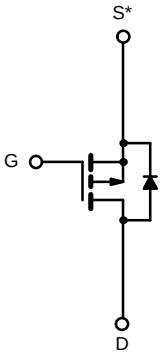
P-Channel 60-V (D-S) MOSFET

TrenchFET® Power MOSFETs

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
–60	0.120 @ V_{GS} = –10 V	±2.6
	0.150 @ V_{GS} = –4.5 V	±2.4

TSSOP-8

Top View



P-Channel MOSFET

* Source Pins 2, 3, 6 and 7 must be tied common.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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°C)[a]	T_A = 25°C	I_D	±2.6	A
	T_A = 70°C		±2.1	
Pulsed Drain Current		I_{DM}	±30	
Continuous Source Current (Diode Conduction)[a]		I_S	–1.25	
Maximum Power Dissipation[a]	T_A = 25°C	P_D	1.5	W
	T_A = 70°C		1.0	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	–55 to 150	°C

THERMAL RESISTANCE RATINGS			
Parameter	**Symbol**	**Limit**	**Unit**
Maximum Junction-to-Ambient[a]	R_{thJA}	83	°C/W

Notes
a. Surface Mounted on FR4 Board, t ≤ 10 sec.

For SPICE model information via the Worldwide Web: http://www.vishay.com/www/product/spice.htm

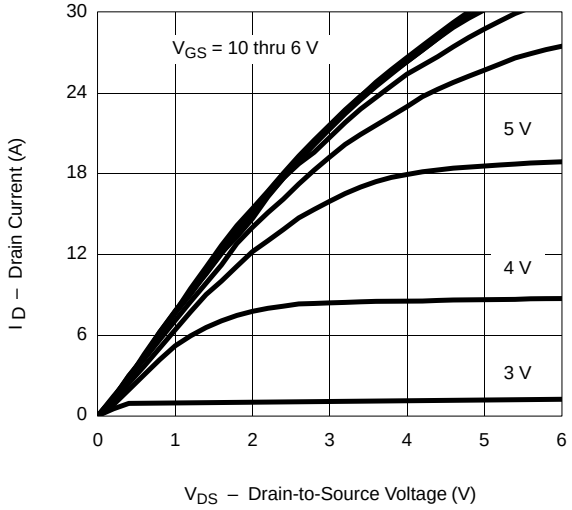
SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = –250 μA	–1.0			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = –60 V, V_{GS} = 0 V			–1	μA
		V_{DS} = –60 V, V_{GS} = 0 V, T_J = 70°C			–25	
On-State Drain Current[a]	$I_{D(on)}$	V_{DS} = –5 V, V_{GS} = –10 V	–20			A
Drain-Source On-State Resistance[a]	$r_{DS(on)}$	V_{GS} = –10 V, I_D = –2.6 A		0.100	0.120	Ω
		V_{GS} = –4.5 V, I_D = –2.4 A		0.125	0.150	
Forward Transconductance[a]	g_{fs}	V_{DS} = –15 V, I_D = –2.6 A		7.5		S
Diode Forward Voltage[a]	V_{SD}	I_S = –1.25 A, V_{GS} = 0 V		–0.8	–1.2	V
Dynamic[b]						
Total Gate Charge	Q_g	V_{DS} = –30 V, V_{GS} = –10 V, I_D = –2.6 A		16	25	nC
Gate-Source Charge	Q_{gs}			3.7		
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		8	15	ns
Rise Time	t_r			10	20	
Turn-Off Delay Time	$t_{d(off)}$			35	50	
Fall Time	t_f			12	25	
Source-Drain Reverse Recovery Time	t_{rr}	I_F = –1.25 A, di/dt = 100 A/μs		60	90	

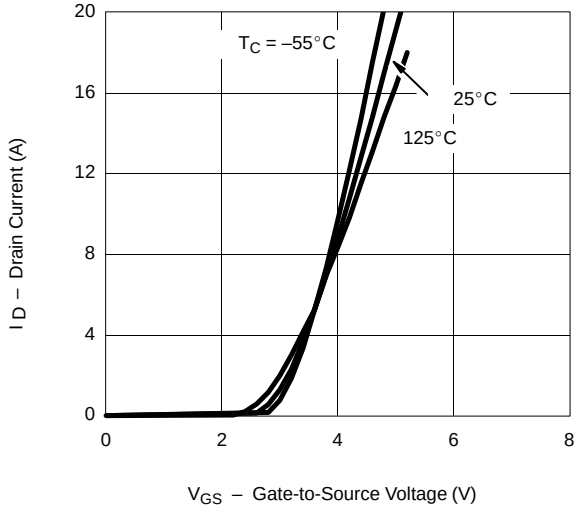
Notes
a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

