Delay Time	t _{d(on)}		Ch-1		10	20	ns	
			Ch-2		15	30		
Rise Time	t _r		Ch-1		5	10		
			Ch-2		5	10		
Turn-Off Delay Time	t _{d(off)}		Ch-1		26	50		
			Ch-2		44	80		
Fall Time	t _f		Ch-1		8	16		
			Ch-2		12	24		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 1.3 A, di/dt = 100 A/μs	Ch-1		30	60		
		I _F = 2.2 A, di/dt = 100 μA/μs	Ch-2		32	70		

Notes

a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

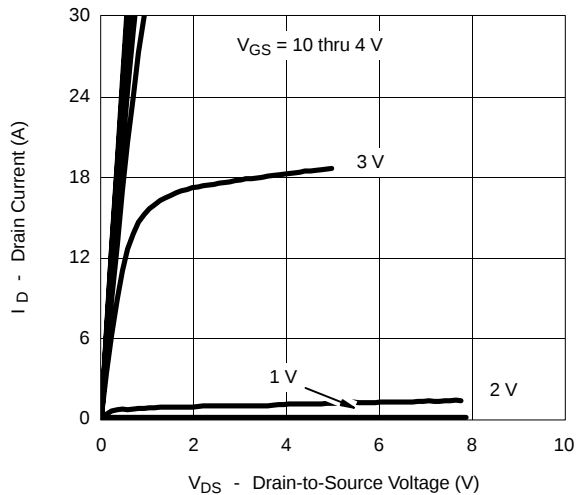
b. Guaranteed by design, not subject to production testing.



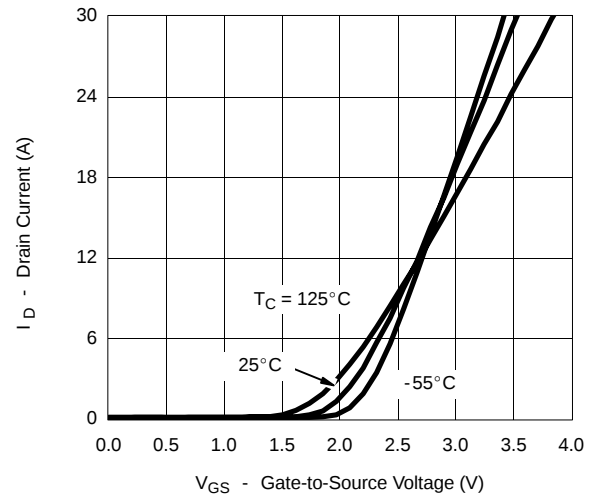
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

