

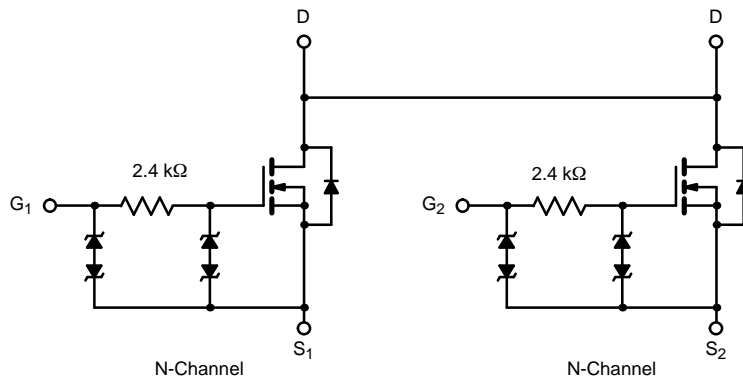
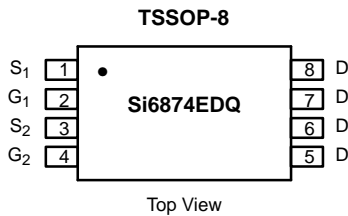


Dual N-Channel 20-V (D-S) MOSFET, Common Drain

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	0.026 @ $V_{GS} = 4.5$ V	6.5
	0.031 @ $V_{GS} = 2.5$ V	5.8
	0.039 @ $V_{GS} = 1.8$ V	5.0



ESD Protected
3000 V



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		V_{DS}	20		V
Gate-Source Voltage		V_{GS}	± 12		
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	6.5	5.3	A
	$T_A = 85^\circ\text{C}$		4.7	4.2	
Pulsed Drain Current		I_{DM}	30		
Continuous Source Current (Diode Conduction) ^a		I_S	1.50	1.10	W
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	1.67	1.20	
	$T_A = 85^\circ\text{C}$		1.06	0.76	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150		$^\circ\text{C}$

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	R_{thJA}	60	75	$^\circ\text{C/W}$
	Steady State		86	105	
Maximum Junction-to-Foot (Drain)		R_{thJF}	38	45	

Notes

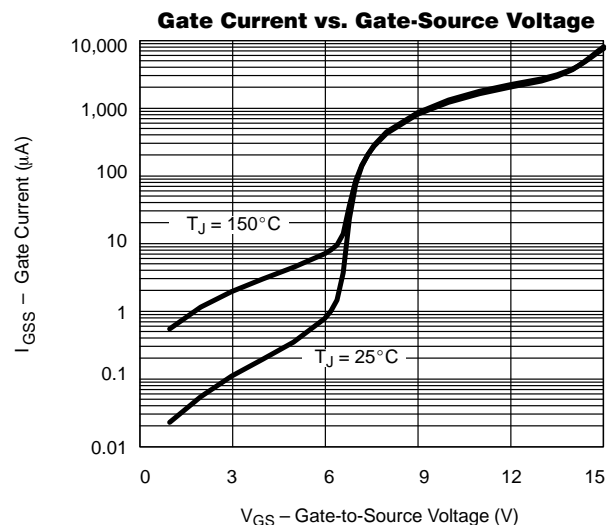
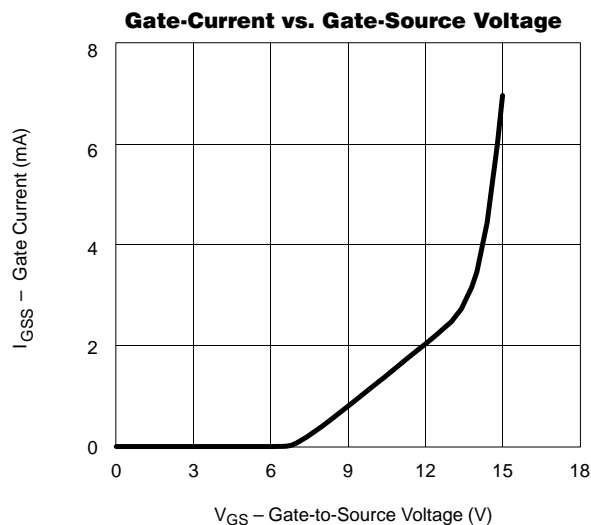
a. Surface Mounted on 1" x 1" FR4 Board.


SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	0.40			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 4.5\ \text{V}$			± 1	μA
		$V_{DS} = 0\ \text{V}, V_{GS} = \pm 12\ \text{V}$			± 10	mA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16\ \text{V}, V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 16\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 85^\circ\text{C}$			20	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5\ \text{V}, V_{GS} = 4.5\ \text{V}$	20			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 4.5\ \text{V}, I_D = 6.5\ \text{A}$		0.021	0.026	Ω
		$V_{GS} = 2.5\ \text{V}, I_D = 5.8\ \text{A}$		0.025	0.031	
		$V_{GS} = 1.8\ \text{V}, I_D = 5.0\ \text{A}$		0.031	0.039	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 10\ \text{V}, I_D = 6.5\ \text{A}$		25		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 1.5\ \text{A}, V_{GS} = 0\ \text{V}$		0.65	1.1	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 10\ \text{V}, V_{GS} = 4.5\ \text{V}, I_D = 6.5\ \text{A}$		12.5	18	nC
Gate-Source Charge	Q_{gs}			2.7		
Gate-Drain Charge	Q_{gd}			2.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong 1\ \text{A}, V_{GEN} = 4.5\ \text{V}, R_G = 6\ \Omega$		0.7	1.0	μs
Rise Time	t_r			1.3	2.0	
Turn-Off Delay Time	$t_{d(off)}$			5.5	8.0	
Fall Time	t_f			4.6	7.0	

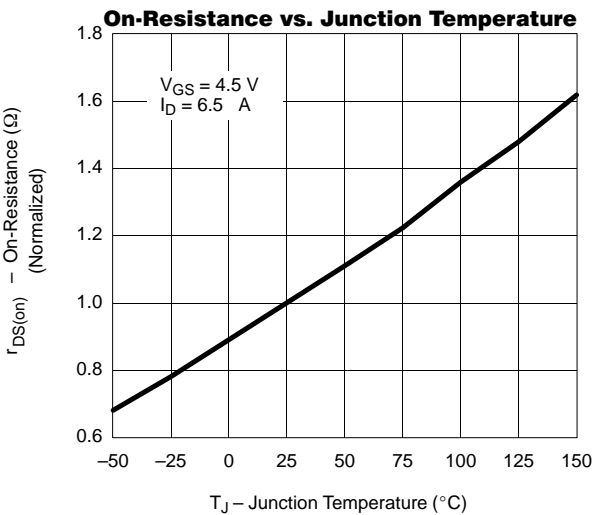
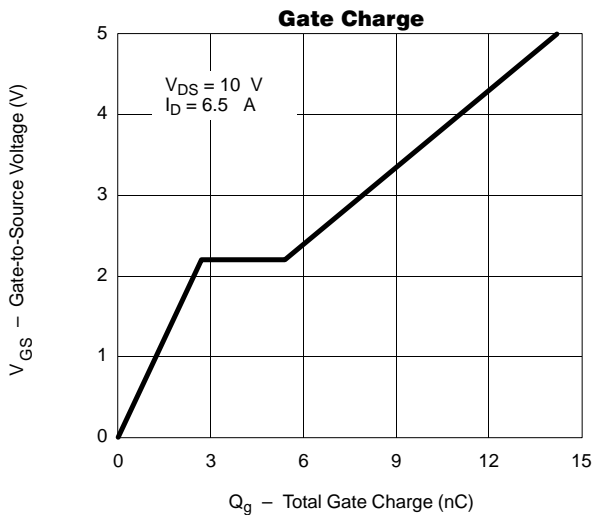
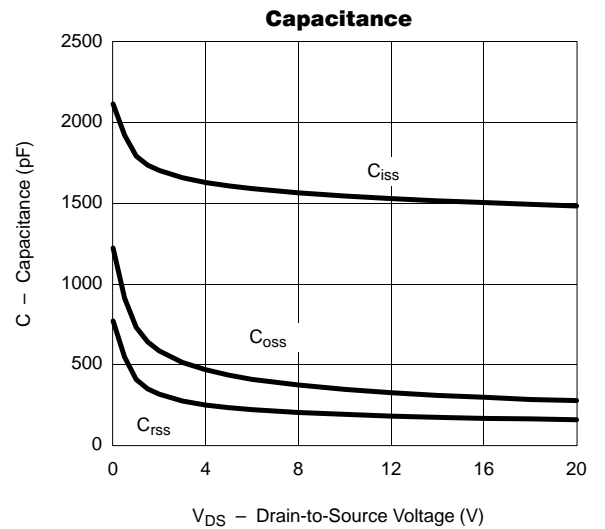
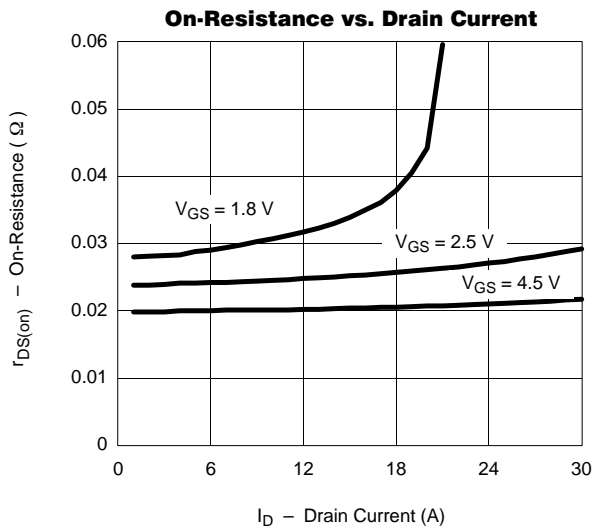
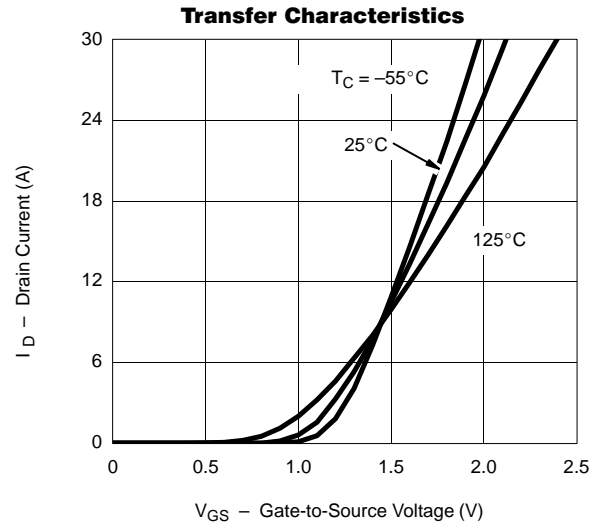
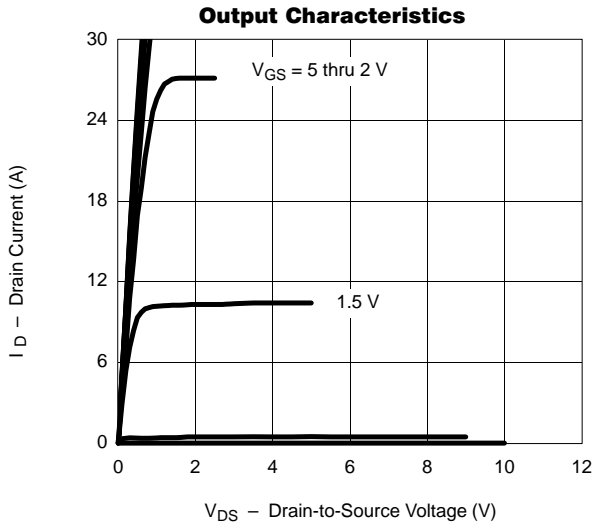
Notes

