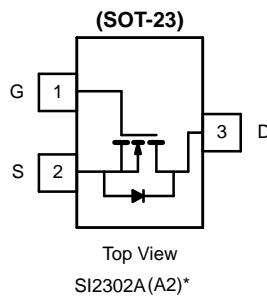




N-Channel 1.25-W, 2.5-V MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	0.040 @ $V_{GS} = 4.5$ V	3.0
	0.060 @ $V_{GS} = 2.5$ V	2.0



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^b	$T_A = 25^\circ\text{C}$ I_D	3.0	A
Pulsed Drain Current ^a		10	
Continuous Source Current (Diode Conduction) ^b		1.6	
Power Dissipation ^b	$T_A = 25^\circ\text{C}$ P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^b	R_{thJA}	100	$^\circ\text{C/W}$
Maximum Junction-to-Ambient ^c		166	

Notes

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



SPECIFICATIONS (T _A = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 μA	20			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.5		1.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			50	nA
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 55 °C				
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	6			A
		V _{DS} ≥ 5 V, V _{GS} = 2.5 V	4			
Drain-Source On-Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 3.0 A			0.040	Ω
		V _{GS} = 2.5 V, I _D = 2.0 A			0.060	
Forward Transconductance ^a	g _{fs}	V _{DS} = 5 V, I _D = 3.0 A		10		S
Diode Forward Voltage	V _{SD}	I _S = 1.0 A, V _{GS} = 0 V			1.28	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 3.6 A		5.4	10	nC
Gate-Source Charge	Q _{gs}			0.65		
Gate-Drain Charge	Q _{gd}			1.60		
Input Capacitance	C _{iss}	V _{DS} = 10 V, V _{GS} = 0 V, f = 1 MHz		340		pF
Output Capacitance	C _{oss}			115		
Reverse Transfer Capacitance	C _{rss}			33		
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 5.5 Ω I _D ≅ 3.6 A, V _{GEN} = 4.5 V, R _G = 6 Ω		12	25	ns
Rise Time	t _r			36	60	
Turn-Off Delay Time	t _{d(off)}			34	60	
Fall-Time	t _f			10	25	

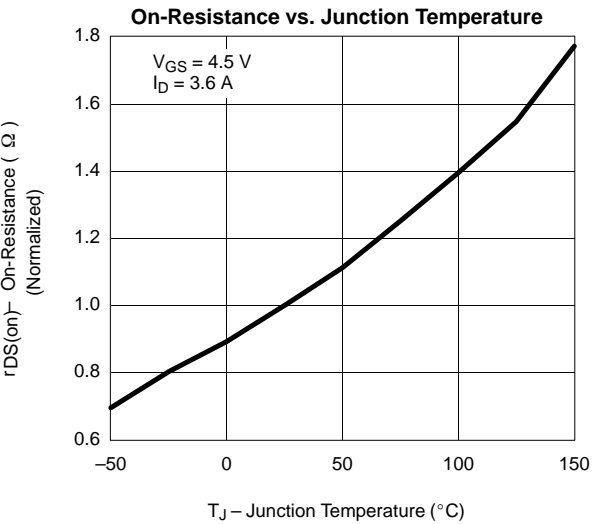
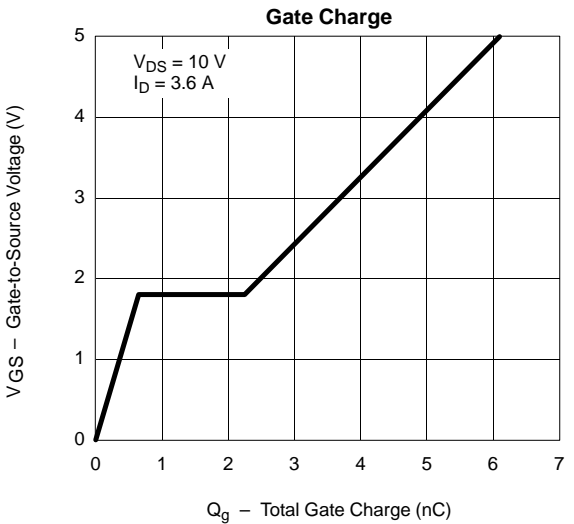
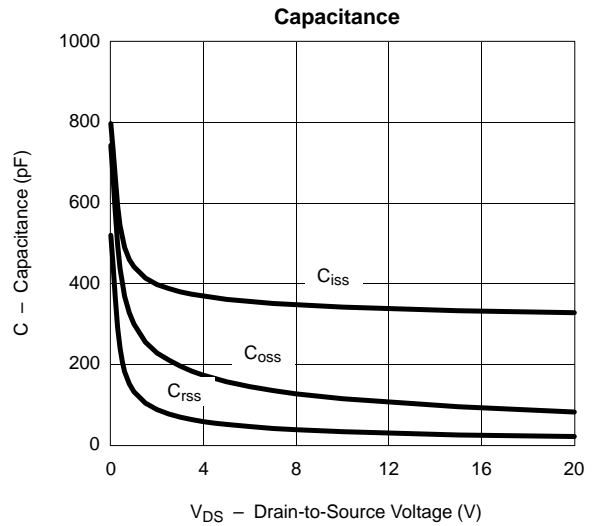
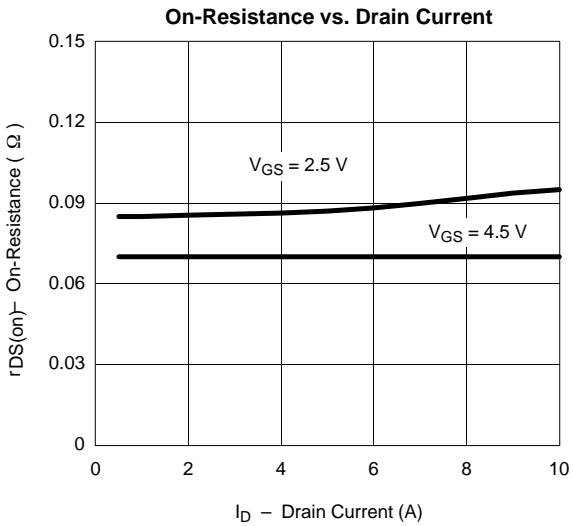
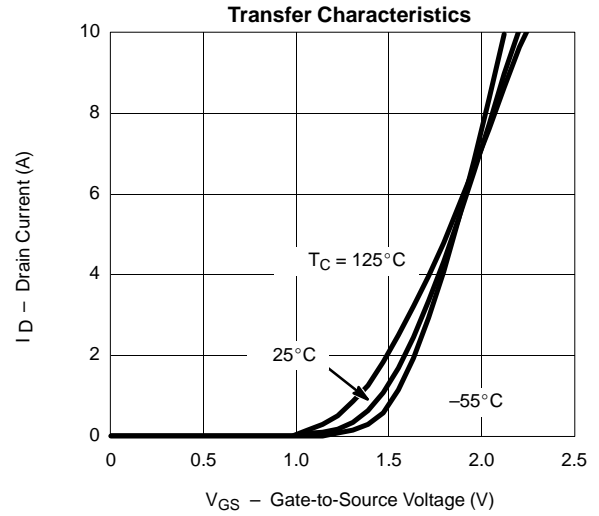
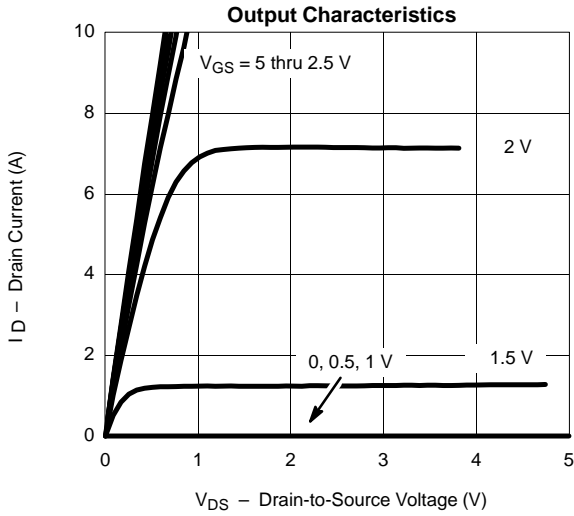
Notes

a. Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.

VNLR02



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

