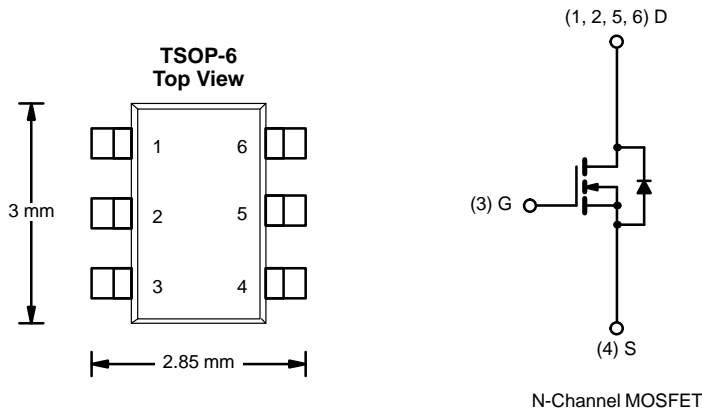




## N-Channel 60-V (D-S) MOSFET

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
60	0.10 @ $V_{GS} = 10$ V	$\pm 3.2$
	0.13 @ $V_{GS} = 4.5$ V	$\pm 2.8$

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



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	$\pm 60$	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ ) <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	$\pm 3.2$	A
	$T_A = 70^\circ\text{C}$	$\pm 2.5$	
Pulsed Drain Current	$I_{DM}$	$\pm 15$	
Single Avalanche Current	$I_{AS}$	$\pm 10$	
Maximum Power Dissipation <sup>a, b</sup>	$T_A = 25^\circ\text{C}$	2	W
	$T_A = 70^\circ\text{C}$	1.3	
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		62.5	$^\circ\text{C/W}$	
	Steady State	$R_{thJA}$	106		
Maximum Junction-to-Lead	Steady State	$R_{thJL}$	35		

Notes

- a. Surface Mounted on FR4 Board.
- b.  $t \leq 5$  sec.



