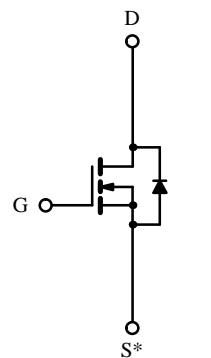
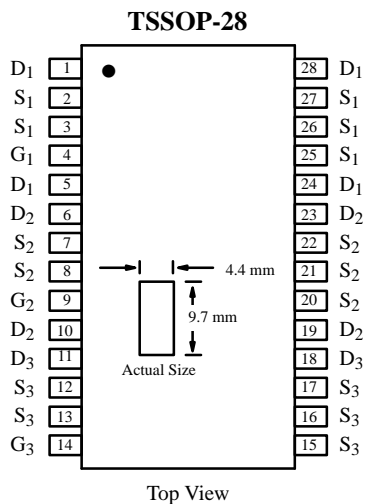


## Triple N-Channel 30-V (D-S) Rated MOSFET

### Product Summary

$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
30	0.028 @ $V_{GS} = 10$ V	$\pm 5.6$
	0.042 @ $V_{GS} = 4.5$ V	$\pm 4.5$

**TrenchFET™**  
Power MOSFETs



\*Source Pins 2, 3, 25, 26, and 27 must be tied common.

Source Pins 7, 8, 20, 21, and 22 must be tied common.

Source Pins 12, 13, 15, 16, and 17 must be tied common.

### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a</sup>	$I_D$	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
Pulsed Drain Current	$I_{DM}$	$\pm 30$	A
Continuous Source Current (Diode Conduction) <sup>a</sup>	$I_S$	1.25	
Maximum Power Dissipation <sup>a</sup>	$P_D$	$T_A = 25^\circ\text{C}$	W
		$T_A = 70^\circ\text{C}$	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ\text{C}$

### Thermal Resistance Ratings

Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient <sup>a</sup>	$R_{thJA}$	83	$^\circ\text{C}/\text{W}$

#### Notes

a. Surface Mounted on FR4 Board,  $t \leq 10$  sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70183. A SPICE Model data sheet is available for this product (FaxBack document #70563).

