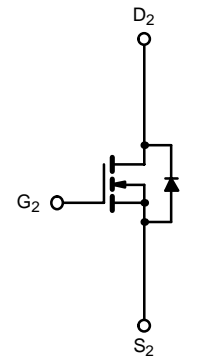
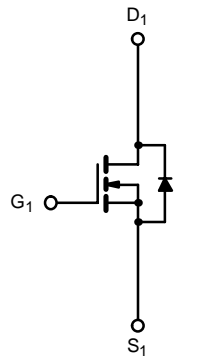
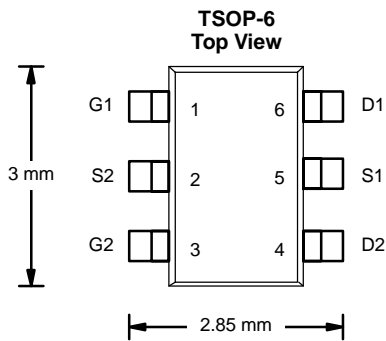




## Dual N-Channel 20-V (D-S) MOSFET

**TrenchFET<sup>®</sup>**  
Power MOSFETs

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
20	0.125 @ $V_{GS} = 4.5$ V	2.4
	0.200 @ $V_{GS} = 2.5$ V	1.8



N-Channel MOSFET

N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 sec	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>	$T_A = 25^\circ\text{C}$	$I_D$	2.4	2.0	A
	$T_A = 85^\circ\text{C}$		1.7	1.4	
Pulsed Drain Current (10 $\mu\text{s}$ Pulse Width)		$I_{DM}$	8		
Continuous Source Current (Diode Conduction) <sup>a</sup>		$I_S$	1.05	0.75	W
Maximum Power Dissipation <sup>a</sup>	$T_A = 25^\circ\text{C}$	$P_D$	1.15	0.83	
	$T_A = 85^\circ\text{C}$		0.59	0.53	
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>	$t \leq 5$ sec	$R_{thJA}$	93	110	$^\circ\text{C/W}$
	Steady State		130	150	
Maximum Junction-to-Foot (Drain)	Steady State	$R_{thJF}$	75	90	

Notes

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

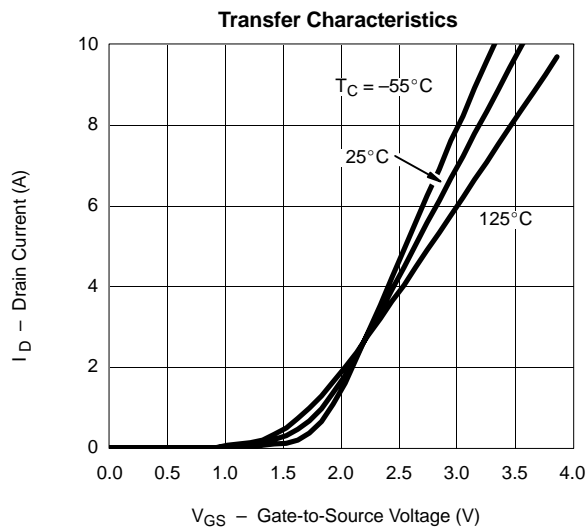
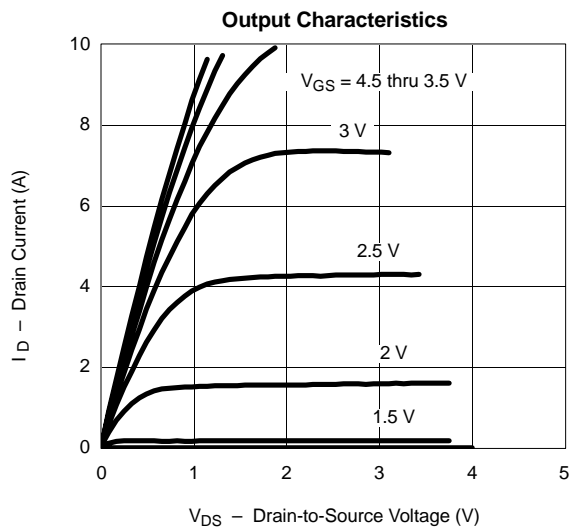
### SPECIFICATIONS ( $T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	0.6			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16 \text{ V}, V_{GS} = 0 \text{ V}$			1	$\mu\text{A}$
		$V_{DS} = 16 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 85^\circ\text{C}$			10	
On-State Drain Current <sup>a</sup>	$I_{D(on)}$	$V_{DS} \geq 5 \text{ V}, V_{GS} = 4.5 \text{ V}$	5			A
Drain-Source On-State Resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = 4.5 \text{ V}, I_D = 2.4 \text{ A}$		0.100	0.125	$\Omega$
		$V_{GS} = 2.5 \text{ V}, I_D = 1.0 \text{ A}$		0.160	0.200	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = 5 \text{ V}, I_D = 2.4 \text{ A}$		5		S
Diode Forward Voltage <sup>a</sup>	$V_{SD}$	$I_S = 1.05 \text{ A}, V_{GS} = 0 \text{ V}$		0.79	1.10	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 10 \text{ V}, V_{GS} = 4.5 \text{ V}, I_D = 2.4 \text{ A}$		2.1	4.0	nC
Gate-Source Charge	$Q_{gs}$			0.3		
Gate-Drain Charge	$Q_{gd}$			0.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10 \text{ V}, R_L = 10 \Omega$ $I_D \cong 1 \text{ A}, V_{GEN} = 4.5 \text{ V}, R_G = 6 \Omega$		10	17	ns
Rise Time	$t_r$			30	50	
Turn-Off Delay Time	$t_{d(off)}$			14	25	
Fall Time	$t_f$			6	12	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = 3.0 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$		30	50	

