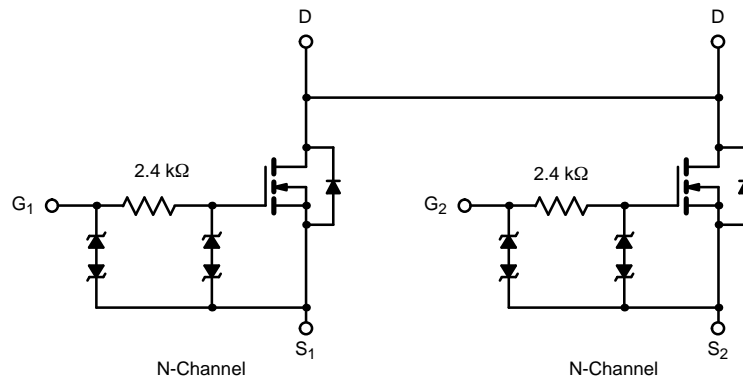
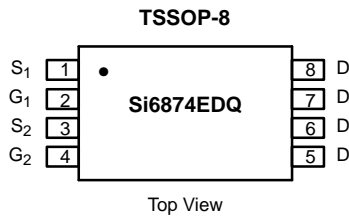


## Dual N-Channel 20-V (D-S) MOSFET, Common Drain

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (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		$V_{GS}$	$\pm 12$		
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$T_A = 25^\circ\text{C}$	$I_D$	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) <sup>a</sup>		$I_S$	1.50	1.10	W
Maximum Power Dissipation <sup>a</sup>	$T_A = 25^\circ\text{C}$	$P_D$	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 <sup>a</sup>	$t \leq 10$ sec	$R_{thJA}$	60	75	$^\circ\text{C/W}$
	Steady State		86	105	
Maximum Junction-to-Foot (Drain)		$R_{thJF}$	38	45	

**Notes**

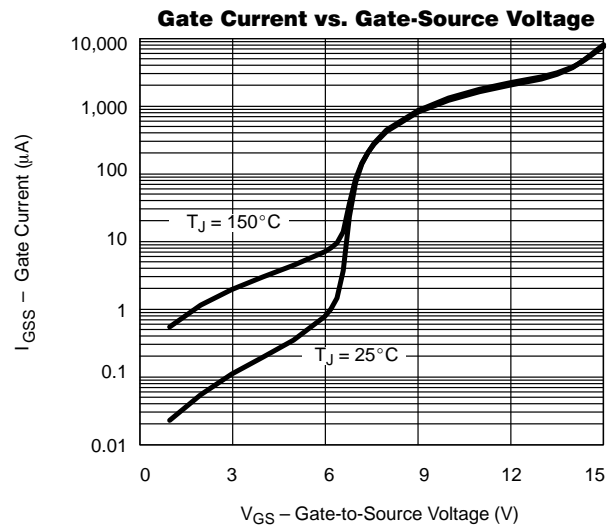
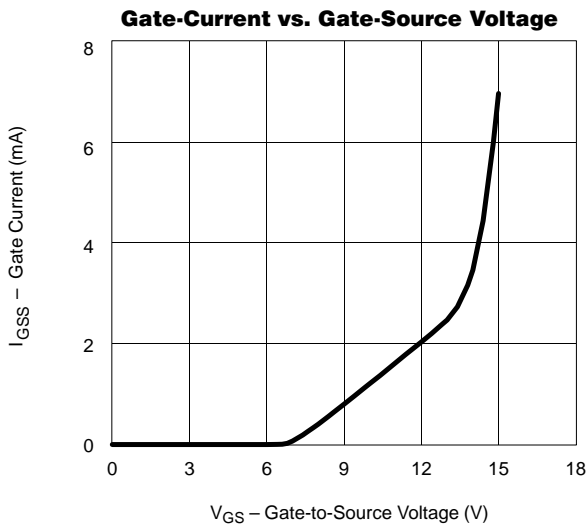
a. Surface Mounted on 1" x 1" FR4 Board.

