

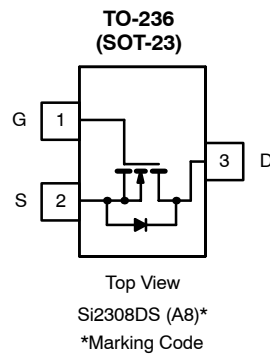
N-Channel 60-V (D-S) MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
60	0.16 @ $V_{GS} = 10$ V	2.0
	0.22 @ $V_{GS} = 4.5$ V	1.7

FEATURES

- 100% R_g Tested



Ordering Information: Si2308DS-T1

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	I_D	$T_A = 25^\circ\text{C}$	2.0	A
		$T_A = 70^\circ\text{C}$	1.6	
Pulsed Drain Current ^b	I_{DM}	10		
Continuous Source Current (Diode Conduction) ^a	I_S	1.0		
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	1.25	W
		$T_A = 70^\circ\text{C}$	0.80	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$	

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Maximum	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	100	$^\circ\text{C/W}$
Maximum Junction-to-Ambient ^c		166	

Notes

- Surface Mounted on FR4 Board, $t = \leq 5$ sec.
- Pulse width limited by maximum junction temperature.
- Surface Mounted on FR4 Board



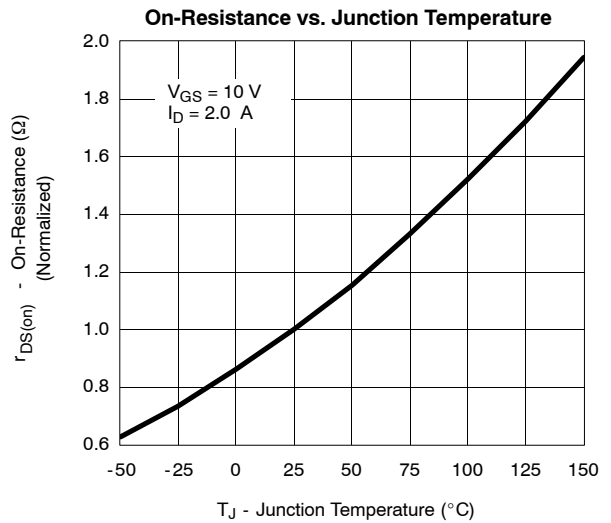
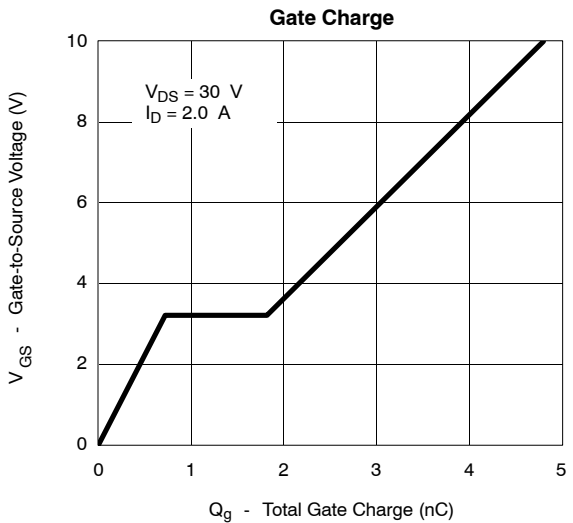
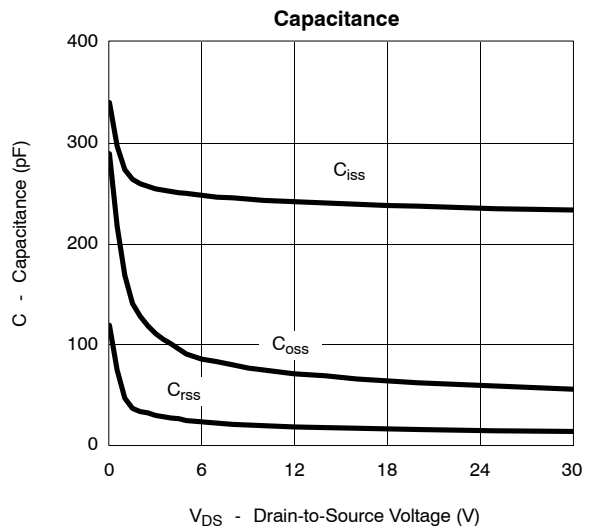
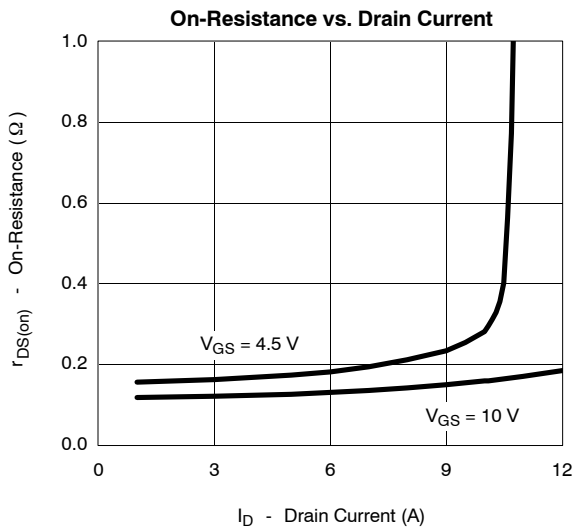
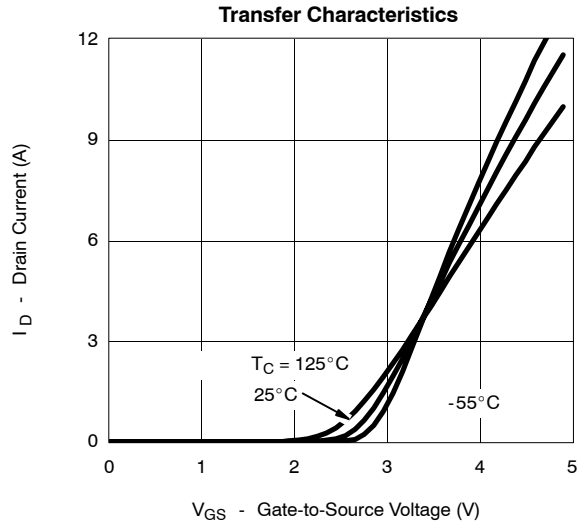
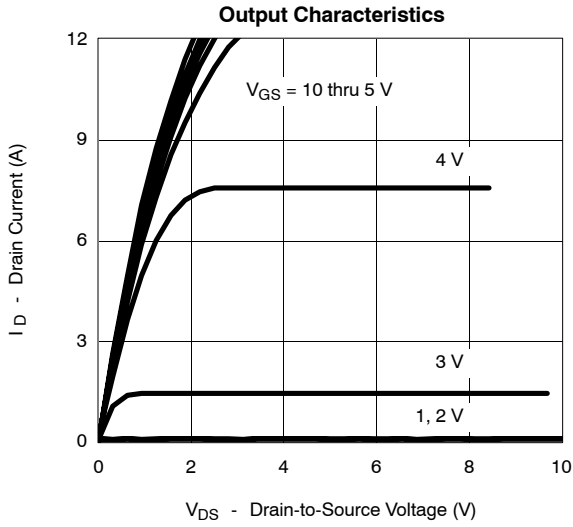
SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{DS} = 0 V, I _D = 250 μA	60			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.5			
Gate-Body Leakage	I _{GSS}	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			0.5	μA
		V _{DS} = 60 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 = 2.0 A		0.125	0.16	Ω
		V _{GS} = 4.5 V, I _D = 1.7 A		0.155	0.22	
Forward Transconductance ^a	g _{fs}	V _{DS} = 4.5 V, I _D = 2.0 A		4.6		S
Diode Forward Voltage ^a	V _{SD}	I _S = 1 A, V _{GS} = 0 V		0.77	1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} = 30 V, V _{GS} = 10 V, I _D = 2.0 A		4.8	10	nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.0		
Gate Resistance	R _g		0.5		3.3	Ω
Input Capacitance	C _{iss}	V _{DS} = 25 V, V _{GS} = 0 V, f = 1 MHz		240		pF
Output Capacitance	C _{oss}			50		
Reverse Transfer Capacitance	C _{rss}			15		
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 30 V, R _L = 30 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω		7	15	ns
Rise Time	t _r			10	20	
Turn-Off Delay Time	t _{d(off)}			17	35	
Fall Time	t _f			6	15	

Notes

a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





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