



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

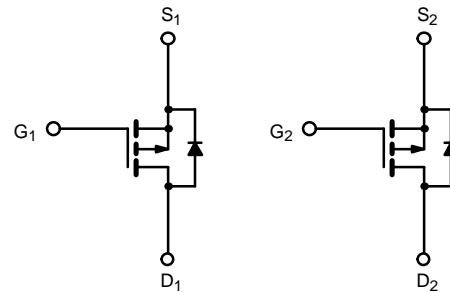
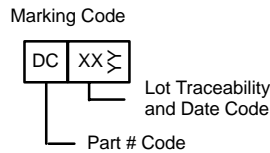
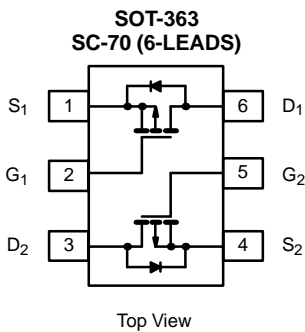
PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-20	0.490 @ $V_{GS} = -4.5$ V	-1.0
	0.750 @ $V_{GS} = -2.5$ V	-0.81
	1.10 @ $V_{GS} = -1.8$ V	-0.67

### FEATURES

- TrenchFET® Power MOSFETS: 1.8-V Rated
- Thermally Enhanced SC-70 Package

### APPLICATIONS

- Load Switching
- PA Switch
- Level Switch



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)					
Parameter	Symbol	5 secs	Steady State	Unit	
Drain-Source Voltage	$V_{DS}$	-20		V	
Gate-Source Voltage	$V_{GS}$	$\pm 8$			
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$I_D$	$T_A = 25^\circ\text{C}$	-1.0	-0.88	A
		$T_A = 85^\circ\text{C}$	-0.72	-0.63	
Pulsed Drain Current	$I_{DM}$	-3			
Continuous Diode Current (Diode Conduction) <sup>a</sup>	$I_S$	-0.61	-0.48		
Maximum Power Dissipation <sup>a</sup>	$P_D$	$T_A = 25^\circ\text{C}$	0.74	0.57	W
		$T_A = 85^\circ\text{C}$	0.38	0.30	
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>	$R_{thJA}$	$t \leq 5$ sec	130	170	$^\circ\text{C/W}$
		Steady State	170	220	
Maximum Junction-to-Foot (Drain)	$R_{thJF}$	80	100		