- 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)




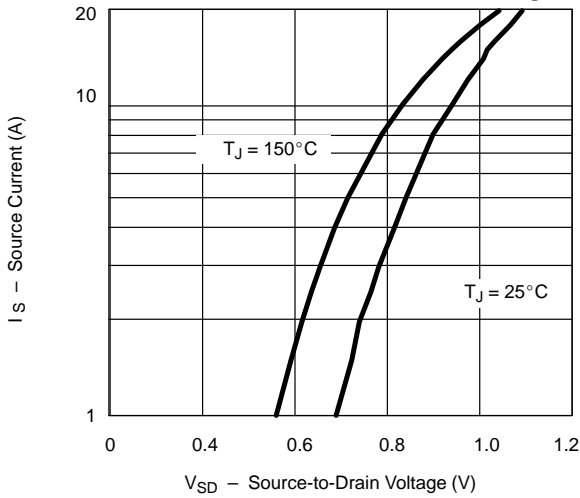
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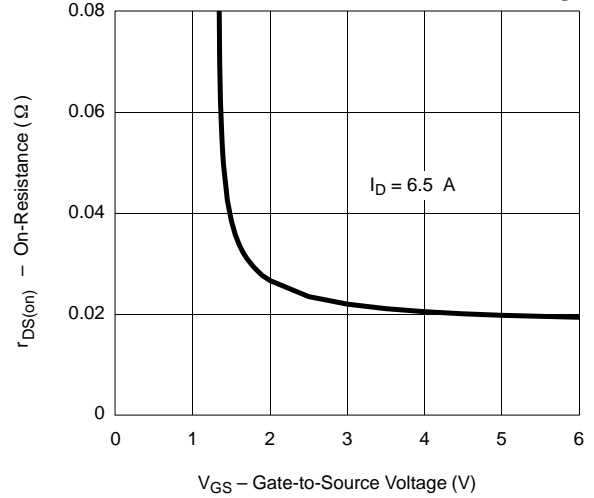