SPECIFICATIONS (T <sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	0.40			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±4.5 V			±1	μA
		V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±12 V			±10	mA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 16 V, V <sub>GS</sub> = 0 V			1	μA
		V <sub>DS</sub> = 16 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 85 °C			20	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 4.5 V	20			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 6.5 A		0.021	0.026	Ω
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 5.8 A		0.025	0.031	
		V <sub>GS</sub> = 1.8 V, I <sub>D</sub> = 5.0 A		0.031	0.039	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 6.5 A		25		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.5 A, V <sub>GS</sub> = 0 V		0.65	1.1	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 6.5 A		12.5	18	nC
Gate-Source Charge	Q <sub>gs</sub>			2.7		
Gate-Drain Charge	Q <sub>gd</sub>			2.7		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 4.5 V, R <sub>G</sub> = 6 Ω		0.7	1.0	μs
Rise Time	t <sub>r</sub>			1.3	2.0	
Turn-Off Delay Time	t <sub>d(off)</sub>			5.5	8.0	
Fall Time	t <sub>f</sub>			4.6	7.0	

Notes

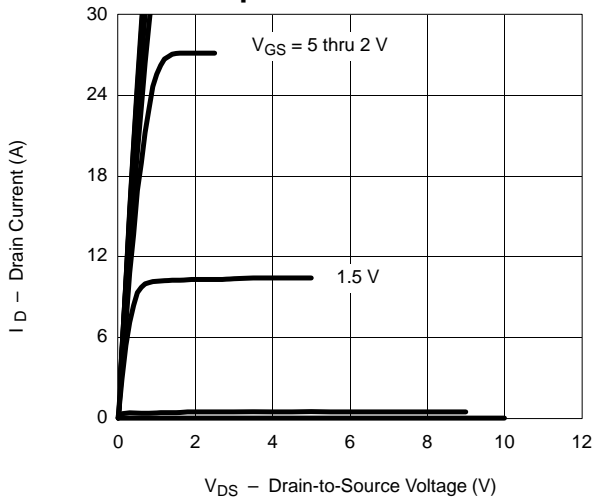
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