**Notes**

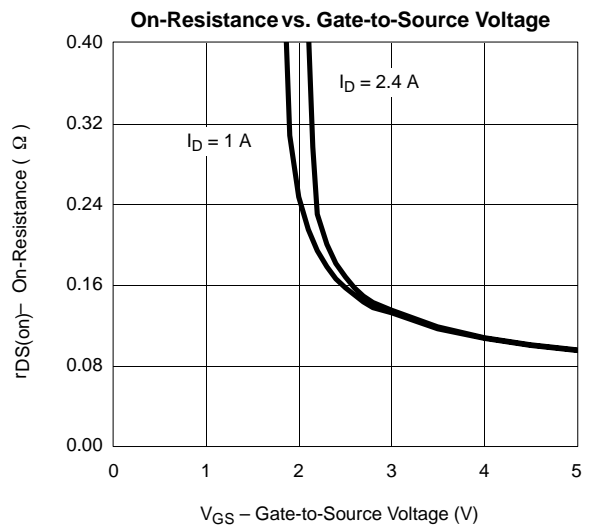
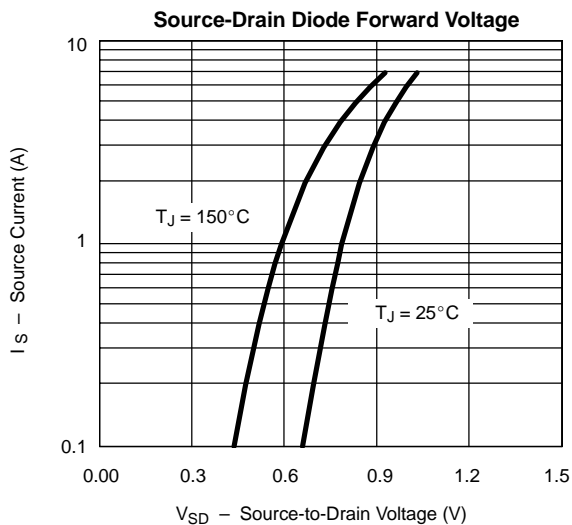
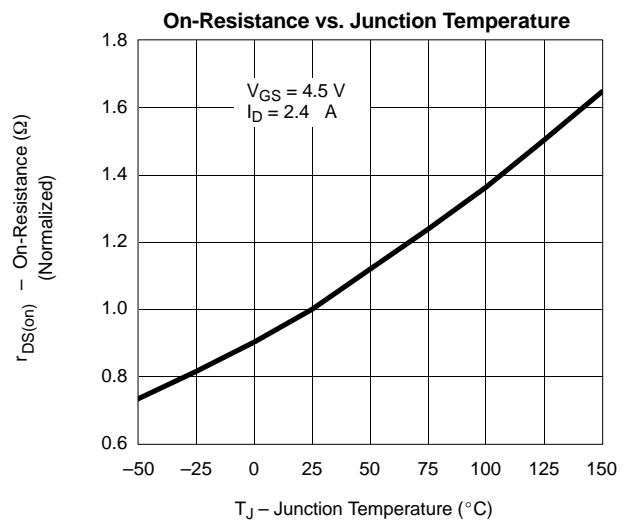
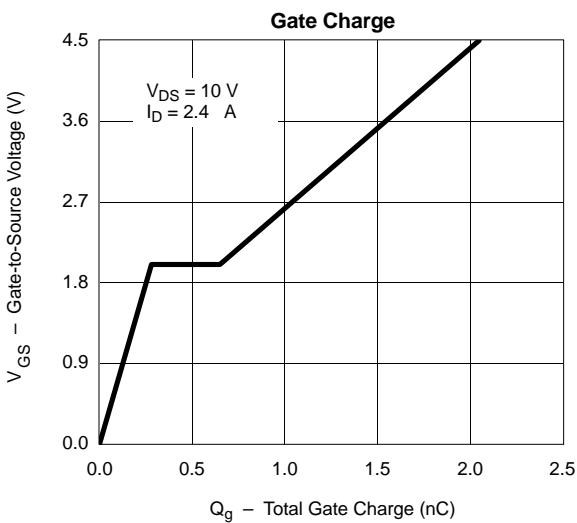
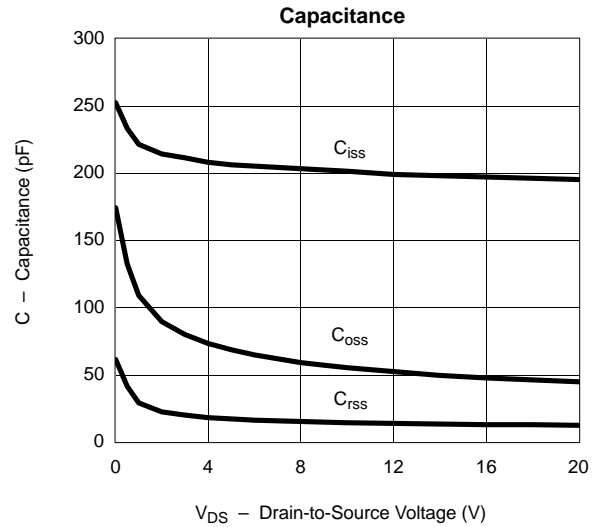
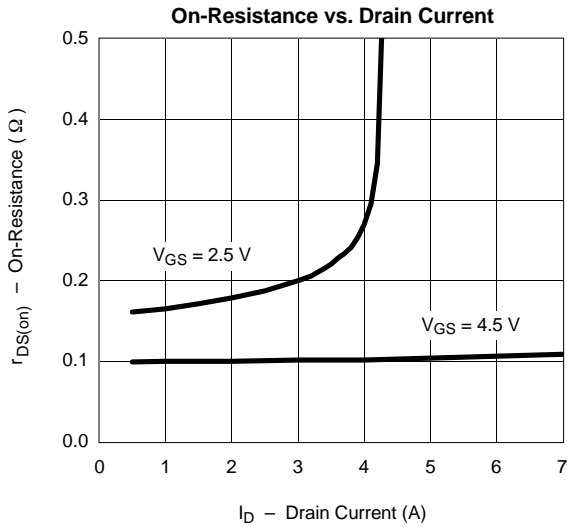
- a. Pulse test; pulse width  $\leq 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .
- b. Guaranteed by design, not subject to production testing.

### TYPICAL CHARACTERISTICS ( $25^\circ\text{C}$ UNLESS NOTED)





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



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