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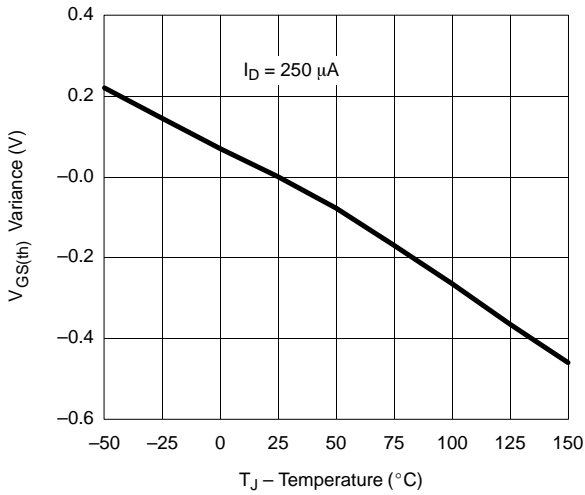
Source-Drain Diode Forward Voltage



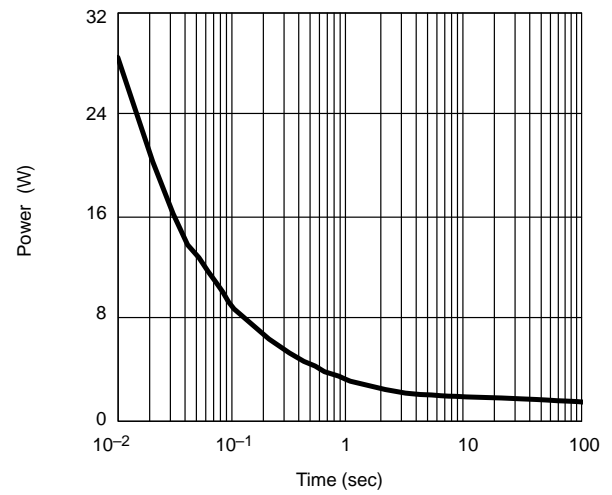
On-Resistance vs. Gate-to-Source Voltage



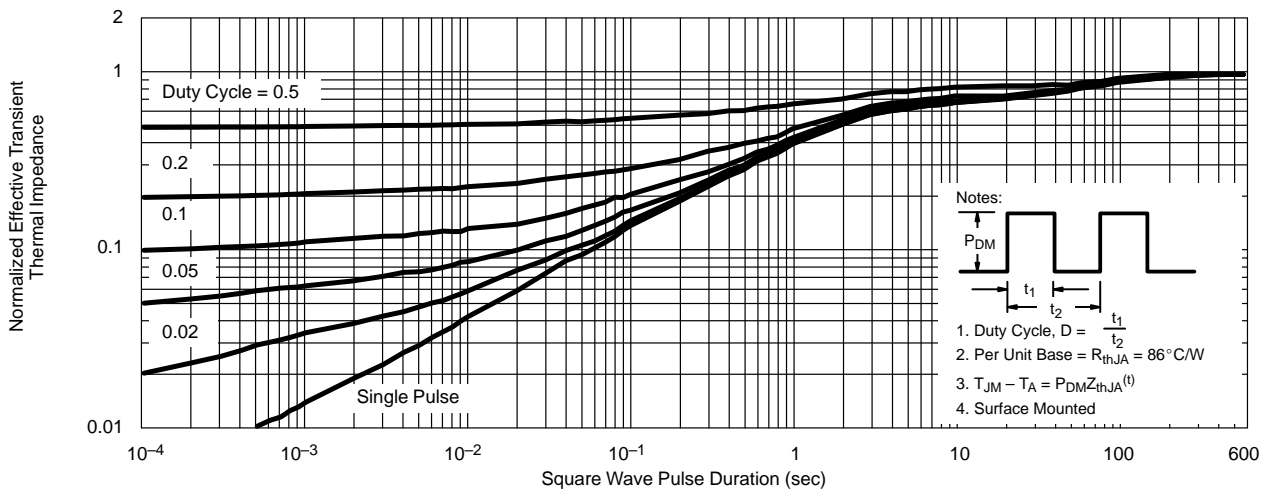
Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