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

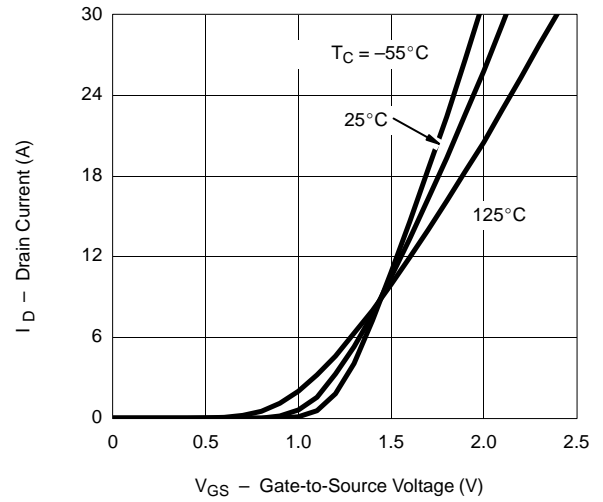


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

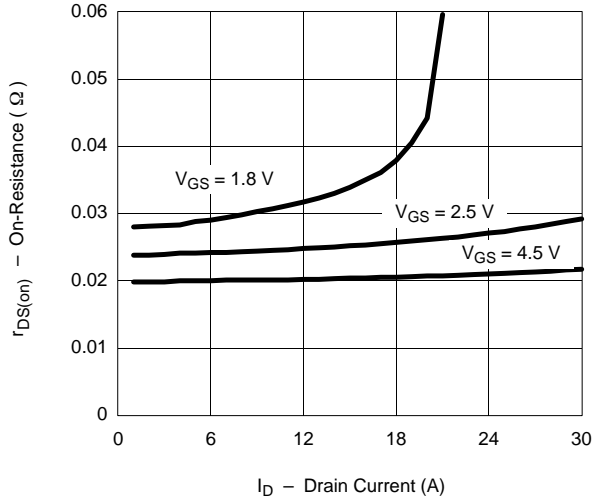
**Output Characteristics**



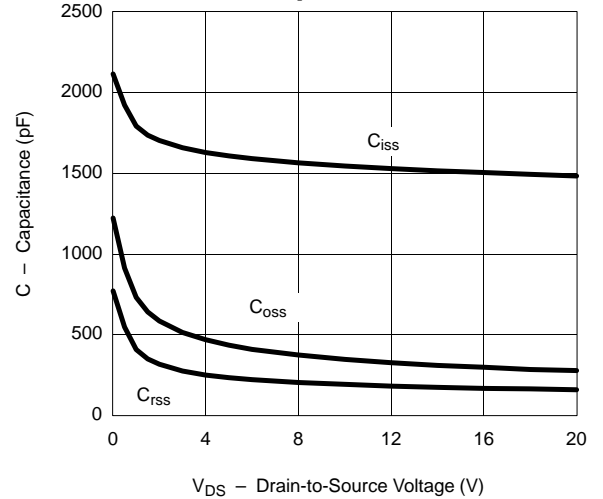
**Transfer Characteristics**



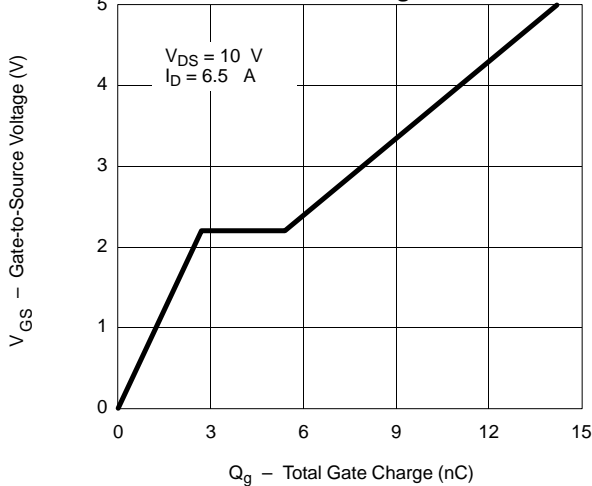
**On-Resistance vs. Drain Current**



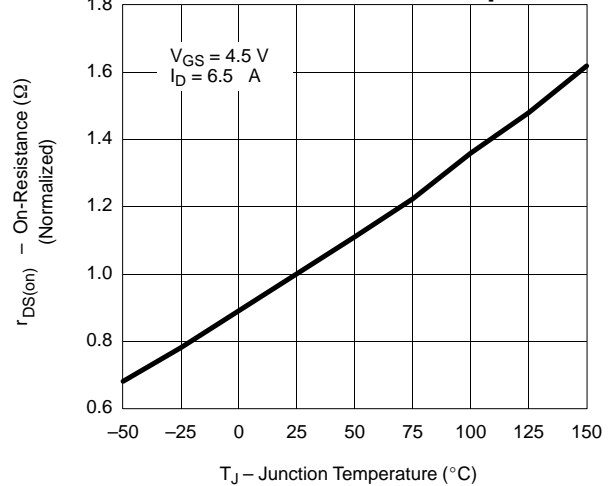
**Capacitance**



**Gate Charge**

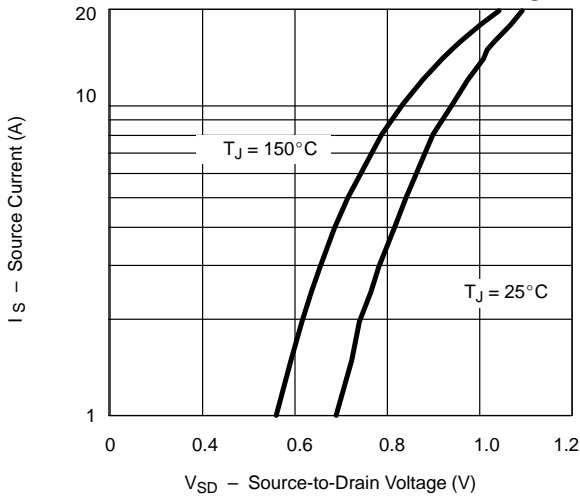


