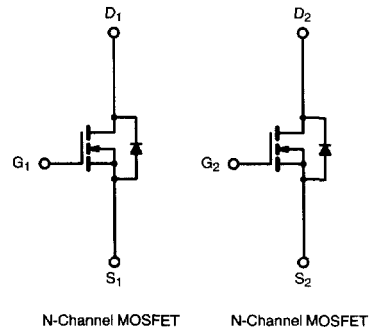
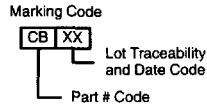
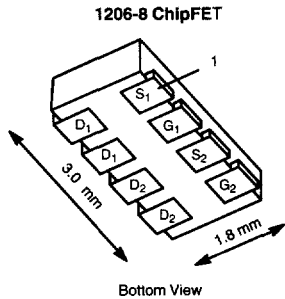




Dual N-Channel 2.5-V (G-S) MOSFET

TrenchFET®
Power MOSFETs
2.5-V Rated

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.075 @ V _{GS} = 4.5 V	± 4.2
	0.134 @ V _{GS} = 2.5 V	± 3.1



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V _{DS}	20		V
Gate-Source Voltage		V _{GS}	± 12		
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	I _D	± 4.2	± 3.1	A
	T _A = 85°C		± 3.0	± 2.2	
Pulsed Drain Current		I _{DM}	± 10		
Continuous Source Current (Diode Conduction) ^a		I _S	1.8	0.9	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	2.1	1.1	W
	T _A = 85°C		1.1	0.6	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	t ≤ 5 sec	R _{thJA}	50	60	°C/W
	Steady State		90	110	
Maximum Junction-to-Foot (Drain)	Steady State	R _{thJF}	30	40	

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

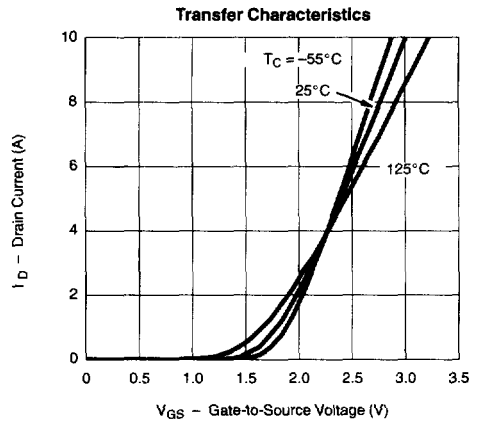
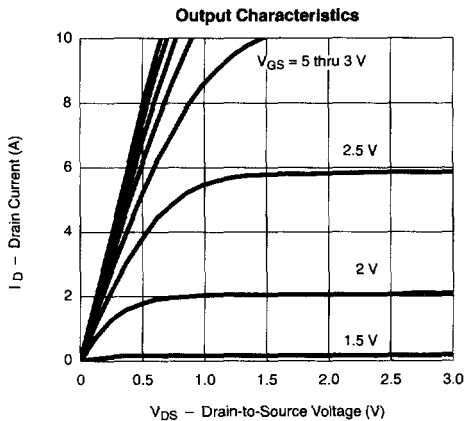


SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	0.6			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16 \text{ V}, V_{GS} = 0 \text{ V}$			1	μA
		$V_{DS} = 16 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 85^\circ\text{C}$			5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \geq 5 \text{ V}, V_{GS} = 4.5 \text{ V}$	10			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 4.5 \text{ V}, I_D = 3.1 \text{ A}$		0.065	0.075	Ω
		$V_{GS} = 2.5 \text{ V}, I_D = 2.3 \text{ A}$		0.115	0.143	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 10 \text{ V}, I_D = 3.1 \text{ A}$		8		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 0.9 \text{ A}, V_{GS} = 0 \text{ V}$		0.8	1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 10 \text{ V}, V_{GS} = 4.5 \text{ V}, I_D = 3.1 \text{ A}$		4	6	nC
Gate-Source Charge	Q_{gs}			0.6		
Gate-Drain Charge	Q_{gd}			1.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10 \text{ V}, R_L = 10 \Omega$ $I_D = 1 \text{ A}, V_{GEN} = 4.5 \text{ V}, R_G = 6 \Omega$		12	18	ns
Rise Time	t_r			35	55	
Turn-Off Delay Time	$t_{d(off)}$			19	30	
Fall Time	t_f			9	15	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 0.9 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$		40	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.