CHANNEL 1

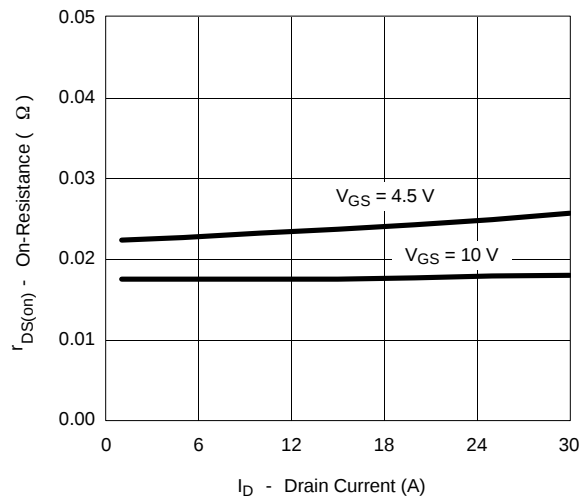
Output Characteristics



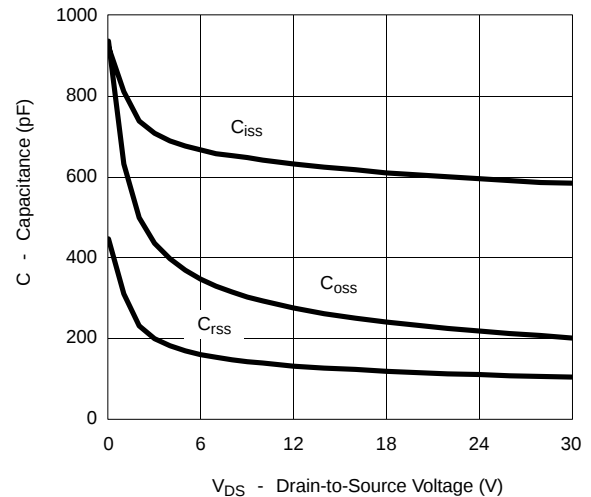
Transfer Characteristics



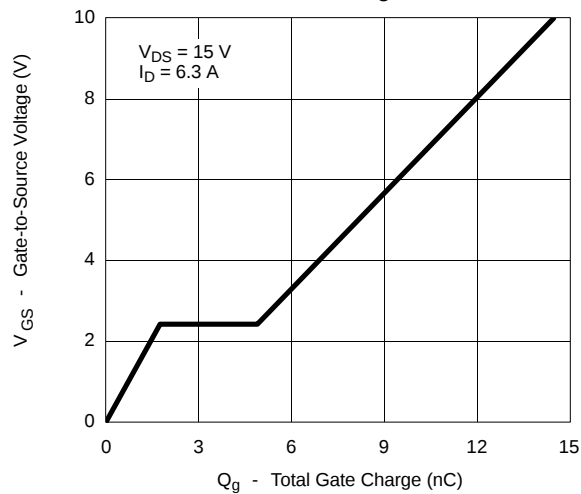
On-Resistance vs. Drain Current



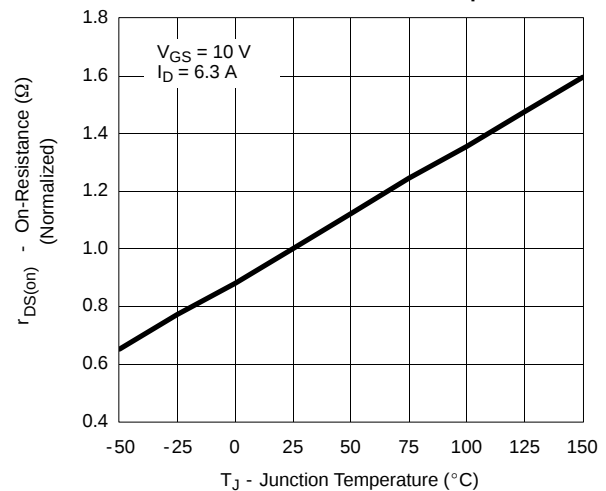
