



### Product Summary

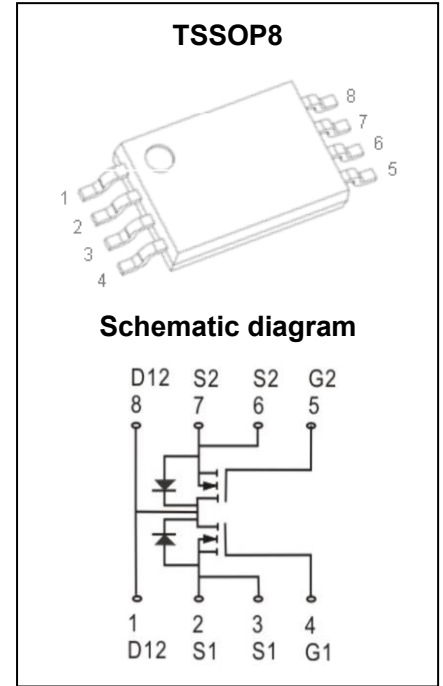
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
20V	26mΩ@4.5V	4A
	32mΩ@2.5V	

### Feature

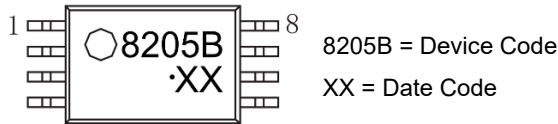
- TrenchFET Power MOSFET
- Excellent  $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handling Capability
- Surface Mount Package

### Application

- Battery Protection
- Load Switch
- Power Management



### MARKING:



### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current <sup>1,2</sup>	$I_D$	4	A
Pulsed Drain Current	$I_{DM}$	16	A
Power Dissipation	$P_D$	2	W
Thermal Resistance from Junction to Ambient <sup>1,2</sup>	$R_{\theta JA}$	62.5	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

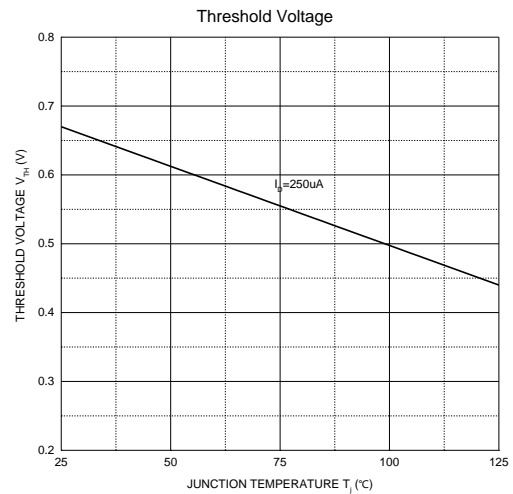
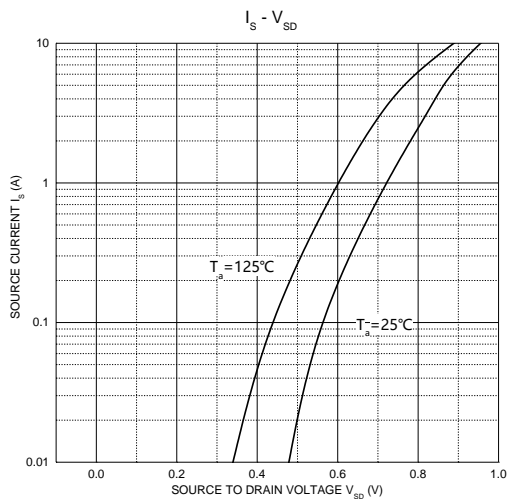
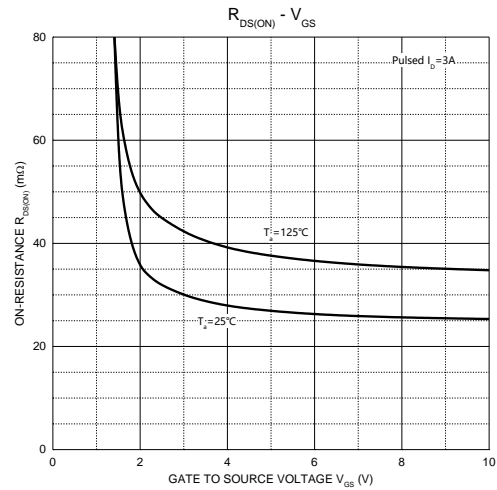
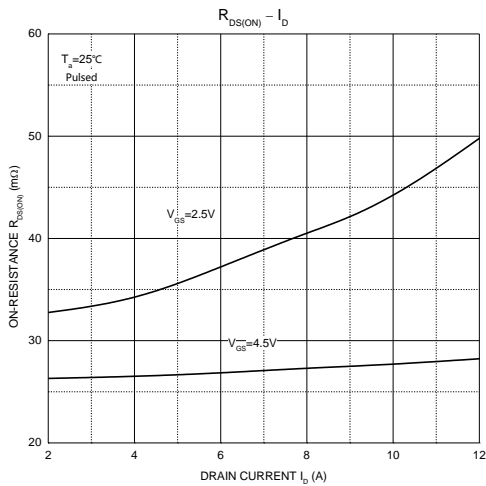
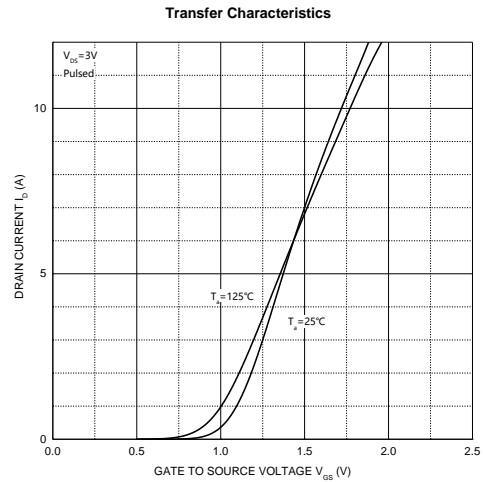
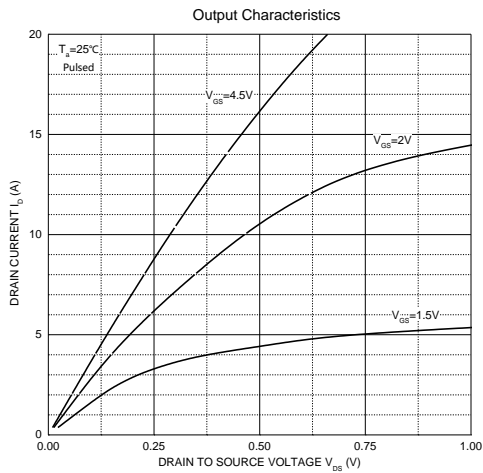
**MOSFET ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
<b>On Characteristics<sup>3</sup></b>						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.7	1.2	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$		26	32	m $\Omega$
		$V_{GS} = 2.5V, I_D = 3A$		32	40	
Forward Transconductance	$g_{fs}$	$V_{DS} = 5V, I_D = 3A$		8		S
<b>Dynamic characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		278		pF
Output Capacitance	$C_{oss}$			51		
Reverse Transfer Capacitance	$C_{rss}$			44		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 4A$		14		nC
Gate-Source Charge	$Q_{gs}$			2.5		
Gate-Drain Charge	$Q_{gd}$			2.5		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, V_{GS} = 4V, I_D = 1A, R_G = 10\Omega$		16		ns
Turn-on rise time	$t_r$			8		
Turn-off delay time	$t_{d(off)}$			36		
Turn-off fall time	$t_f$			18		
<b>Diode Characteristics</b>						
Diode Forward Current	$I_S$				4	A
Diode Forward Voltage <sup>3</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = 3A$			1.2	V

