JTD SEMI

JTD8205A

20V Dual N-Channel Enhancement Mode MOSFET

VDS= 20V

RDS(ON), Vgs@2.5V, Ids@5.2A = 25.3mΩ

RDS(ON), Vgs@4.5V, Ids@6A = 19.8mΩ

Features

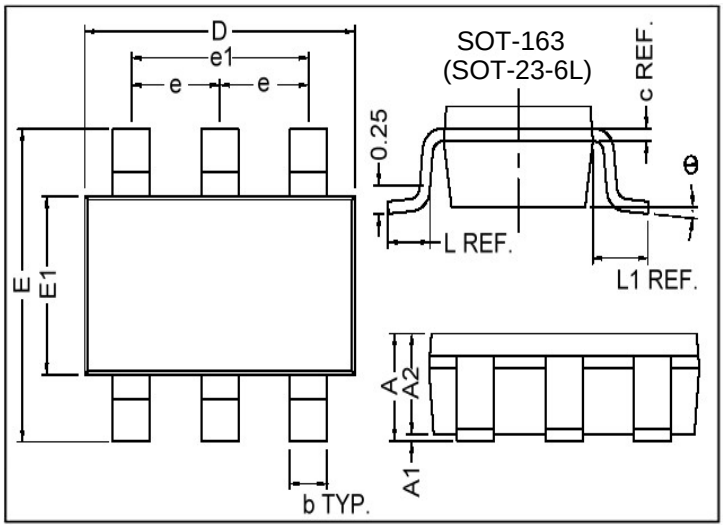
Advanced trench process technology

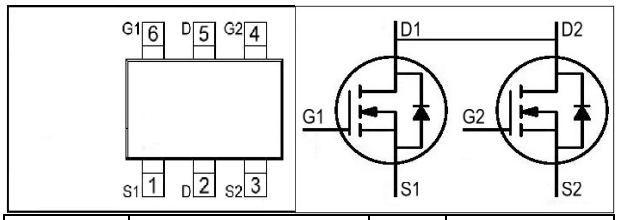
High Density Cell Design For Ultra Low On-Resistance

High Power and Current handing capability

Ideal for Li ion battery pack applications

Package Dimensions





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.10 MAX.		L	0.45 REF.	
A1	0	0.10	L1	0.60 REF.	
A2	0.70	1.00	θ	0°	10°
c	0.12 REF.		b	0.30	0.50
D	2.70	3.10	e	0.95 REF.	
E	2.60	3.00	e1	1.90 REF.	
E1	1.40	1.80			

Maximum Ratings and Thermal Characteristics (TA = 25oC 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	TA = 25°C	P_D	1.4	W
	TA = 75°C		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

1) Pulse width limited by maximum junction temperature.

2) Surface Mounted on FR4 Board, t ≤ 5 sec.

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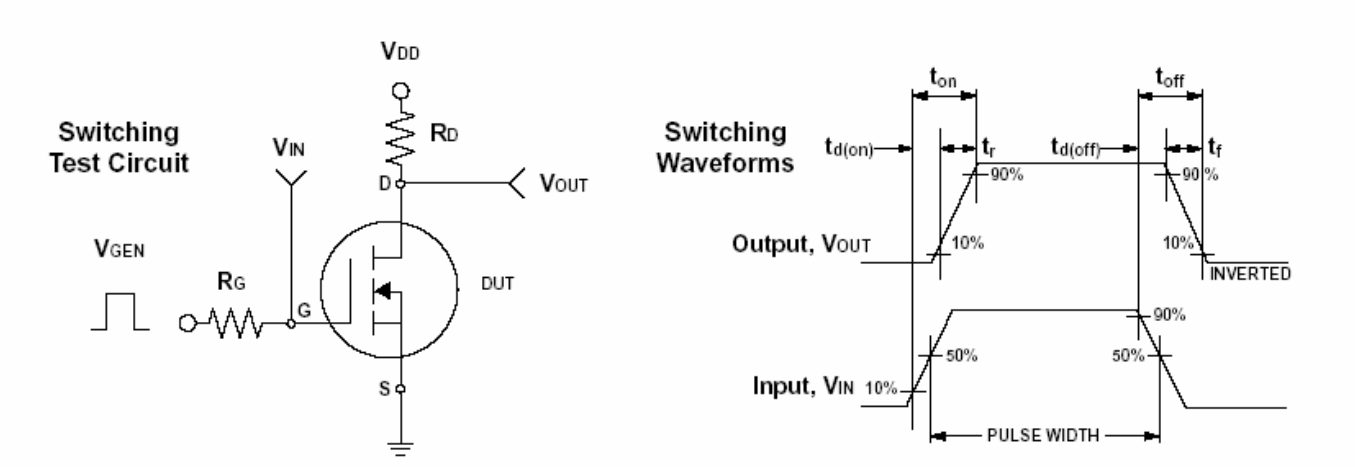
ELECTRICAL CHARACTERISTICS