Capacitance



Gate Charge

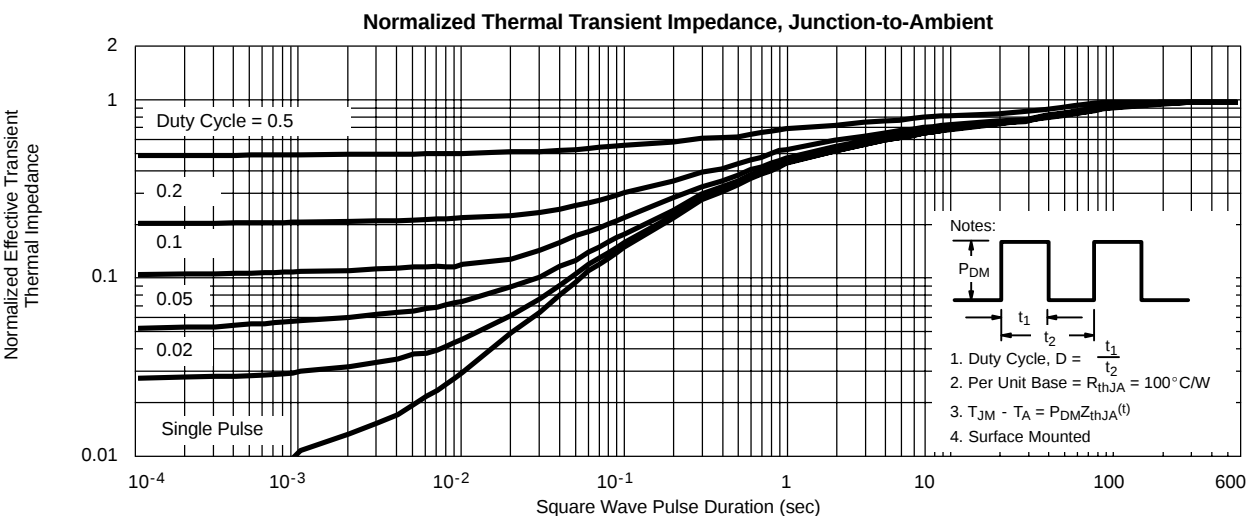
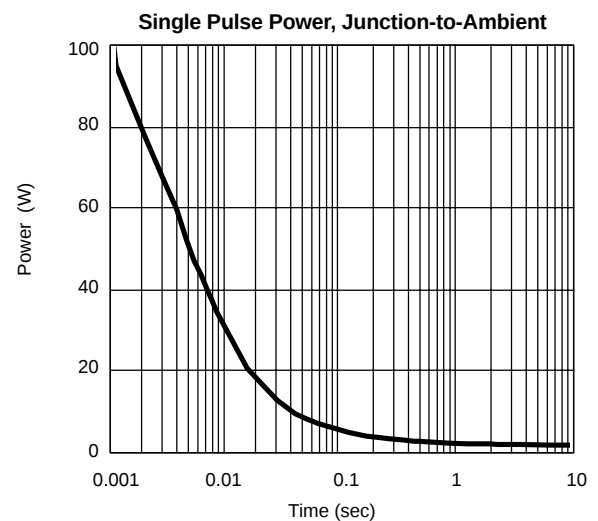
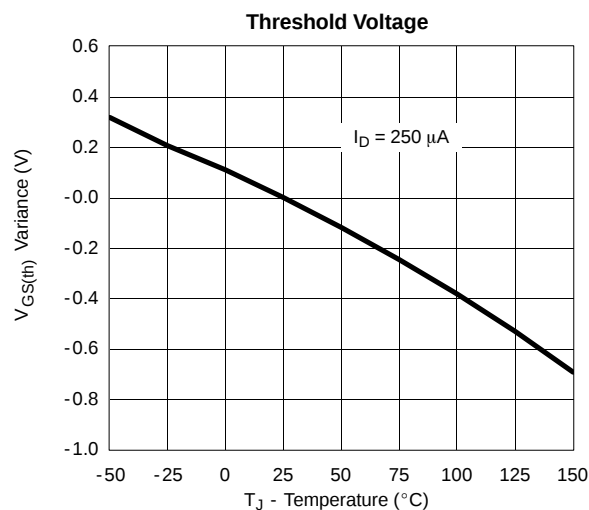
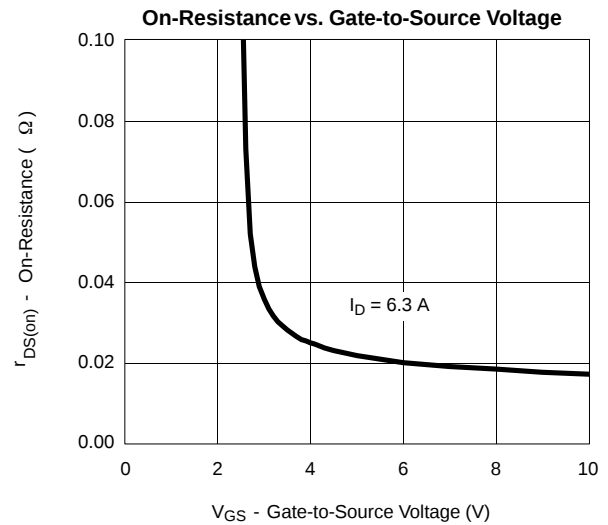
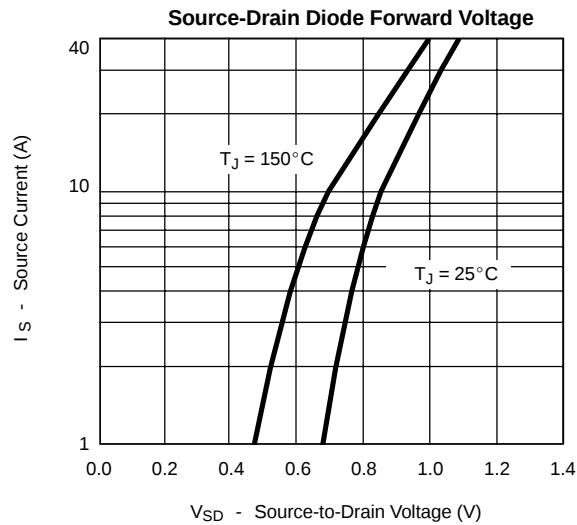


