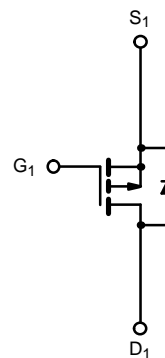
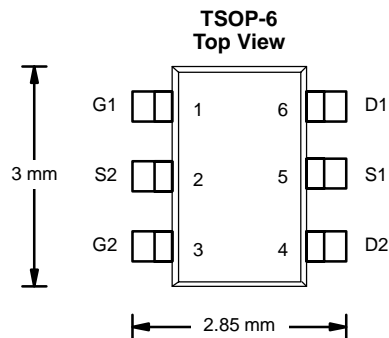


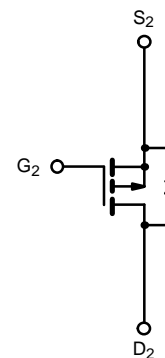


## Dual P-Channel 20-V (D-S) MOSFET

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-20	0.145 @ $V_{GS} = -4.5$ V	-2.2
	0.200 @ $V_{GS} = -2.5$ V	-1.8
	0.300 @ $V_{GS} = -1.8$ V	-1.5

**TrenchFET<sup>®</sup>**  
Power MOSFETs  
1.8-V Rated

P-Channel MOSFET



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	5 secs	Steady State
Drain-Source Voltage		$V_{DS}$	-20	
Gate-Source Voltage		$V_{GS}$	$\pm 8$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$T_A = 25^\circ\text{C}$	$I_D$	-2.2	-1.8
	$T_A = 70^\circ\text{C}$		-1.8	-1.5
Pulsed Drain Current		$I_{DM}$	$\pm 8$	
Continuous Diode Current (Diode Conduction) <sup>a</sup>		$I_S$	-1.05	-0.75
Maximum Power Dissipation <sup>a</sup>	$T_A = 25^\circ\text{C}$	$P_D$	1.15	0.83
	$T_A = 70^\circ\text{C}$		0.73	0.53
Operating Junction and Storage Temperature Range		$T_J, T_{stg}$	-55 to 150	

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	$R_{thJF}$	90	90	

## Notes

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

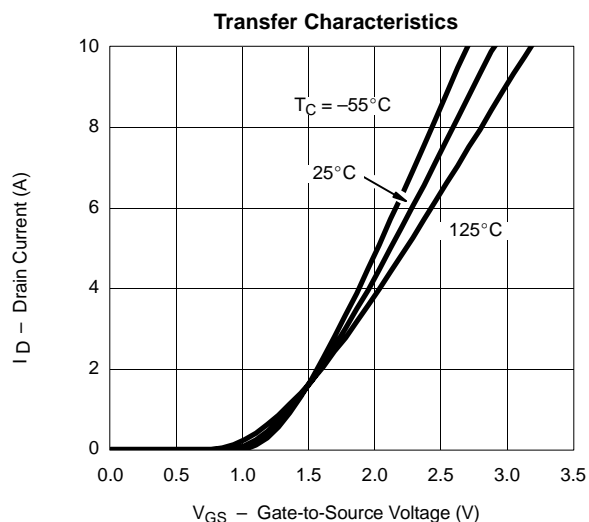
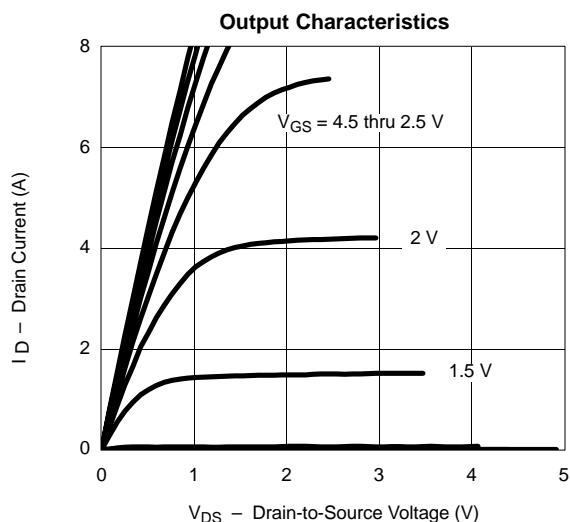
**SPECIFICATIONS ( $T_J = 25^\circ\text{C}$  UNLESS OTHERWISE NOTED)**