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

**SPECIFICATIONS (T<sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)**

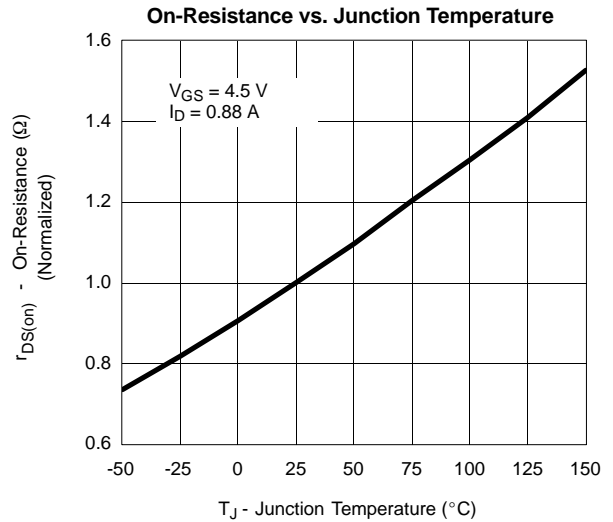
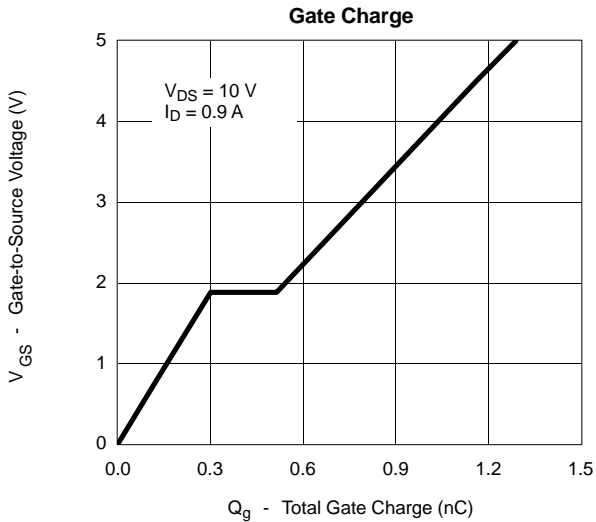
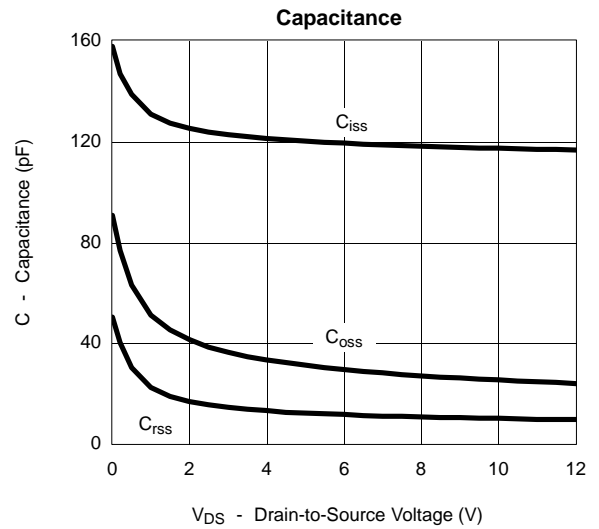
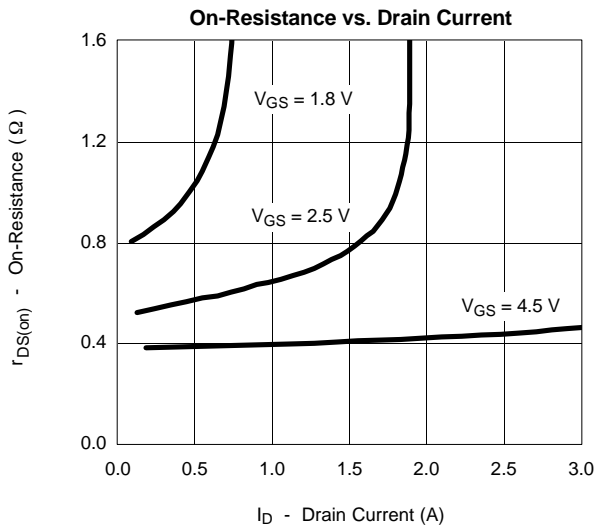
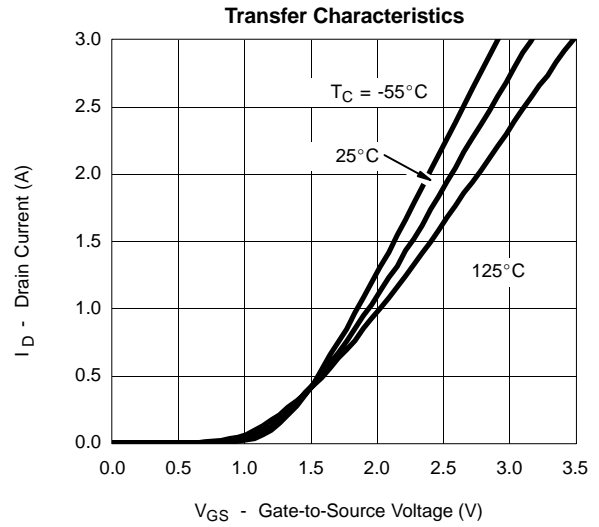
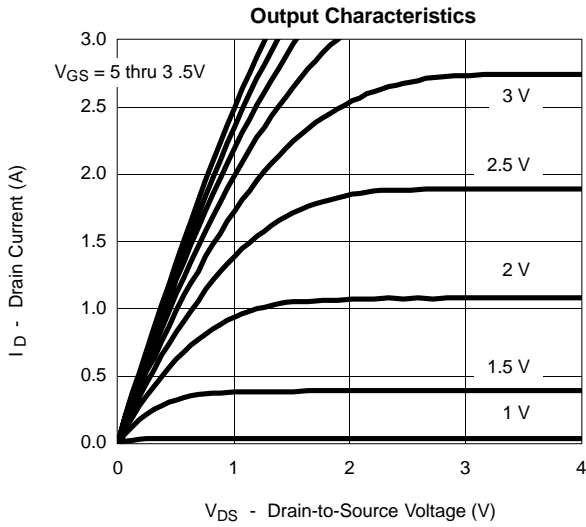
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -100 μA	-0.45		1	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±8 V			±100	nA
Zero Gate Voltage Drain Current	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			-5	
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	-2			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> = -0.88 A		0.400	0.490	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -0.71 A		0.610	0.750	
		V <sub>GS</sub> = -1.8 V, I <sub>D</sub> = -0.2 A		0.850	1.10	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -0.88 A		1.5		S
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = -0.47 A, V <sub>GS</sub> = 0 V		-0.85	-1.2	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> = -0.88 A		1.2	1.8	nC
Gate-Source Charge	Q <sub>gs</sub>			0.3		
Gate-Drain Charge	Q <sub>gd</sub>			0.21		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 20 Ω I <sub>D</sub> ≅ -0.5 A, V <sub>GEN</sub> = -4.5 V, R <sub>G</sub> = 6 Ω		18	30	ns
Rise Time	t <sub>r</sub>			25	40	
Turn-Off Delay Time	t <sub>d(off)</sub>			15	45	
Fall Time	t <sub>f</sub>			12	20	
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 0.47 A, di/dt = 100 A/μs		30	60	

## Notes

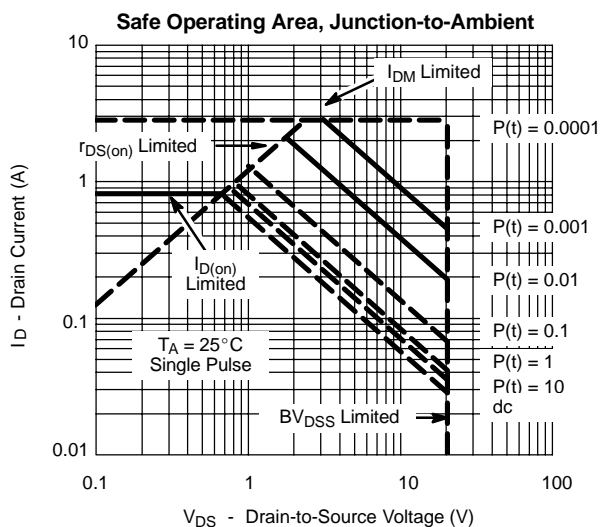
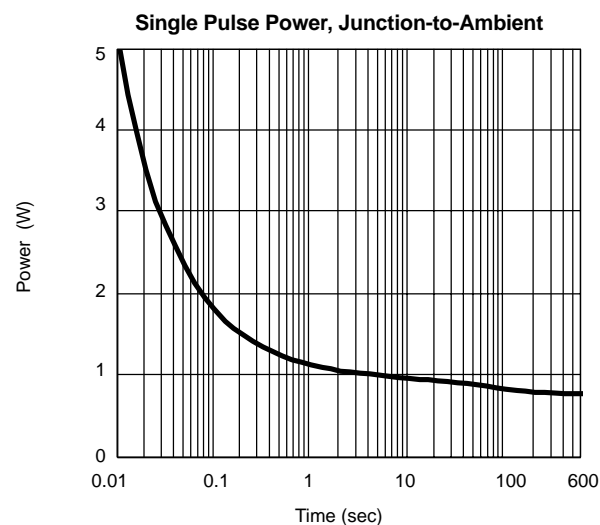
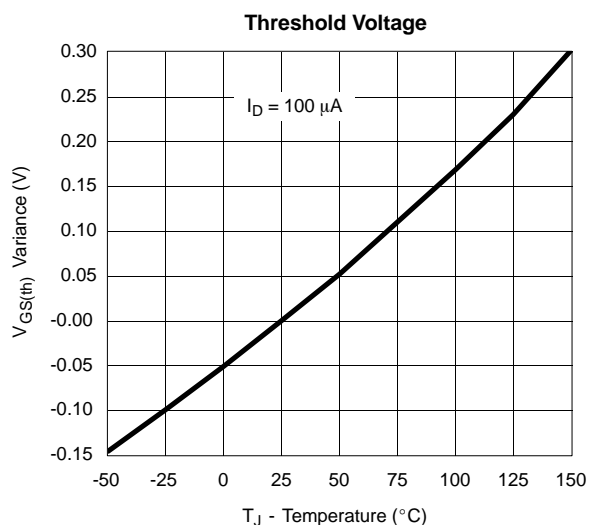
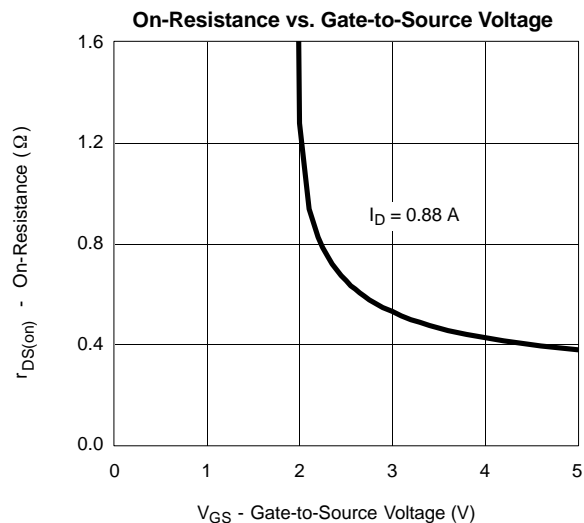
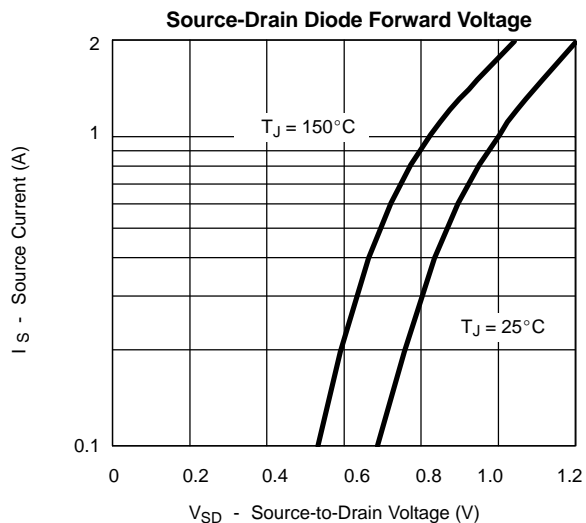
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.  
b. Guaranteed by design, not subject to production testing.