On-Resistance vs. Junction Temperature





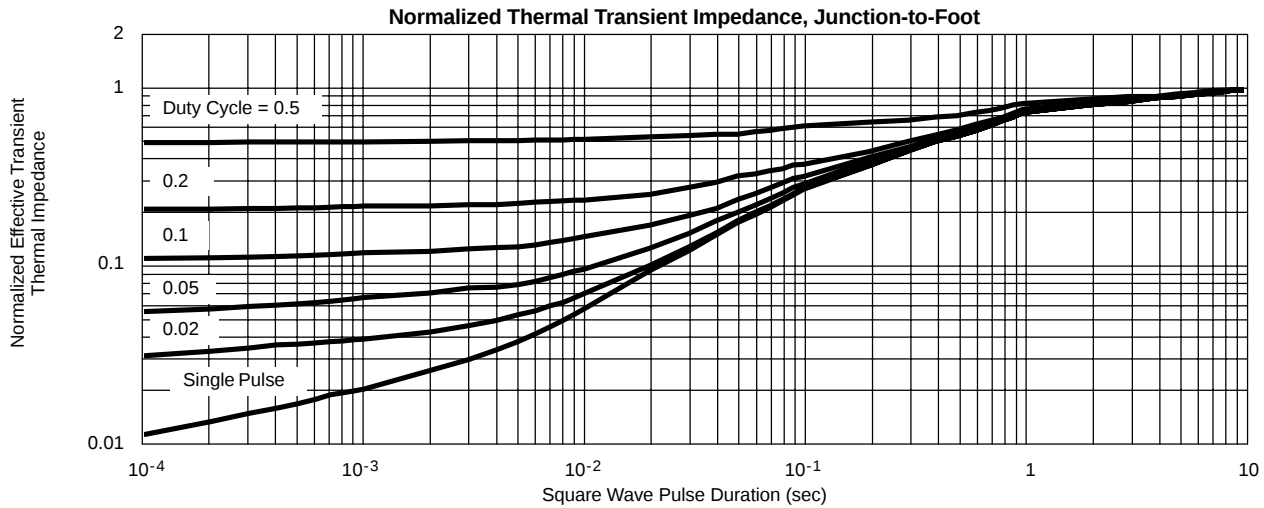
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED) **CHANNEL 1**