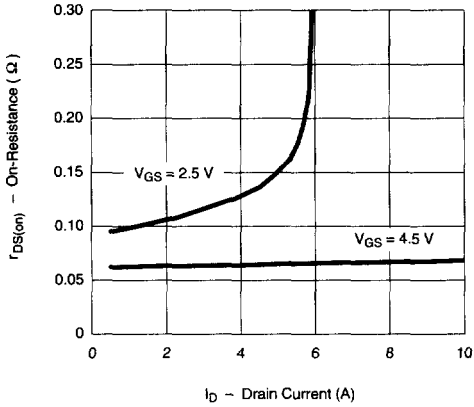
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



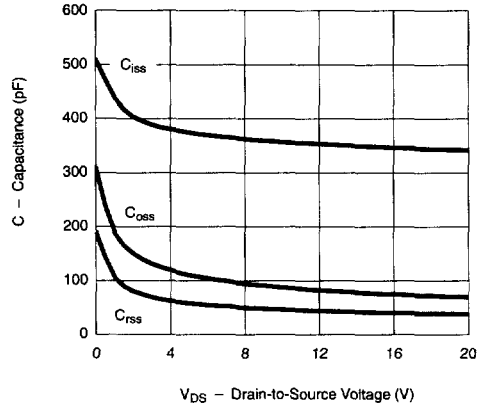


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

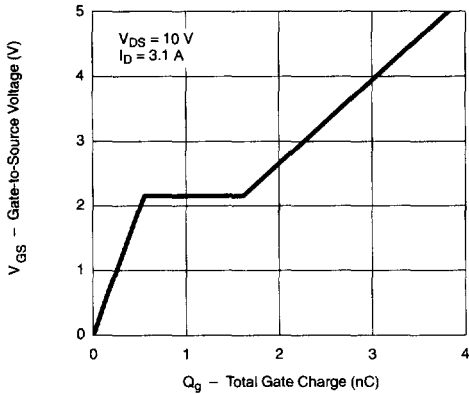
On-Resistance vs. Drain Current



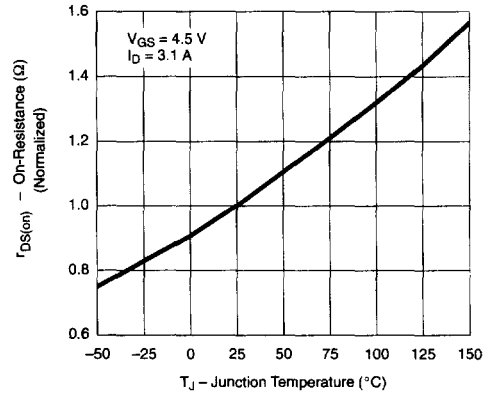
Capacitance



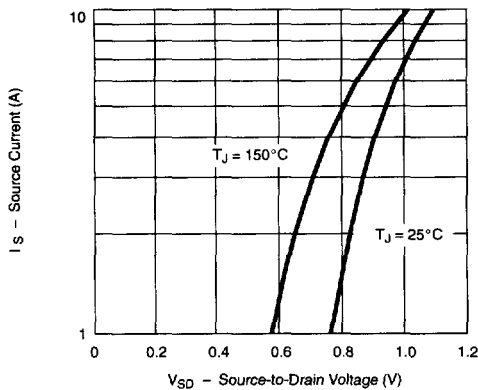
Gate Charge



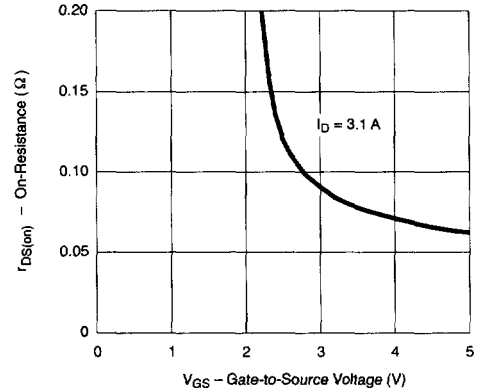
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