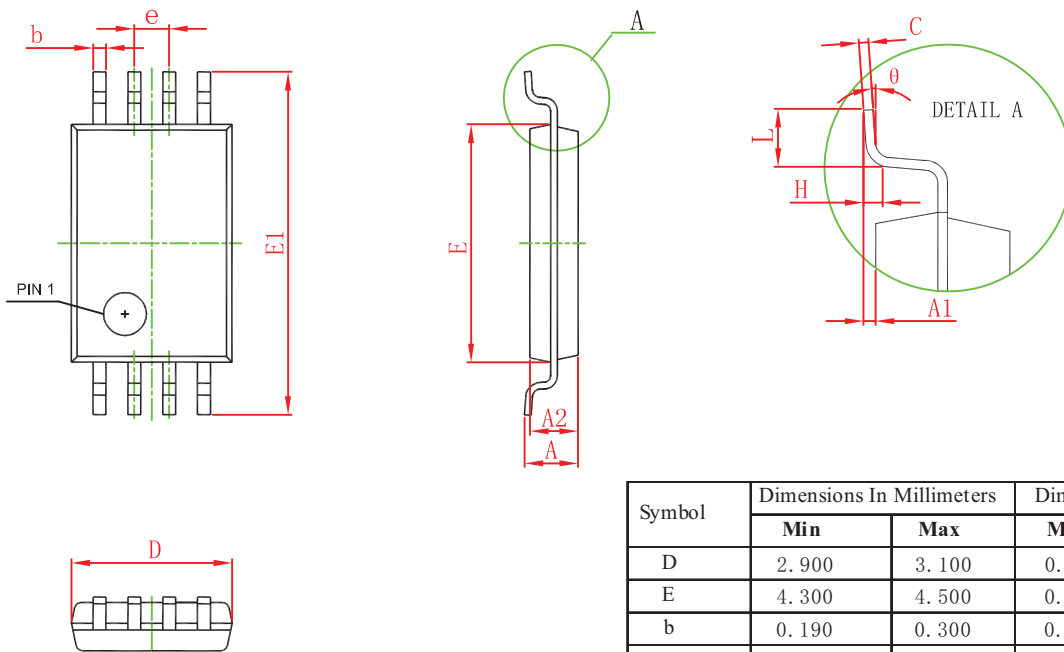
**Notes:**

- $R_{\theta JA}$  is measured with the device mounted on 1 in<sup>2</sup> FR4 board with 1 oz. single side copper, in a still air environment with  $T_a = 25^\circ\text{C}$ .
- $R_{\theta JA}$  is measured in the steady state
- Pulse test : Pulse width  $\leq 380\mu s$ , duty cycle  $\leq 2\%$ .

## Typical Electrical and Thermal Characteristics



## TSSOP8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
D	2.900	3.100	0.114	0.122
E	4.300	4.500	0.169	0.177
b	0.190	0.300	0.007	0.012
c	0.090	0.200	0.004	0.008
E1	6.250	6.550	0.246	0.258
A		1.200		0.047
A2	0.800	1.000	0.031	0.039
A1	0.050	0.150	0.002	0.006
e	0.65 (BSC)		0.026 (BSC)	
L	0.500	0.700	0.020	0.028
H	0.25(TYP)		0.01(TYP)	
$\theta$	1°	7°	1°	7°