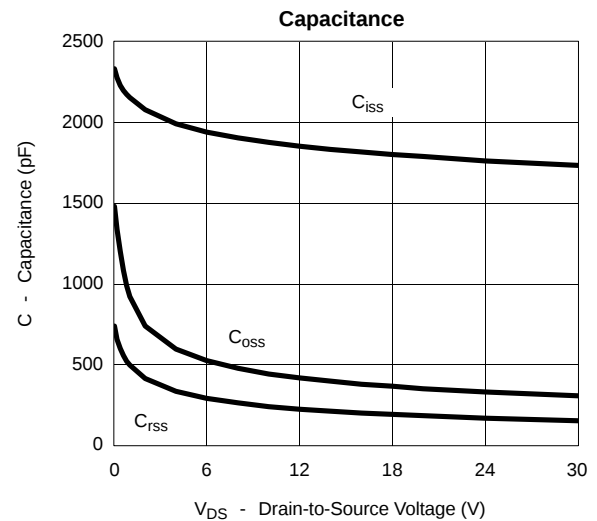
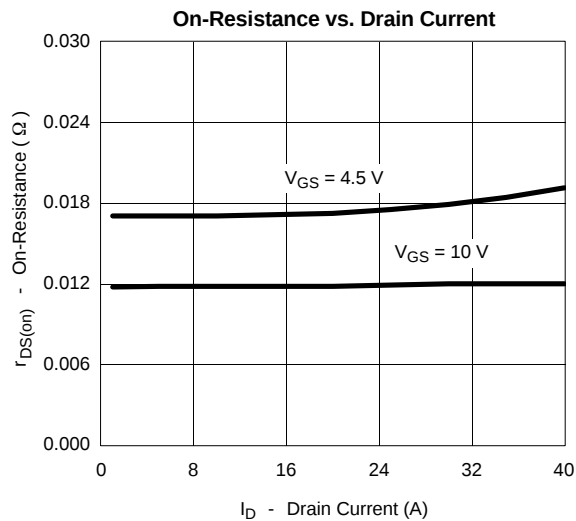
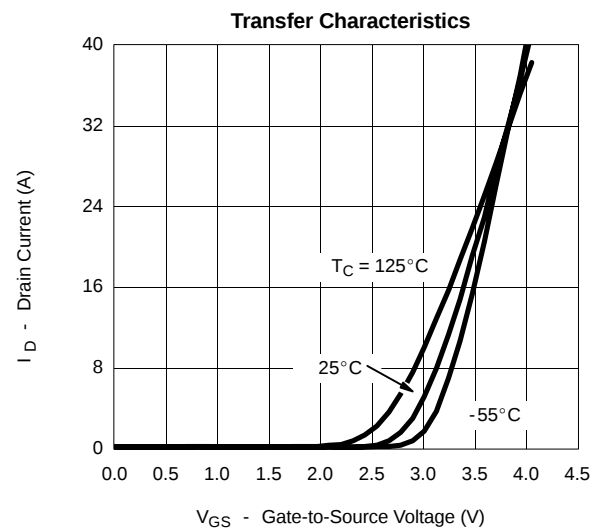
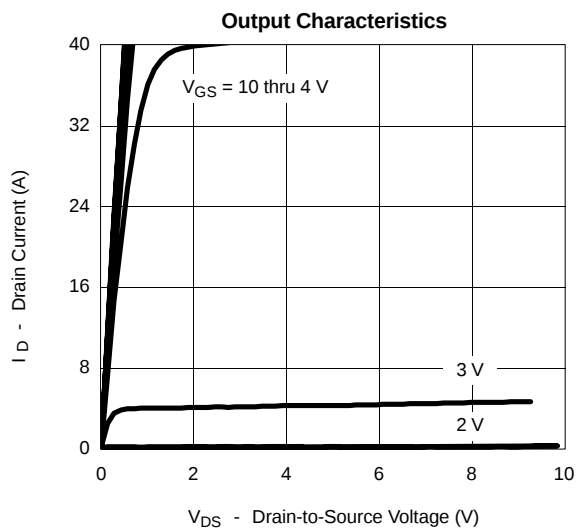
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

