

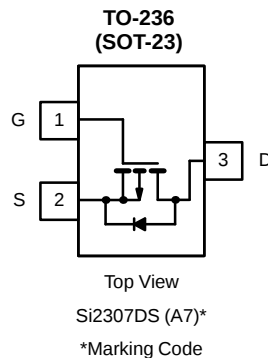


P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.080 @ $V_{GS} = -10$ V	-3
	0.140 @ $V_{GS} = -4.5$ V	-2

TrenchFET®
Power MOSFETs



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^{a, b}	$T_A = 25^\circ\text{C}$	I_D	-3	A
	$T_A = 70^\circ\text{C}$		-2.5	
Pulsed Drain Current		I_{DM}	-12	
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	-1.25	
Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	1.25	W
	$T_A = 70^\circ\text{C}$		0.8	
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}		100	$^\circ\text{C/W}$
	Steady State		130		

Notes

- a. Surface mounted on FR4 board.
b. $t \leq 5$ sec.

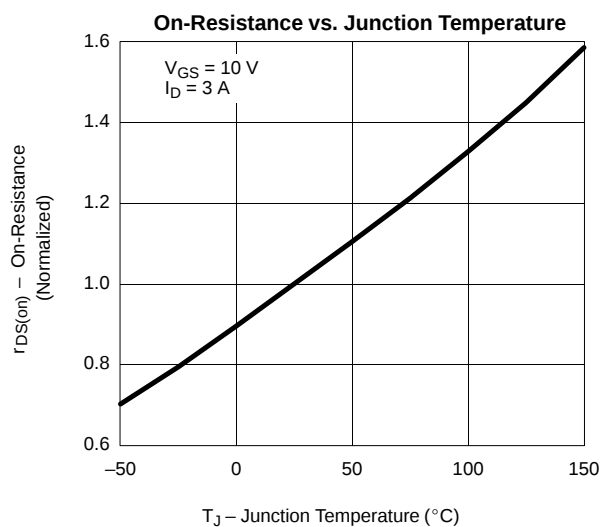
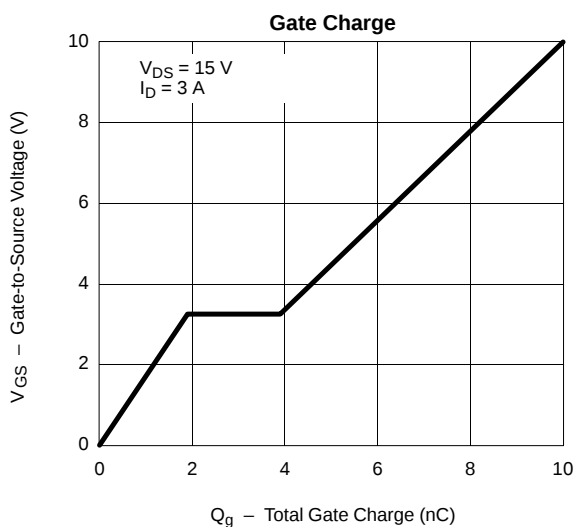
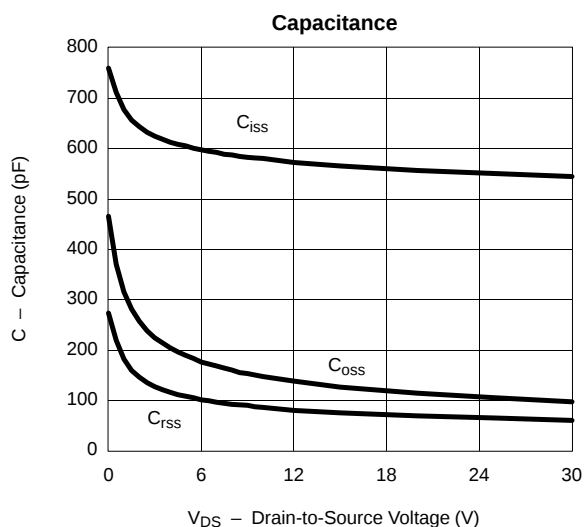
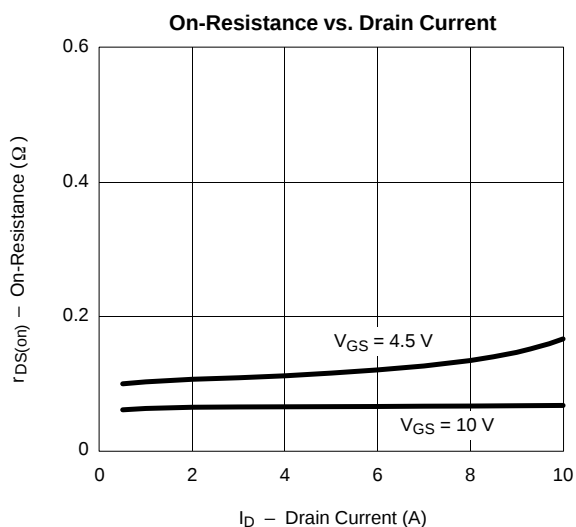
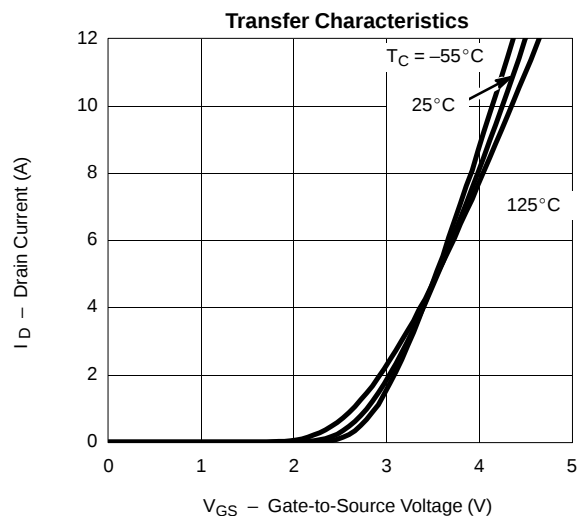
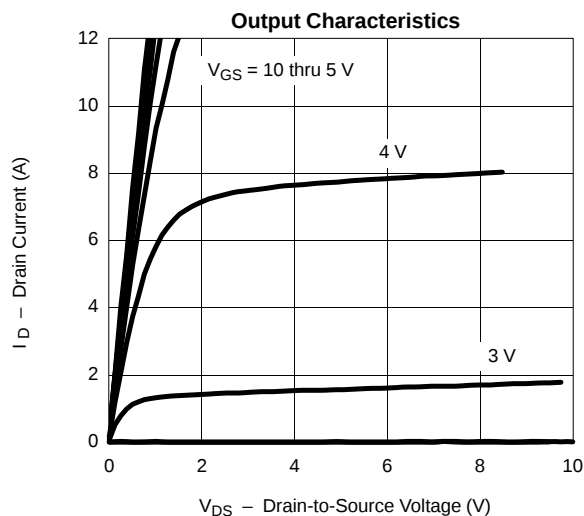
SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = −10 μA	−30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = −250 μA	−1.0			
Gate-Body 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			−1	μA