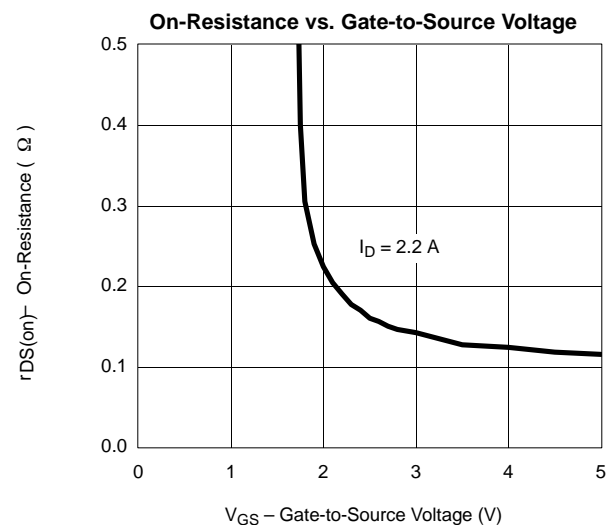
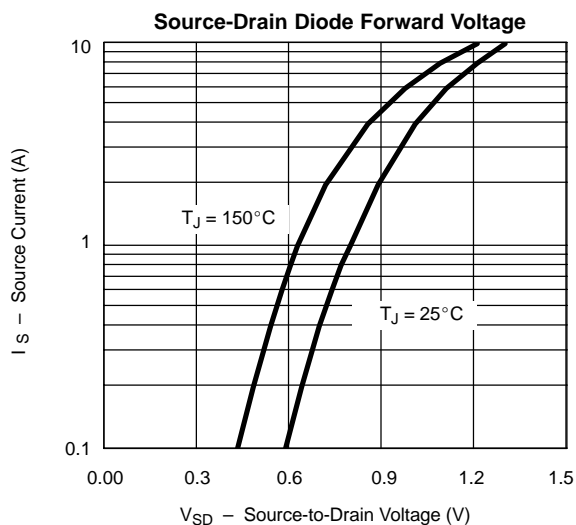
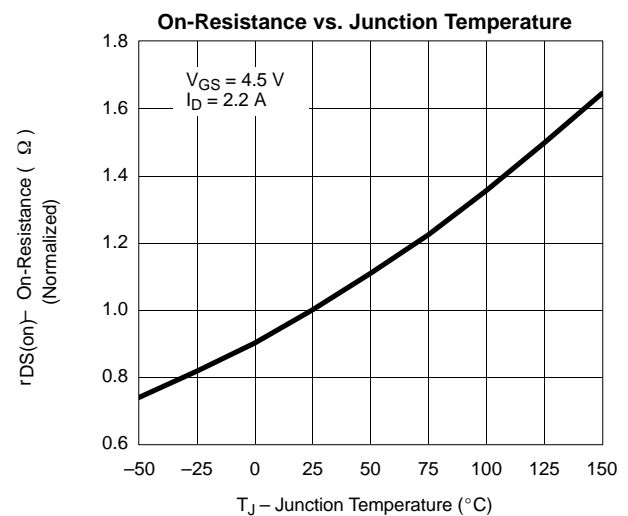
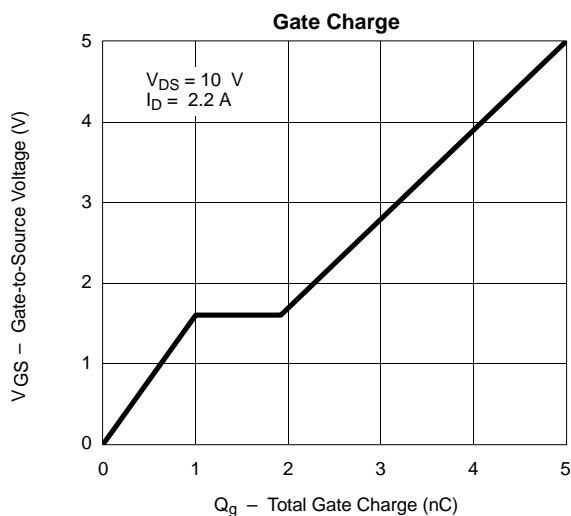
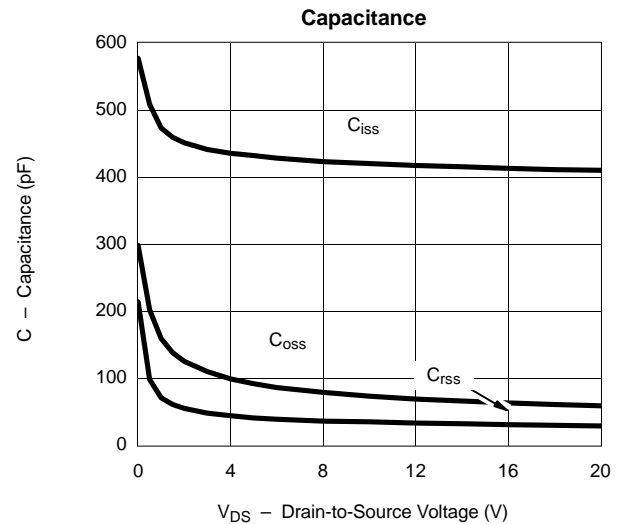
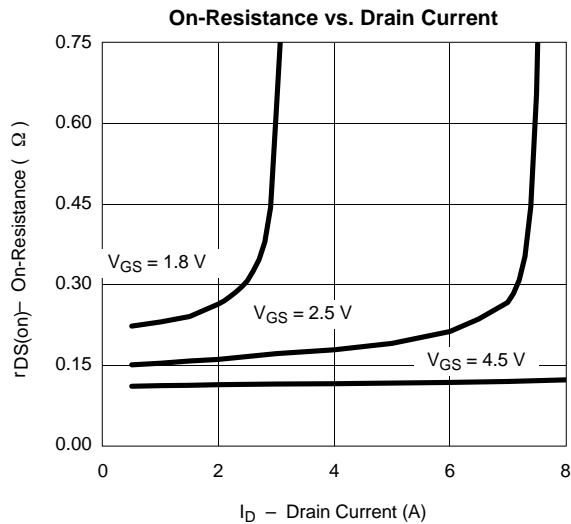
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -16\ \text{V}, V_{GS} = 0\ \text{V}$			-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>	$I_{D(on)}$	$V_{DS} = -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	-5			A
Drain-Source On-State Resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -2.2\ \text{A}$		0.115	0.145	$\Omega$
		$V_{GS} = -2.5\ \text{V}, I_D = -1.8\ \text{A}$		0.163	0.200	
		$V_{GS} = -1.8\ \text{V}, I_D = -1.0\ \text{A}$		0.240	0.300	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = -5\ \text{V}, I_D = -2.2\ \text{A}$		5		S
Diode Forward Voltage <sup>a</sup>	$V_{SD}$	$I_S = -1.05\ \text{A}, V_{GS} = 0\ \text{V}$		-0.8	-1.1	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = -10\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -2.2\ \text{A}$		5	7.5	nC
Gate-Source Charge	$Q_{gs}$			1		
Gate-Drain Charge	$Q_{gd}$			0.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -4\ \text{V}, R_L = 8\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$		12	20	ns
Rise Time	$t_r$			29	50	
Turn-Off Delay Time	$t_{d(off)}$			24	45	
Fall Time	$t_f$			30	50	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = -1.05\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		20	40	

## 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)**

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