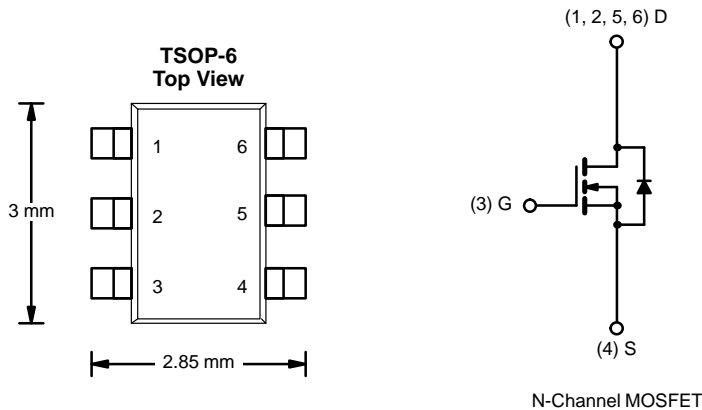




N-Channel 60-V (D-S) MOSFET

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

TrenchFET[®]
Power MOSFETs



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	± 60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^{a, b}	$T_A = 25^\circ\text{C}$	I_D	± 3.2	A
	$T_A = 70^\circ\text{C}$		± 2.5	
Pulsed Drain Current		I_{DM}	± 15	
Single Avalanche Current		I_{AS}	± 10	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	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 ^a	$t \leq 5$ sec	R_{thJA}		62.5	$^\circ\text{C/W}$
	Steady State		106		
Maximum Junction-to-Lead	Steady State	R_{thJL}	35		

Notes

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



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

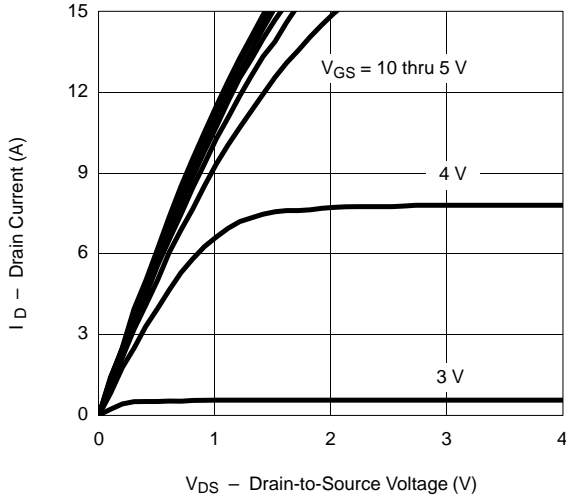
Notes

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

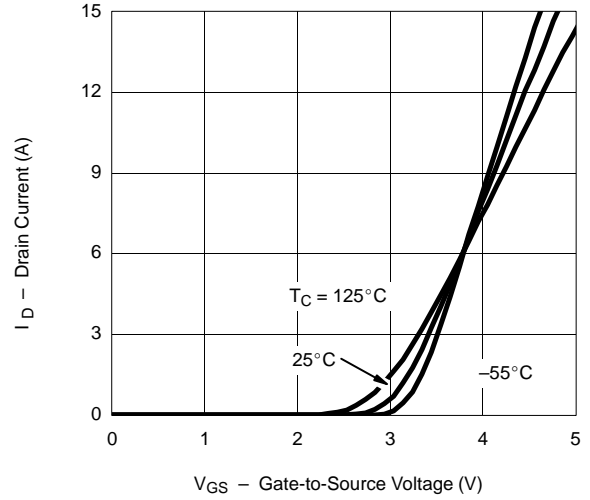


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

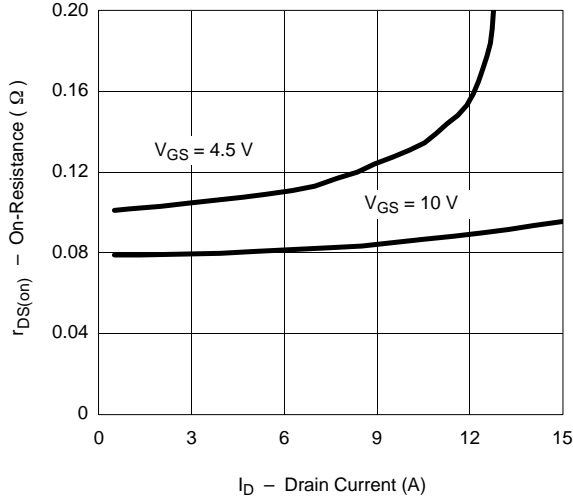
Output Characteristics



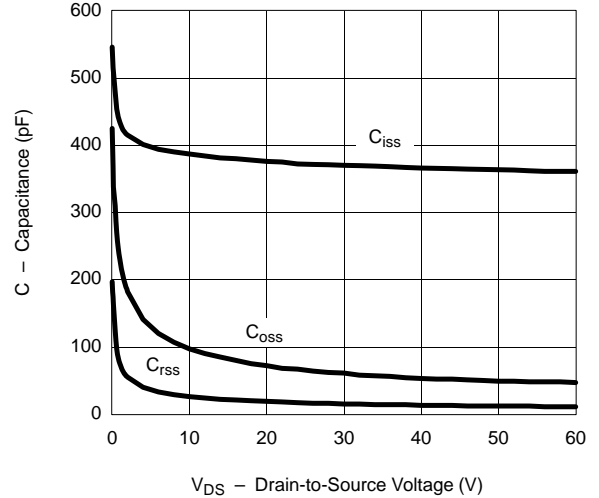
Transfer Characteristics



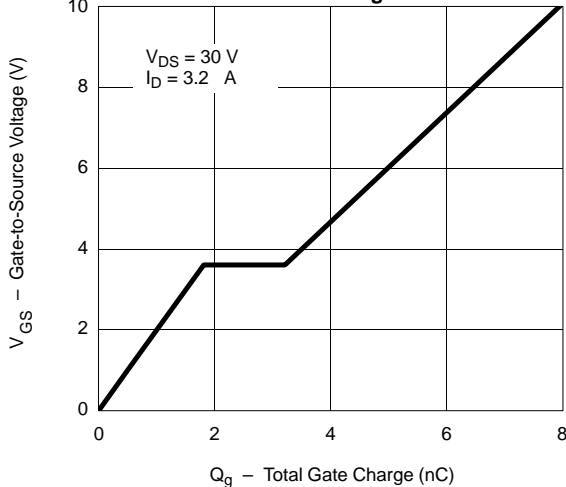
On-Resistance vs. Drain Current



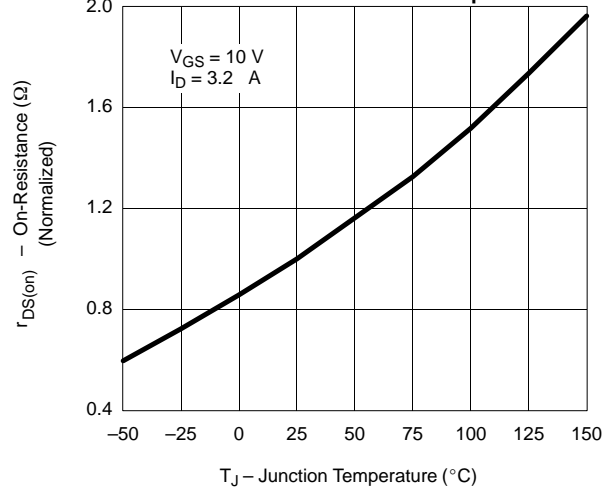
Capacitance



Gate Charge



On-Resistance vs. Junction Temperature





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