**On-Resistance vs. Junction Temperature**

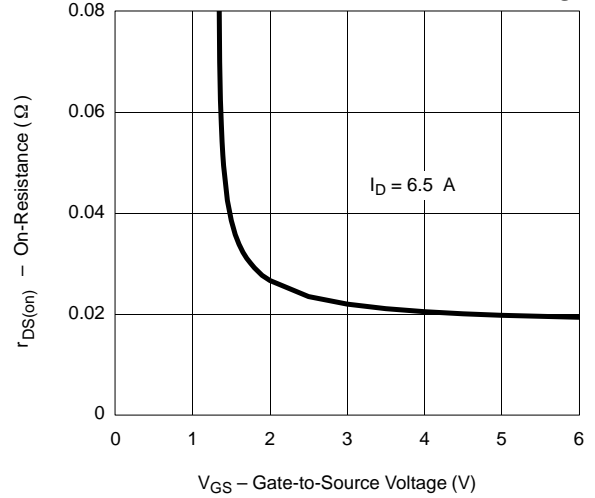


**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)**

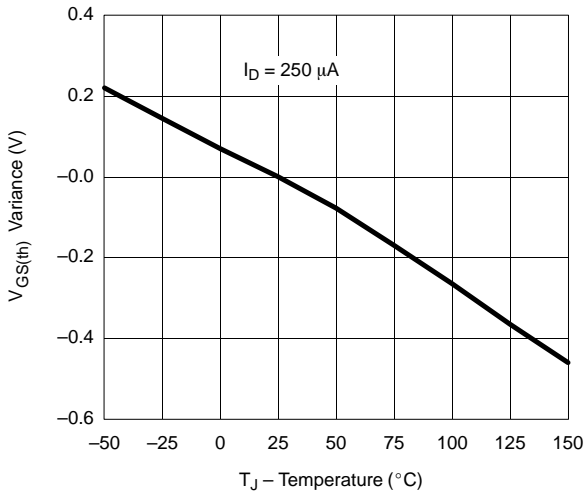
**Source-Drain Diode Forward Voltage**



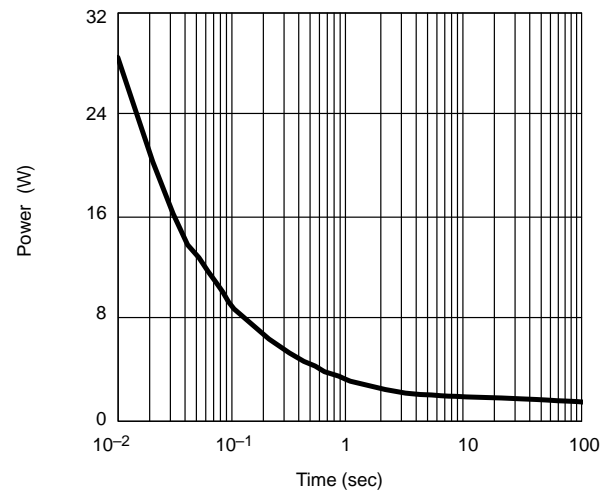
**On-Resistance vs. Gate-to-Source Voltage**



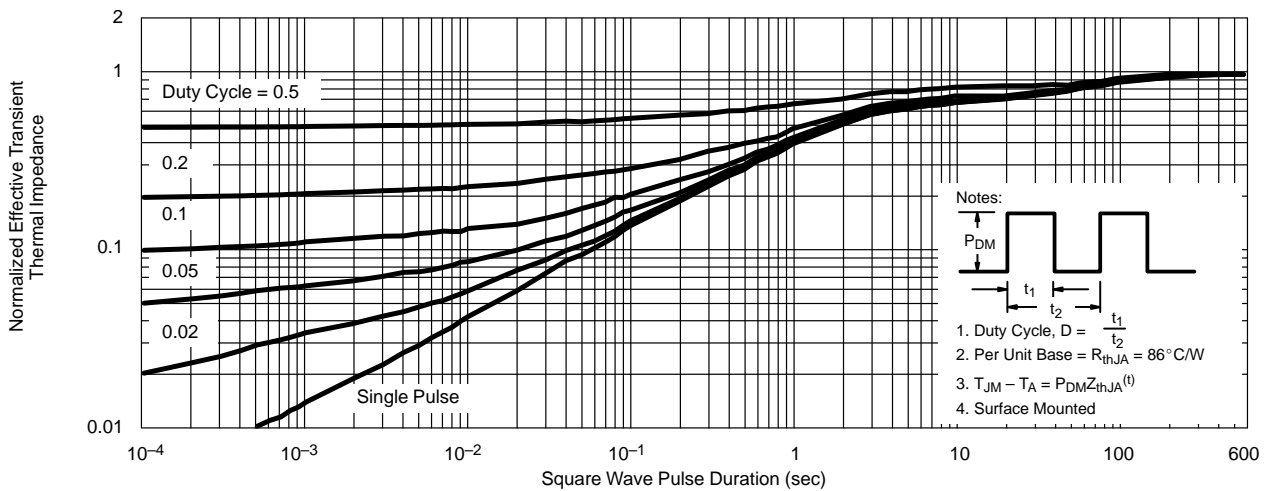
**Threshold Voltage**



**Single Pulse Power, Junction-to-Ambient**



**Normalized Thermal Transient Impedance, Junction-to-Ambient**





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