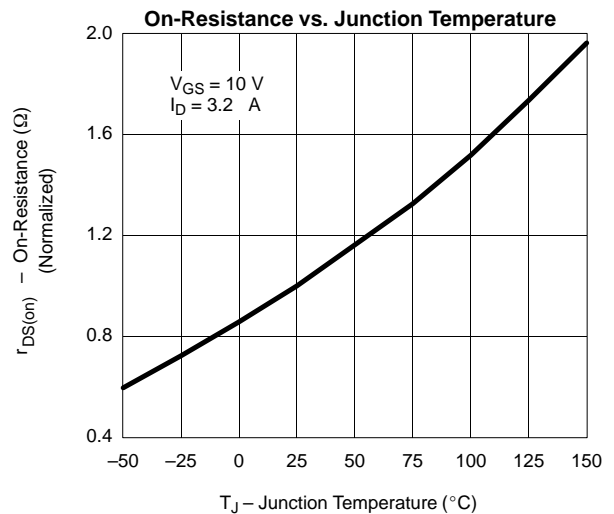
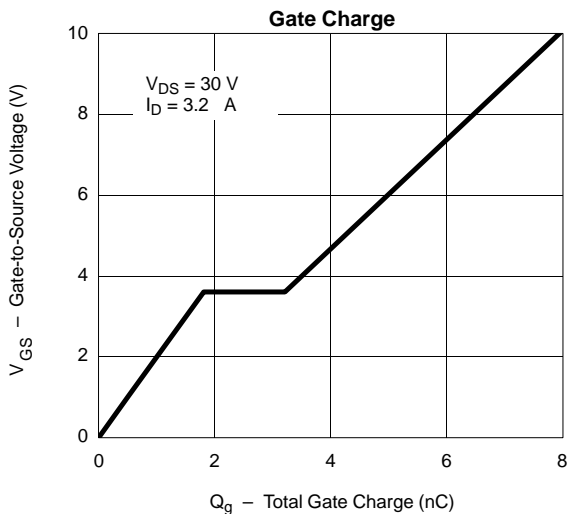
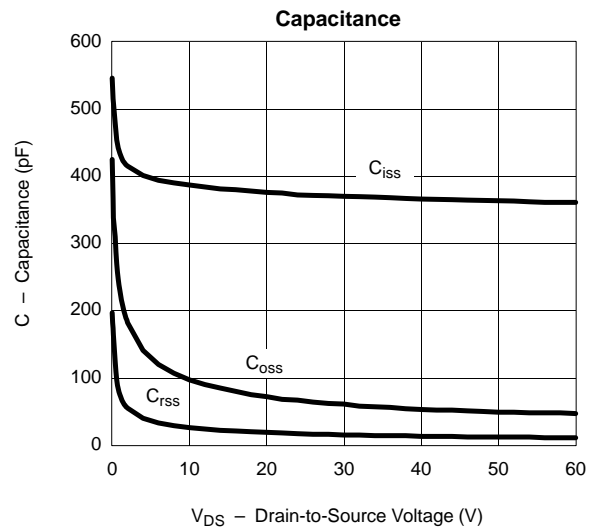
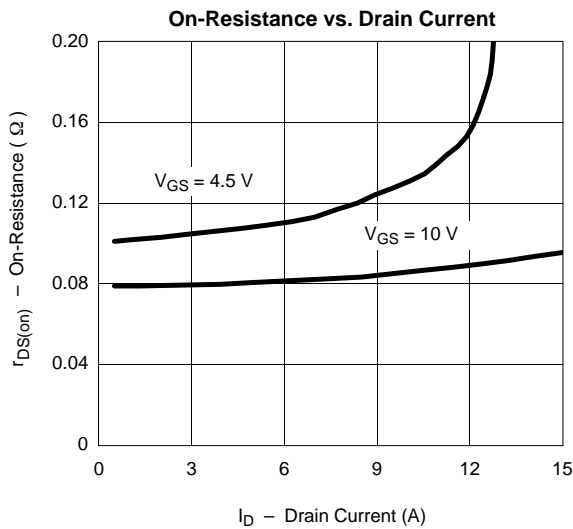
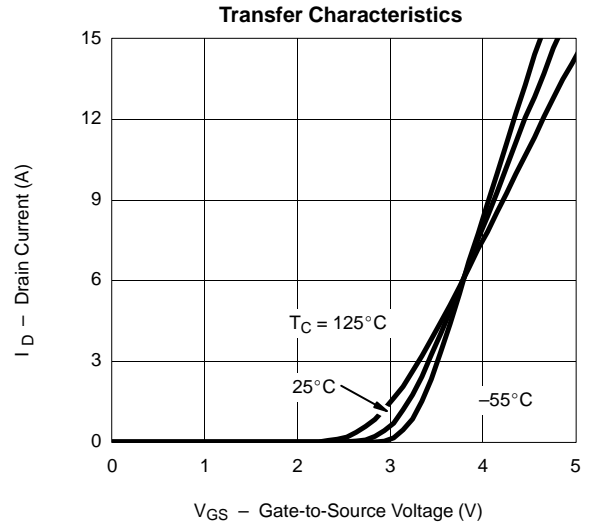
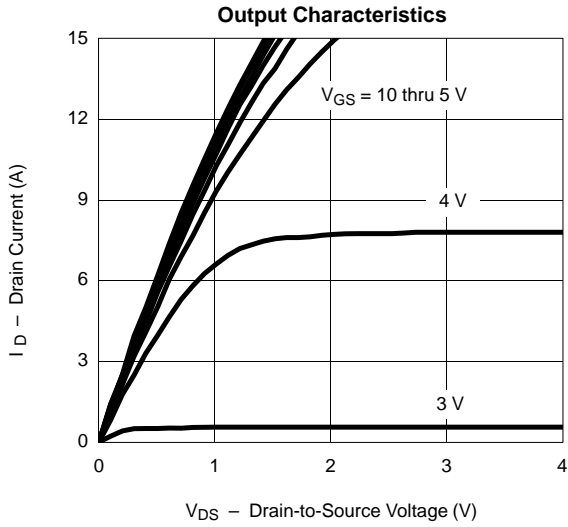
SPECIFICATIONS (T <sub>J</sub> = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>DS</sub> = 0 V, I <sub>D</sub> = 250 μA	60			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	1			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 48 V, V <sub>GS</sub> = 0 V			1	μA
		V <sub>DS</sub> = 48 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 150 °C			50	
On-State Drain Current <sup>a</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 10 V	10			A
Drain-Source On-State Resistance <sup>a</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 3.2 A		0.085	0.10	Ω
		V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 2.8 A		0.110	0.13	
Forward Transconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 4.5 V, I <sub>D</sub> = 3.2 A		8		S
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 30 V, V <sub>GS</sub> = 10 V, I <sub>D</sub> = 3.2 A		8	16	nC
Gate-Source Charge	Q <sub>gs</sub>			4.0		
Gate-Drain Charge	Q <sub>gd</sub>			2.0		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 30 V, R <sub>L</sub> = 30 Ω I <sub>D</sub> = 1 A, V <sub>GEN</sub> = 10 V, R <sub>G</sub> = 6 Ω		10	20	ns
Rise Time	t <sub>r</sub>			10	20	
Turn-Off Delay Time	t <sub>d(off)</sub>			20	40	
Fall Time	t <sub>f</sub>			10	20	
<b>Source-Drain Rating Characteristics<sup>b</sup></b>						
Continuous Current	I <sub>S</sub>				1.7	A
Pulsed Current	I <sub>SM</sub>				15	
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>S</sub> = 1.7 A, V <sub>GS</sub> = 0 V			1.2	V
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1.7 A, di/dt = 100 A/μs		50	90	ns

## 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)

