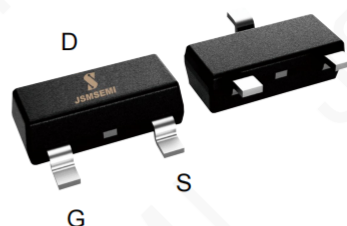


Features

- ◆ $V_{DS}=20V$
 $R_{DS(ON)}, V_{GS}@4.5V, I_{DS}@2.8A < 45m\Omega$
 $R_{DS(ON)}, V_{GS}@2.5V, I_{DS}@3.1A < 65m\Omega$

Applications

- ◆ Advanced trench process technology
 High Density Cell Design Fo Ultra Low
 On-Resistance High Power and Current
 handing capability Ideal for Liion battery
 pack applications



SOT-23



Schematic diagram

Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current		I_D	3.0	A
Pulsed Drain Current ¹⁾		I_{DM}	8	
Maximum Power Dissipation	TA = 25°C	P_D	1.25	W
	TA = 75°C		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾		$R_{\theta JA}$	78	°C/W

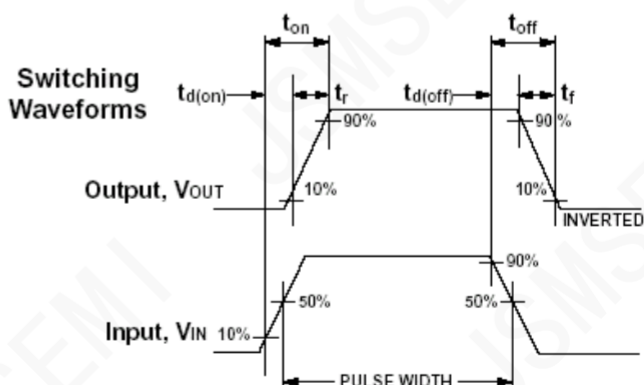
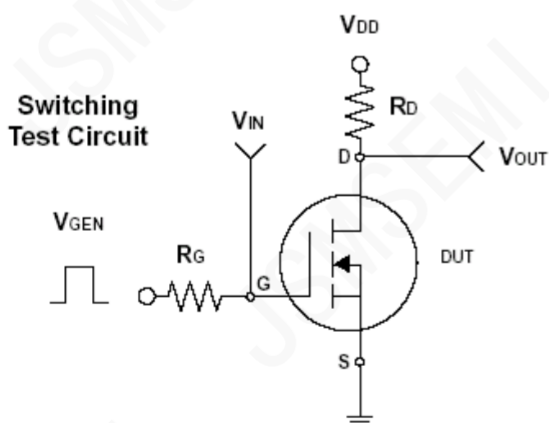
Notes

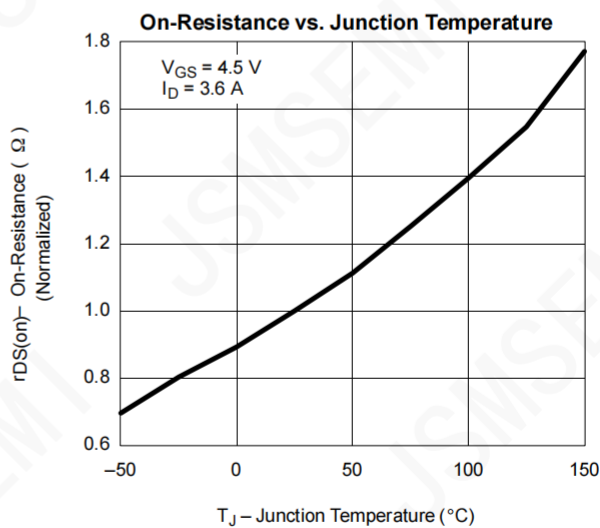
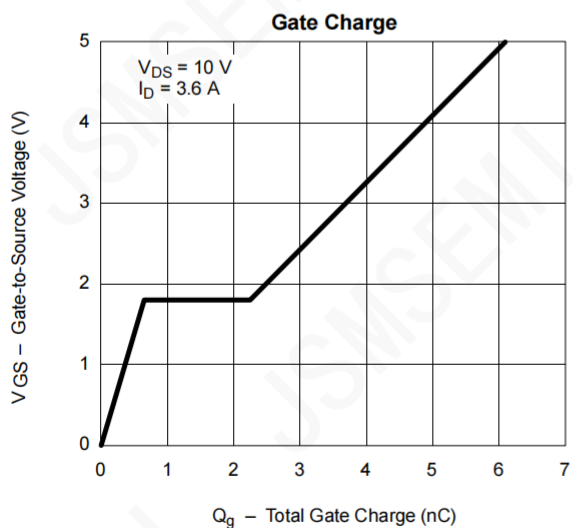
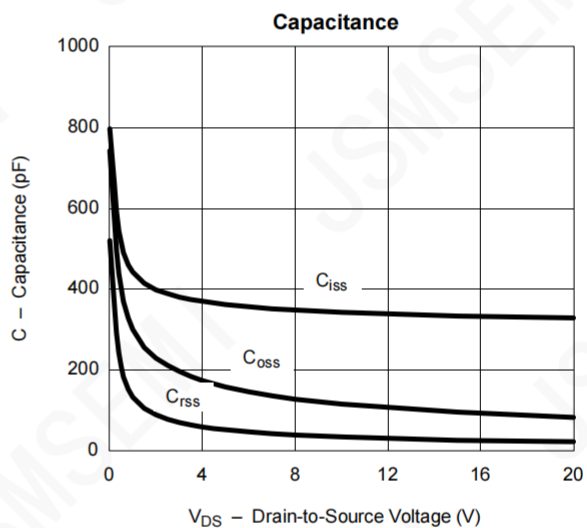
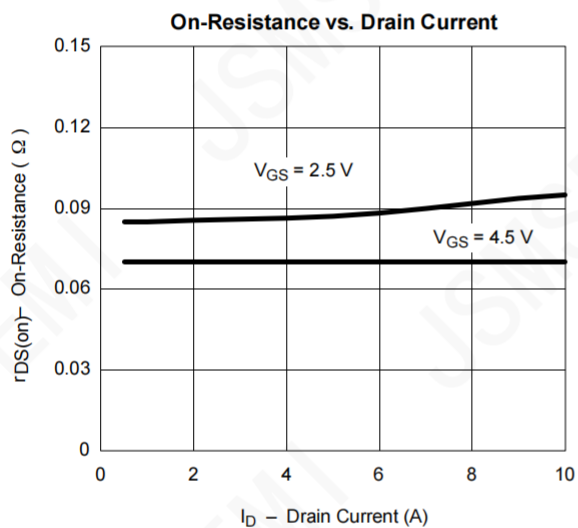
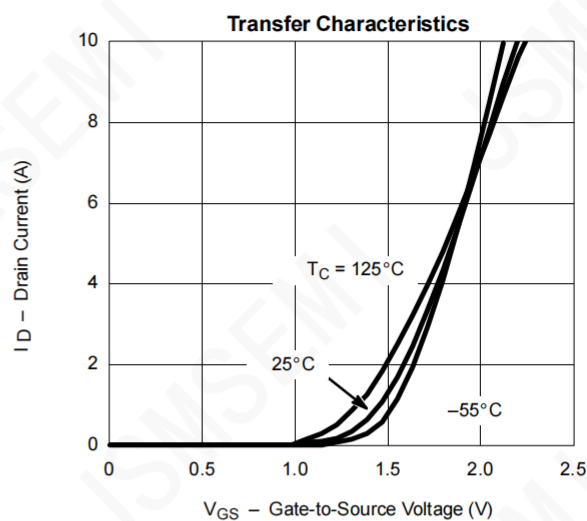
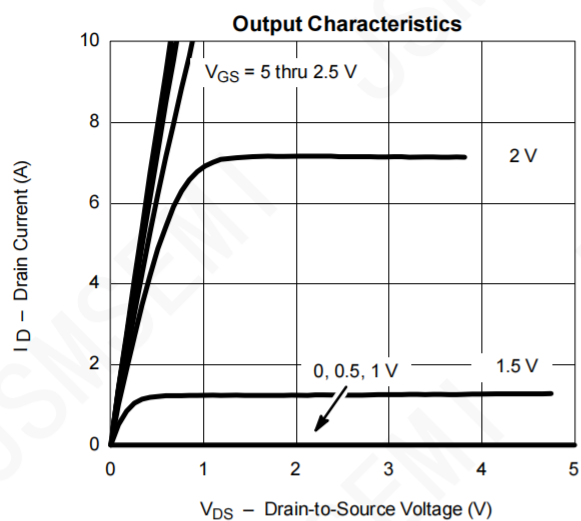
- ¹⁾ Pulse width limited by maximum junction temperature.
- ²⁾ Surface Mounted on FR4 Board, $t \leq 5$ sec.

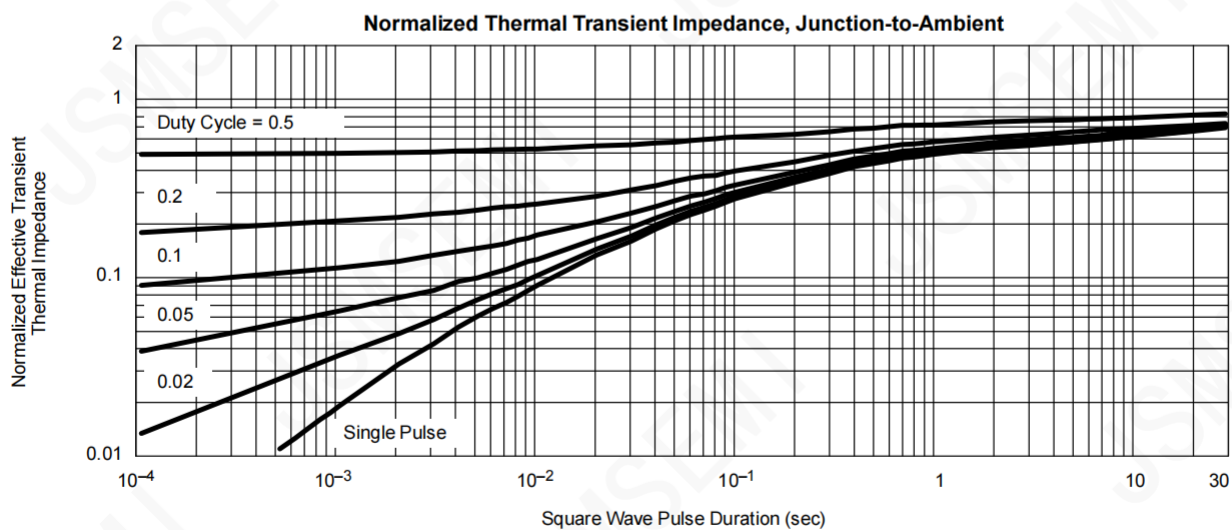
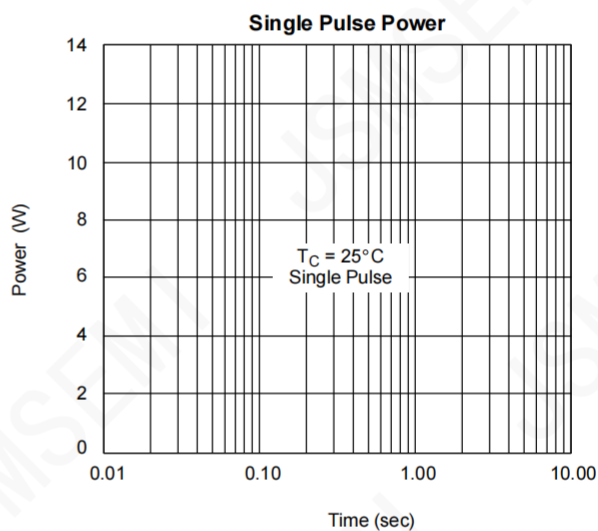
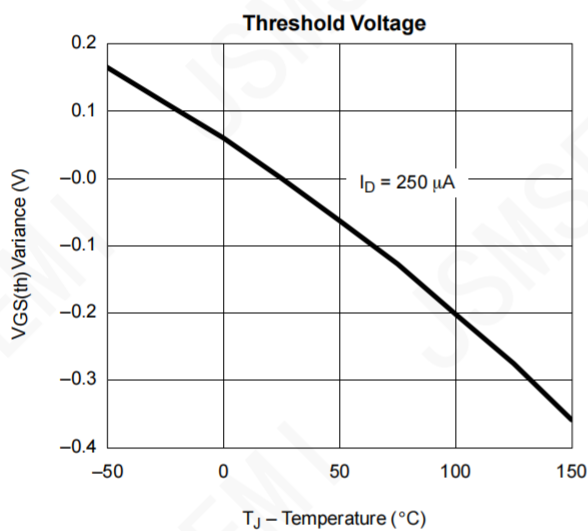
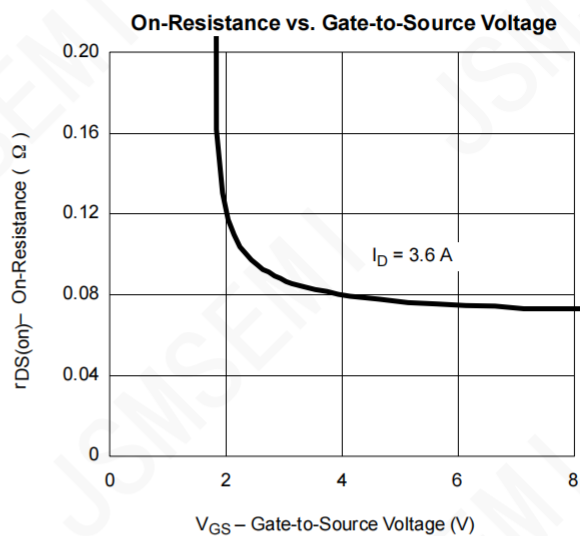
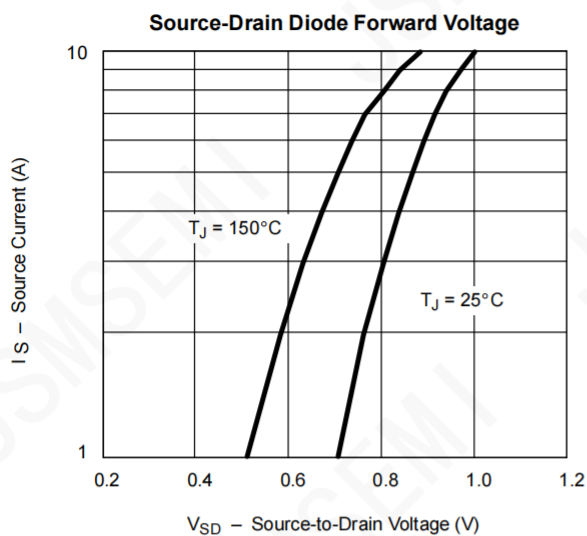
ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static ³⁾						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	20			V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 2.5V, I _D = 3.1A		30.0	65.0	mΩ
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 4.5V, I _D = 3.6A		25.0	45.0	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	0.6	0.76		V
Zero Gate Voltage Drain Current 0	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	uA
Gate Body Leakage	I _{GSS}	V _{GS} = ± 12V, V _{DS} = 0V			±100	nA
Forward Transconductance	g _{fs}	V _{DS} = 5V, I _D = 4.2A		5		S
Dynamic ⁴⁾						
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 3.6A V _{GS} = 4.5V		5.4	10	nC
Gate-Source Charge	Q _{gs}			0.65		
Gate-Drain Charge	Q _{gd}			1.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, R _G = 6Ω I _D = 1A, V _{GS} = 4.5V RL = 5.5Ω		12	25	ns
Turn-On Rise Time	t _r			36	60	
Turn-Off Delay Time	t _{d(off)}			34	60	
Turn-Off Fall Time	t _f			10	25	
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V f = 1.0 MHz		340		pF
Output Capacitance	C _{oss}			115		
Reverse Transfer Capacitance	C _{rss}			33		
Source-Drain Diode						
Max. Diode Forward Current	I _S				1.6	A
Diode Forward Voltage	V _{SD}	I _S = 1.0A, V _{GS} = 0V			1.0	V

Notes
³⁾ Short duration test pulse used to minimize self-heating effect.

⁴⁾ Pulse test pulse width ≤ 300μs, duty cycle ≤ 2%.






Package Outline

SOT-23

Dimensions in mm