		T _J = 55 °C			−10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≤ −5 V, V _{GS} = −10 V	−6			A
Drain-Source On-Resistance ^a	r _{DS(on)}	V _{GS} = −10 V, I _D = −3 A		0.064	0.080	Ω
		V _{GS} = −4.5 V, I _D = −2.5 A		0.103	0.140	
Forward Transconductance ^a	g _{fs}	V _{DS} = −10V, I _D = −3 A		4.5		S
Diode Forward Voltage	V _{SD}	I _S = −1.25 A, V _{GS} = 0 V			−1.2	V
Dynamic ^b						
Total Gate Charge	Q _g	V _{DS} = −15 V, V _{GS} = −10 V I _D ≅ −3 A		10	15	nC
Gate-Source Charge	Q _{gs}			1.9		
Gate-Drain Charge	Q _{gd}			2		
Input Capacitance	C _{iss}	V _{DS} = −15 V, V _{GS} = 0, f = 1 MHz		565		pF
Output Capacitance	C _{oss}			126		
Reverse Transfer Capacitance	C _{rss}			75		
Switching ^b						
Turn-On Time	t _{d(on)}	V _{DD} = −15 V, R _L = 15 Ω I _D ≅ −1.0 A, V _{GEN} = −10 V R _G = 6 Ω		10	20	ns
	t _r			9	20	
Turn-Off Time	t _{d(off)}			27	50	
	t _f			7	16	

Notes

- Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.
- For DESIGN AID ONLY, not subject to production testing.
- Switching time is essentially independent of operating temperature.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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