CHANNEL 1



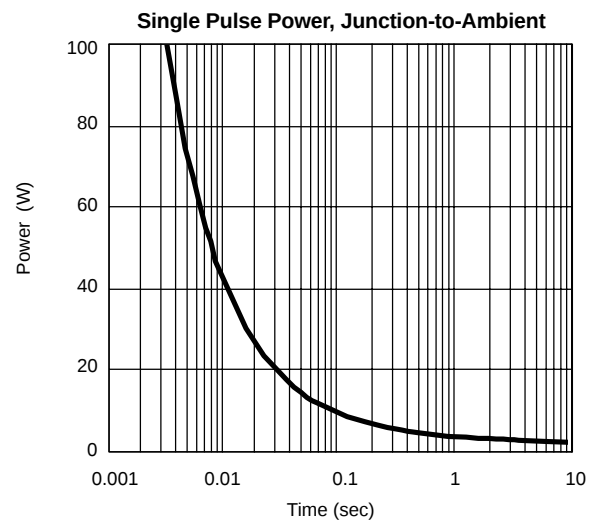
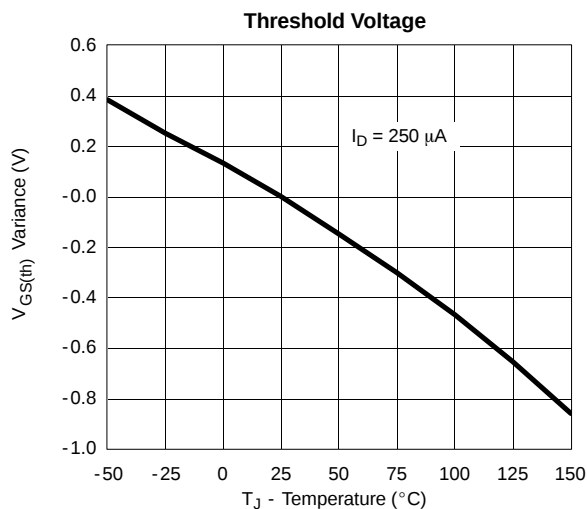
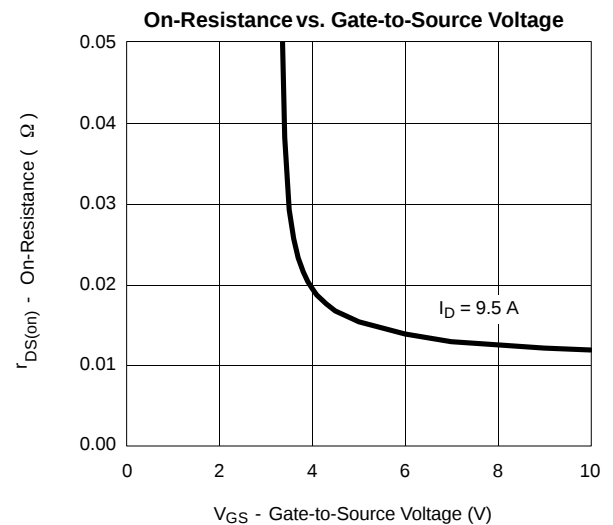
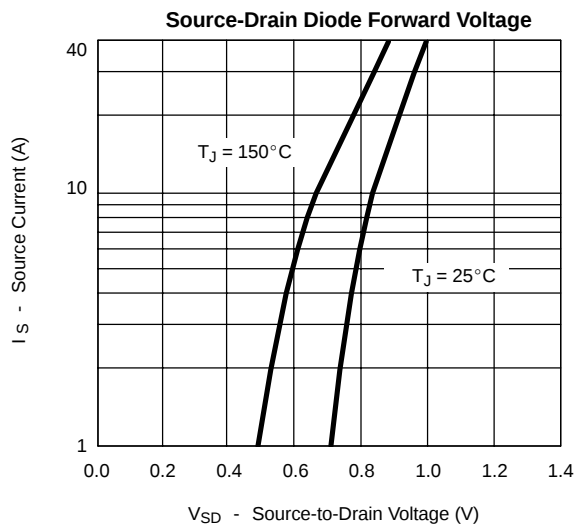
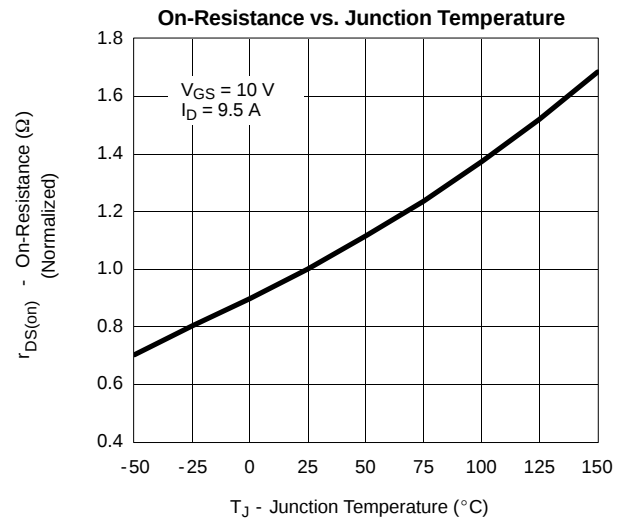
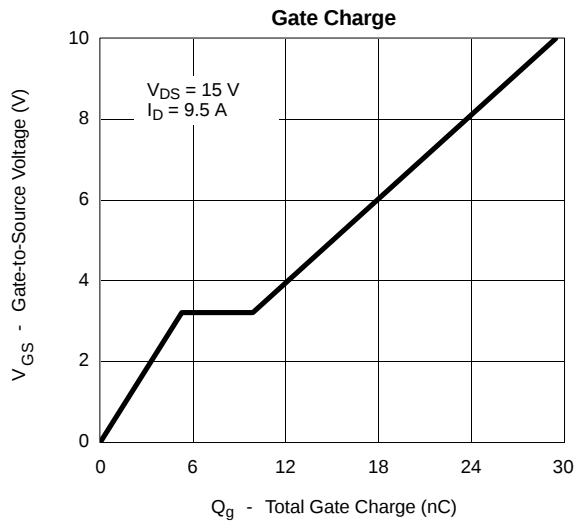
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

