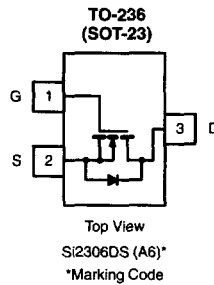




N-Channel 30-V (D-S) MOSFET

TrenchFET®
Power MOSFETs

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
30	0.057 @ V _{GS} = 10 V	± 3.5
	0.094 @ V _{GS} = 4.5 V	± 2.8



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	± 20	
Continuous Drain Current (T _J = 150°C) ^{a, b}	I _D	T _A = 25°C	± 3.5
		T _A = 70°C	± 2.8
Pulsed Drain Current	I _{DM}	± 16	A
Continuous Source Current (Diode Conduction) ^{a, b}	I _S	1.25	
Maximum Power Dissipation ^{a, b}	P _D	T _A = 25°C	1.25
		T _A = 70°C	0.80
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	R _{θJA}	t ≤ 5 sec	100	°C/W
		Steady State	130	

Notes
a. Surface Mounted on FR4 Board.
b. t ≤ 5 sec.



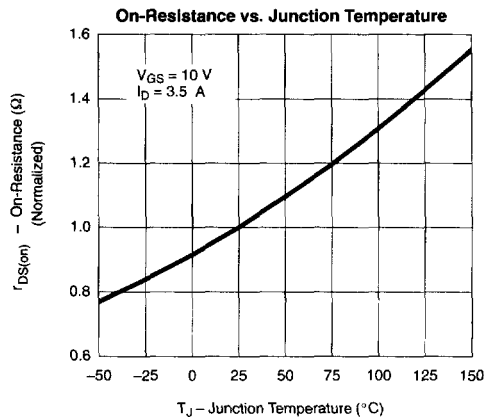
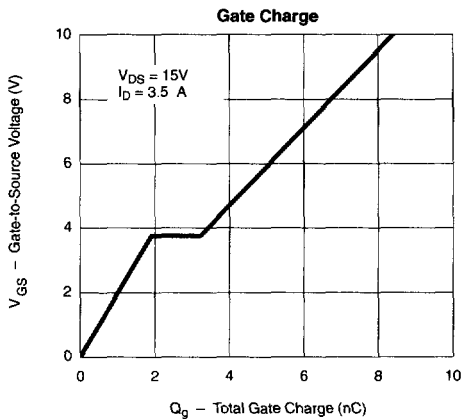
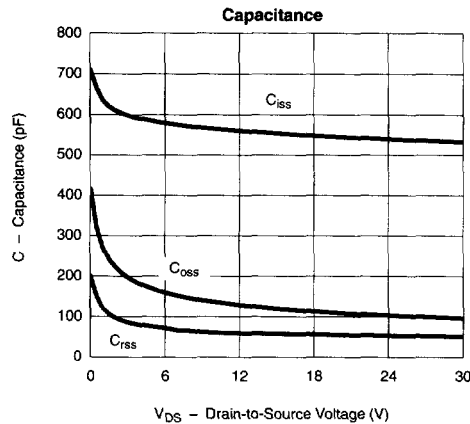
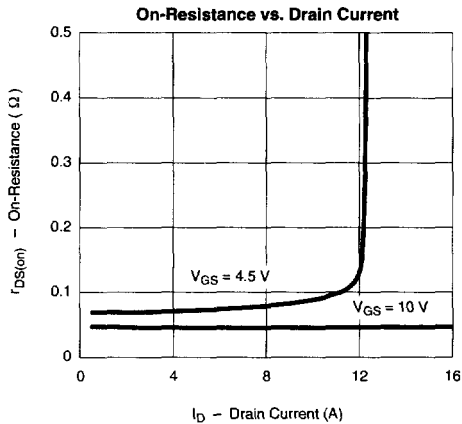
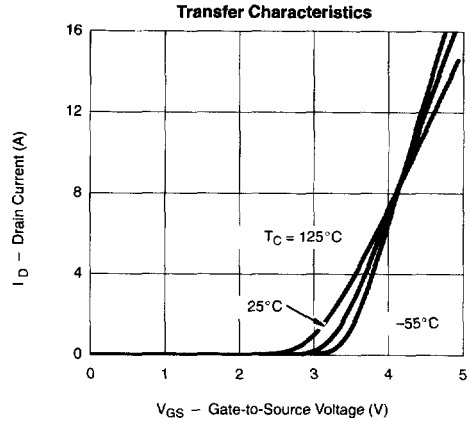
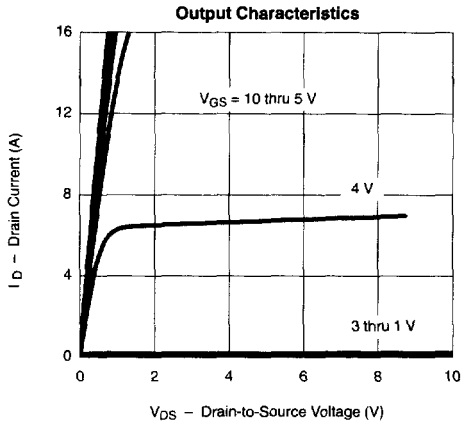
SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{DS} = 0 V, I _D = 250 μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V			0.5	μA
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 55°C			10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 4.5 V, V _{GS} = 10 V	6			A
		V _{DS} ≥ 4.5 V, V _{GS} = 4.5 V	4			
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 3.5 A		0.046	0.057	Ω
		V _{GS} = 4.5 V, I _D = 2.8 A		0.070	0.094	
Forward Transconductance ^a	g _{fs}	V _{DS} = 4.5 V, I _D = 3.5 A		6.9		S
Diode Forward Voltage ^a	V _{SD}	I _S = 1.25 A, V _{GS} = 0 V		0.8	1.2	V
Dynamic^b						
Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 5 V, I _D = 3.5 A		4.2	7	nC
Total Gate Charge	Q _{gt}	V _{DS} = 15 V, V _{GS} = 10 V, I _D = 3.5 A		8.5	20	
Gate-Source Charge	Q _{gs}			1.9		
Gate-Drain Charge	Q _{gd}			1.35		
Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V, f = 1 MHz		555		pF
Output Capacitance	C _{oss}			120		
Reverse Transfer Capacitance	C _{rss}			60		
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15 V, R _L = 15 Ω I _D = 1 A, V _{GEN} = 10 V, R _G = 6 Ω		9	20	ns
Rise Time	t _r			7.5	18	
Turn-Off Delay Time	t _{d(off)}			17	35	
Fall Time	t _f			5.2	12	

Notes

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



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