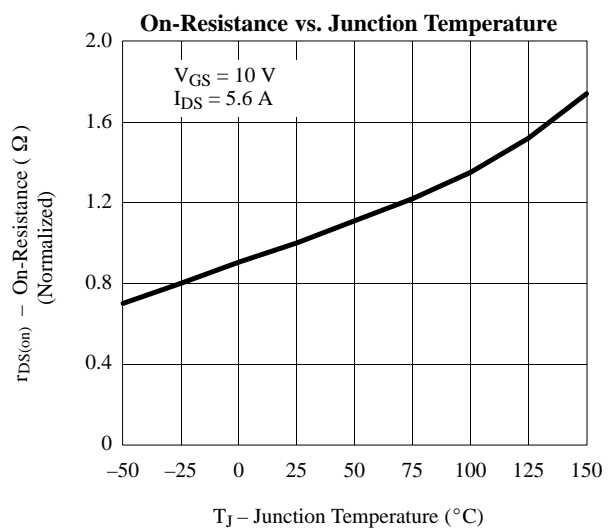
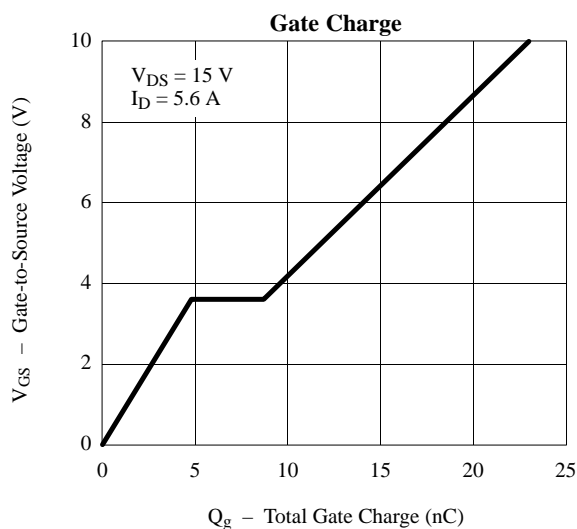
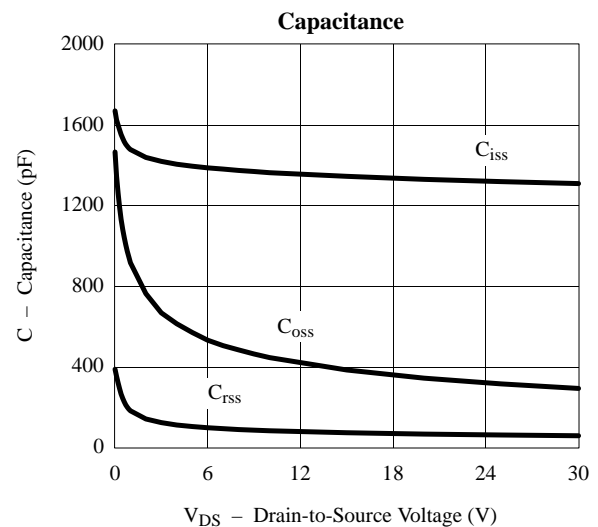
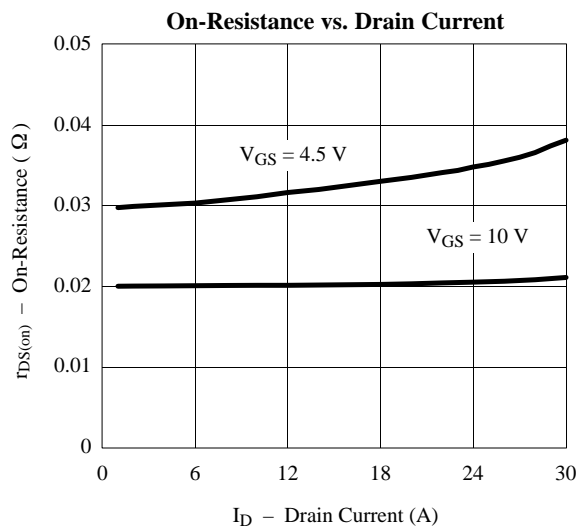
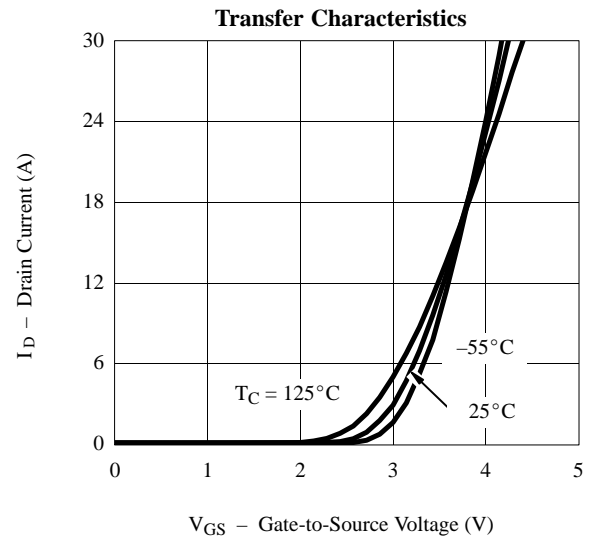
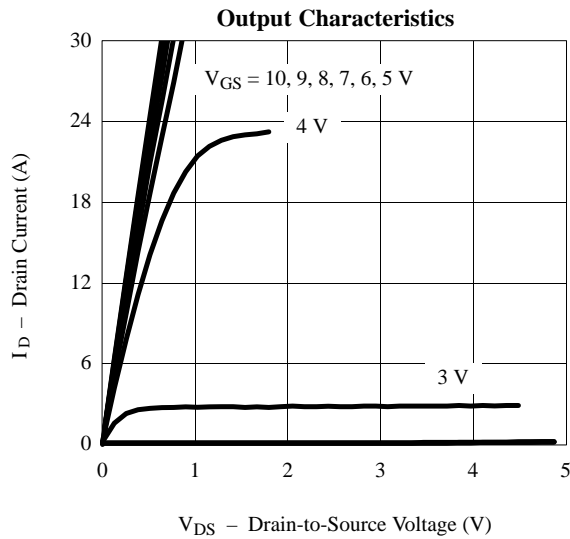
## Specifications ( $T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	1			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30 \text{ V}, V_{GS} = 0 \text{ V}$			1	$\mu\text{A}$
		$V_{DS} = 30 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			25	
On-State Drain Current <sup>a</sup>	$I_{D(on)}$	$V_{DS} = 5 \text{ V}, V_{GS} = 10 \text{ V}$	20			A
Drain-Source On-State Resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = 5.6 \text{ A}$		0.020	0.028	$\Omega$
		$V_{GS} = 4.5 \text{ V}, I_D = 3.5 \text{ A}$		0.030	0.042	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = 15 \text{ V}, I_D = 5.6 \text{ A}$		14		S
Diode Forward Voltage <sup>a</sup>	$V_{SD}$	$I_S = 1.25 \text{ A}, V_{GS} = 0 \text{ V}$		0.76	1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 15 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 5.6 \text{ A}$		22	30	nC
Gate-Source Charge	$Q_{gs}$			4.8		
Gate-Drain Charge	$Q_{gd}$			3.8		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15 \text{ V}, R_L = 15 \Omega$ $I_D \cong 1 \text{ A}, V_{GEN} = 10 \text{ V}, R_G = 6 \Omega$		13	20	ns
Rise Time	$t_r$			10	20	
Turn-Off Delay Time	$t_{d(off)}$			38	55	
Fall Time	$t_f$			15	30	
Source-Drain Reverse Recovery Time	$t_{rr}$	$I_F = 1.25 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$		50	80	

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)



## Typical Characteristics (25°C Unless Noted)