CHANNEL 2



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

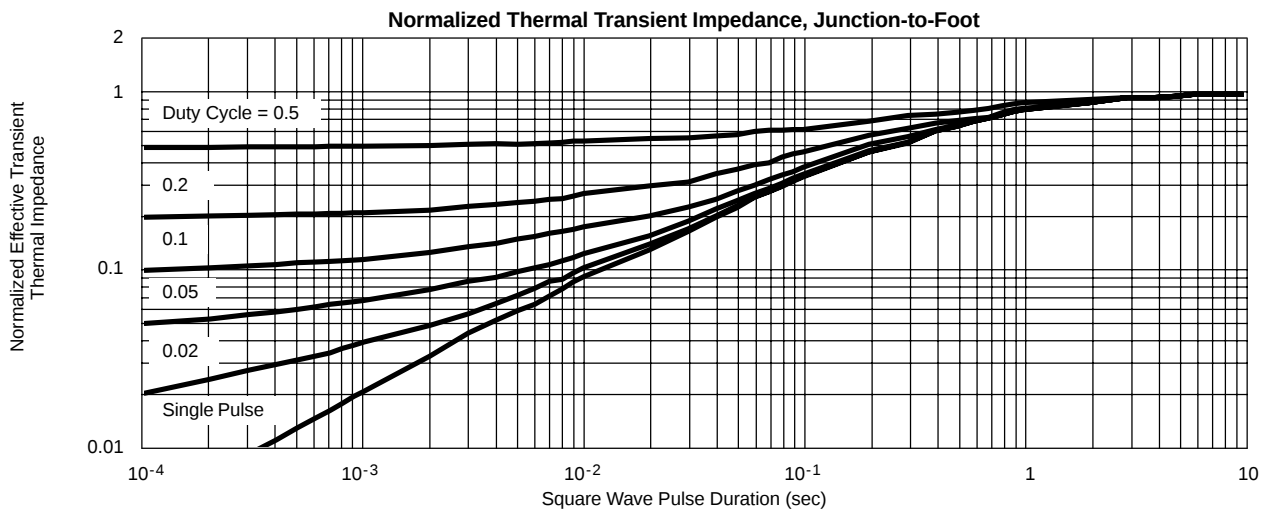
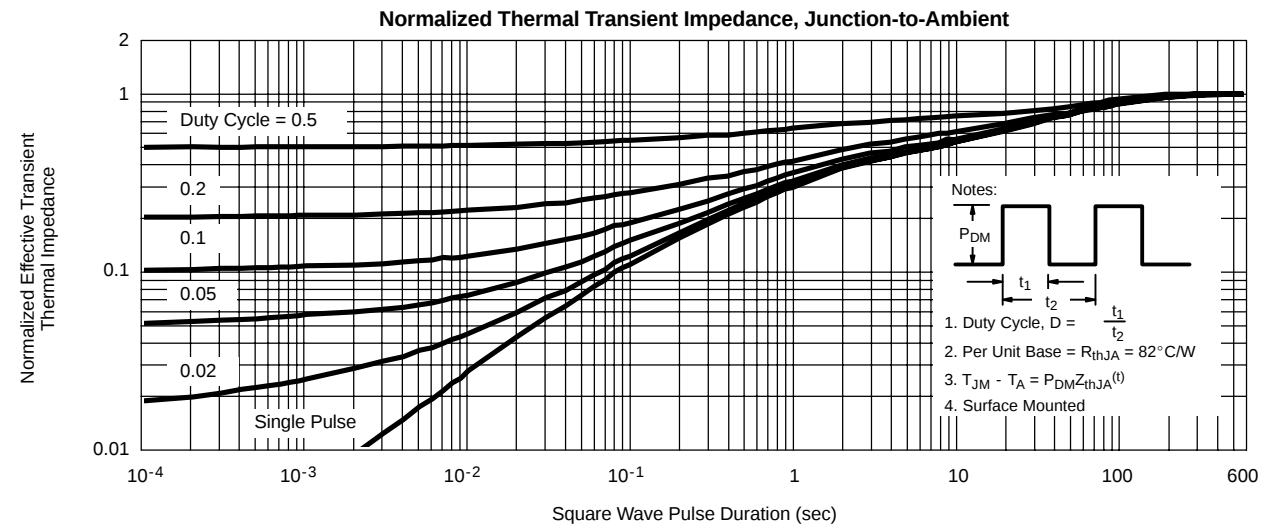
CHANNEL 2





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

CHANNEL 2





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