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		25.3	32	mΩ
Drain-Source On-State Resistance [1]	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 6A		19.8	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		ns
Turn-On Rise Time	t_r			11		
Turn-Off Delay Time	$t_{d(off)}$			35		
Turn-Off Fall Time	t_f			30		
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 <= 300us, duty cycle<= 2%



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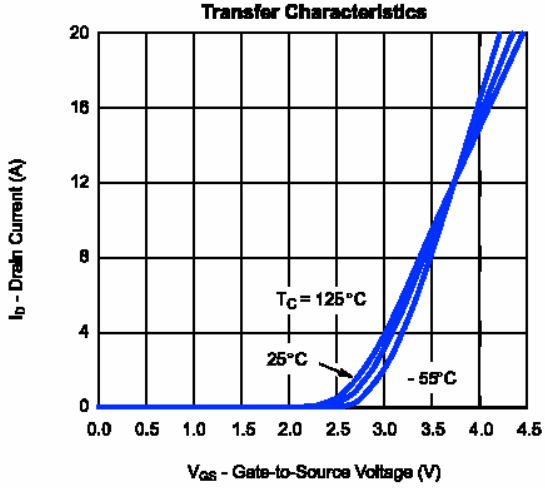
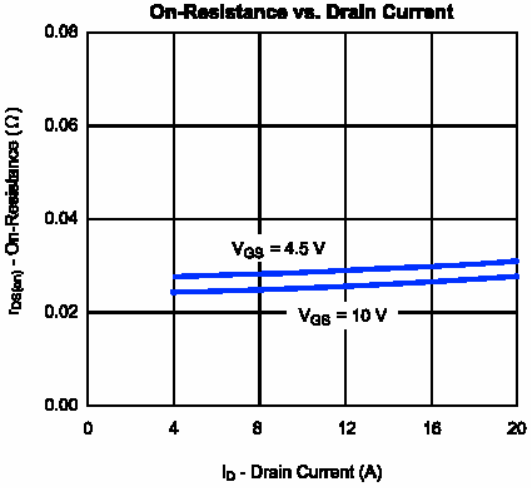
Typical Characteristics (T_J =25℃ Noted)

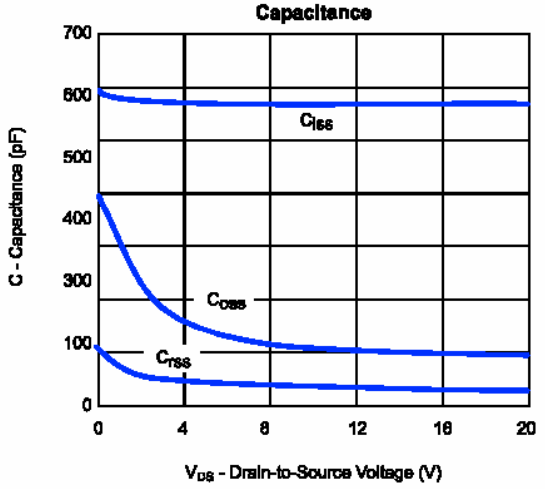
Transfer Characteristics



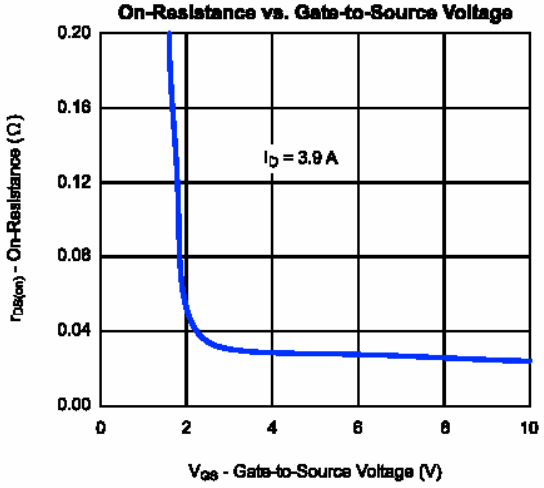
On-Resistance vs. Drain Current



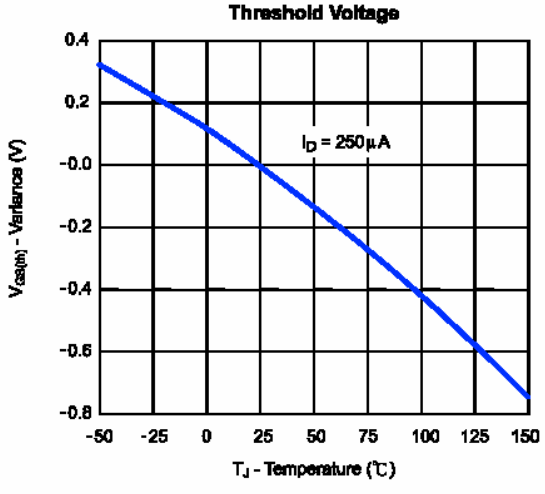
Capacitance



On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



On-Region Characteristics