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



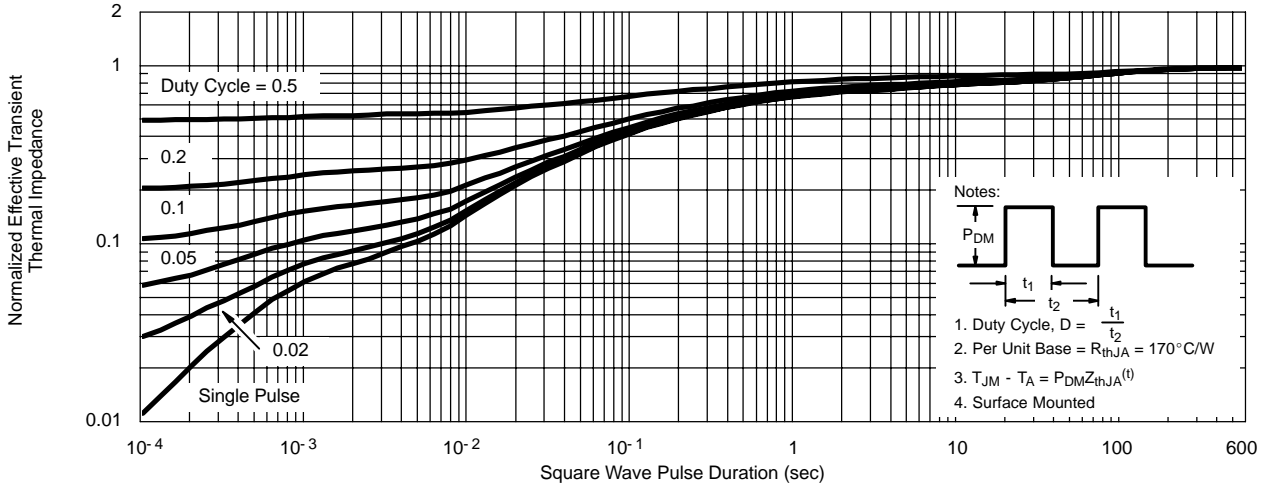
### TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)





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

Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot