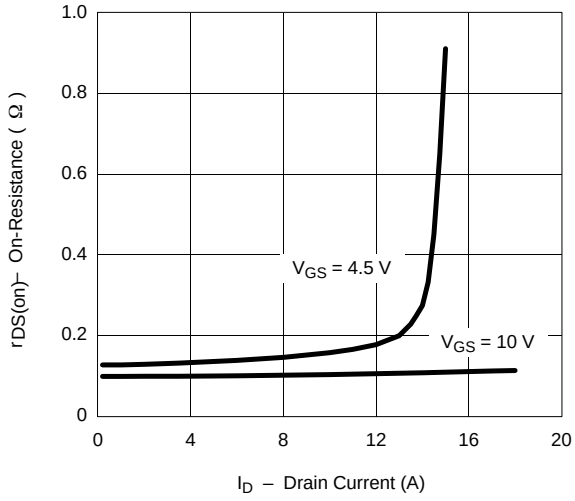
Output Characteristics



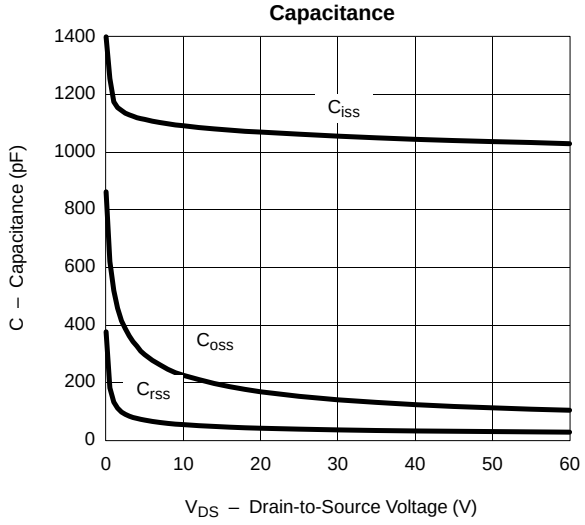
Transfer Characteristics



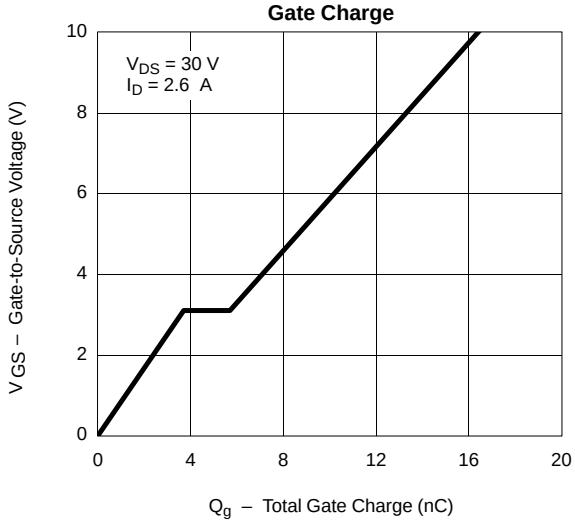
On-Resistance vs. Drain Current



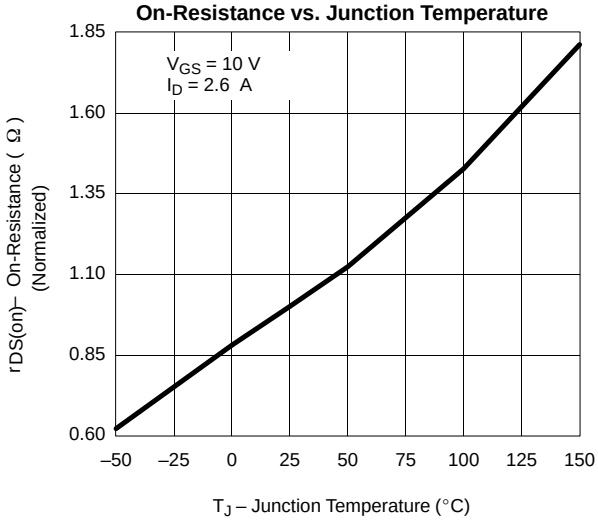
Capacitance



Gate Charge

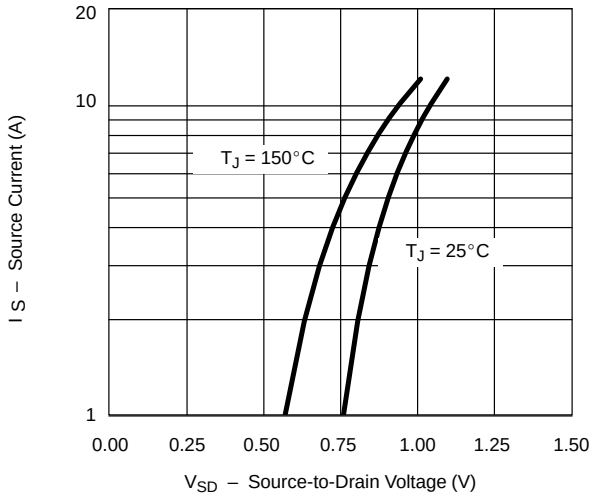


On-Resistance vs. Junction Temperature

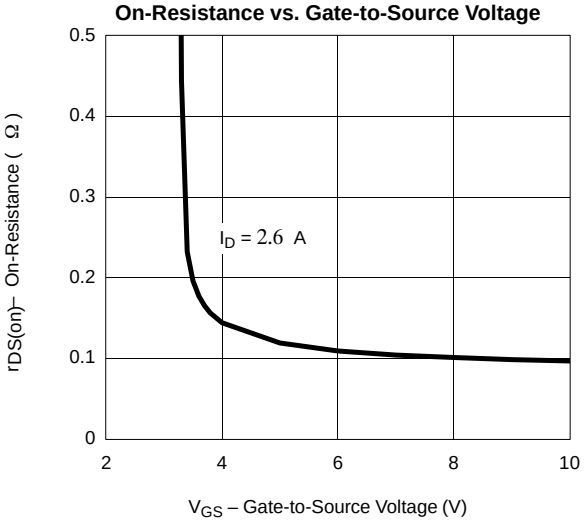


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

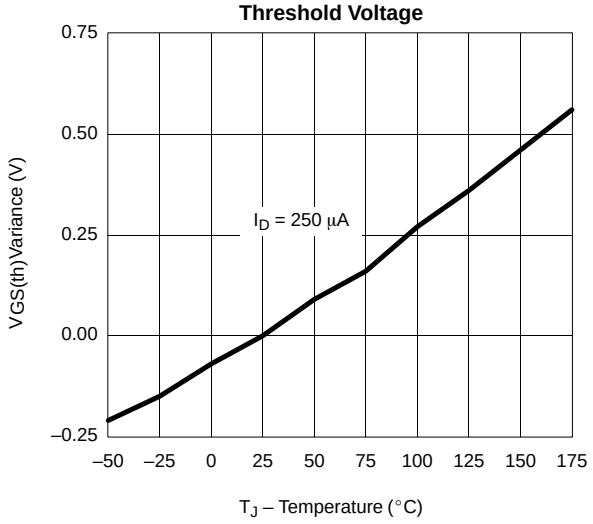
Source-Drain Diode Forward Voltage



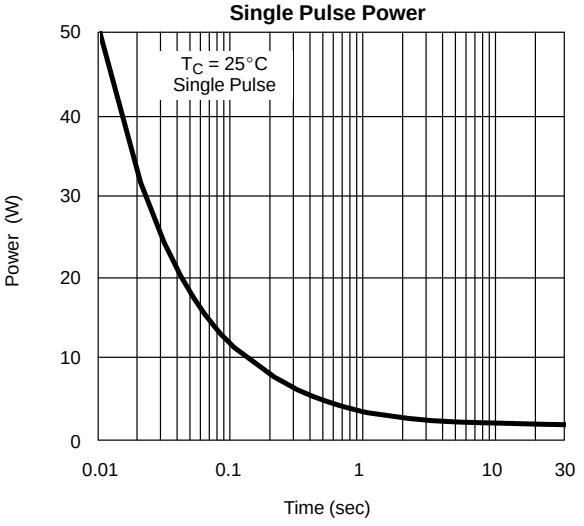
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient