

SI8205

20V Dual N-Channel Enhancement Mode MOSFET

VDS= 20V

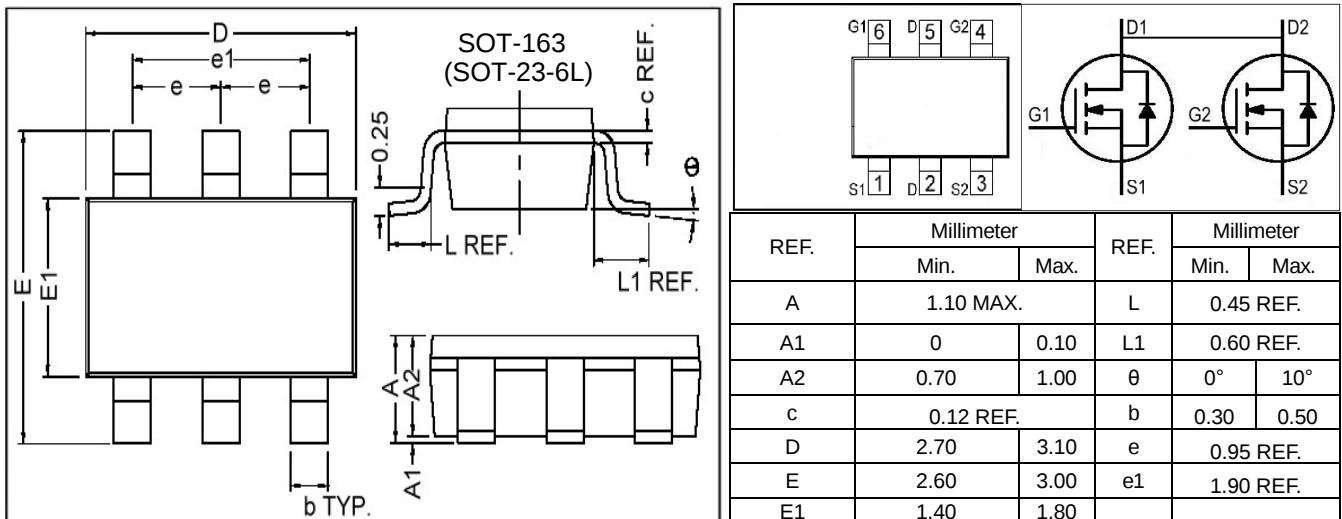
RDS(ON), Vgs@ 2.5V, Ids@ 5.2A = 24mΩ

RDS(ON), Vgs @4.5V, Ids @6A = 20mΩ

Features

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- High Power and Current handling capability
- Ideal for Li ion battery pack applications

Package Dimensions



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	6	A
Pulsed Drain Current ¹⁾	I_{DM}	25	
Maximum Power Dissipation	P_D	1.4	W
		1	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾	$R_{\theta JA}$	100	°C/W

Notes

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

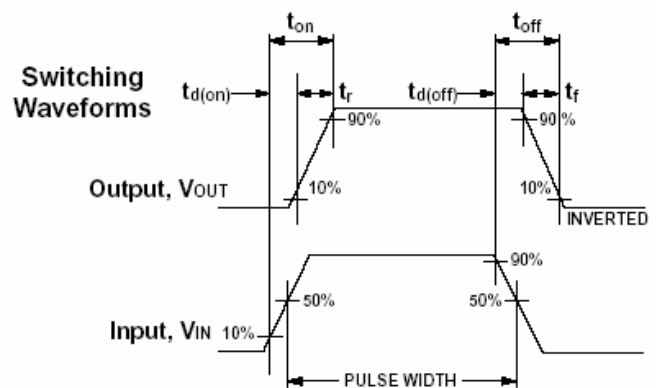
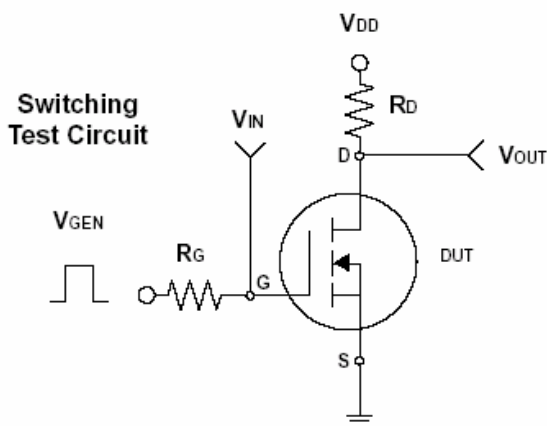
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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	20	-	-	V
Drain-Source On-State Resistance ¹⁾	R _{DS(on)}	V _{GS} = 2.5V, I _D = 5.2A		24.0	32	mΩ
Drain-Source On-State Resistance ¹⁾	R _{DS(on)}	V _{GS} = 4.5V, I _D = 6A		20.0	25	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	0.6		1.5	V
Zero Gate Voltage Drain Current 0	I _{DSS}	V _{DS} = 16V, 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 =6A		22	—	S
Dynamic ¹⁾						
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 6A V _{GS} = 4.5V		5		nC
Gate-Source Charge	Q _{gs}			1.1		
Gate-Drain Charge	Q _{gd}			2.1		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, R _G = 6Ω I _D = 1A, V _{GS} = 4.5V		10	20	ns
Turn-On Rise Time	t _r			11	25	
Turn-Off Delay Time	t _{d(off)}			35	70	
Turn-Off Fall Time	t _f			30	60	
Input Capacitance	C _{iss}	V _{DS} = 8V, V _{GS} = 0V f = 1.0 MHz		600		pF
Output Capacitance	C _{oss}			330		
Reverse Transfer Capacitance	C _{rss}			140		
Source-Drain Diode						
Max. Diode Forward Current	I _S				1.7	A
Diode Forward Voltage	V _{SD}	I _S = 1.7A, V _{GS} = 0V		0.72	1.2	V

¹⁾ Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$



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Typical Characteristics (T_J = 25°C Noted)

