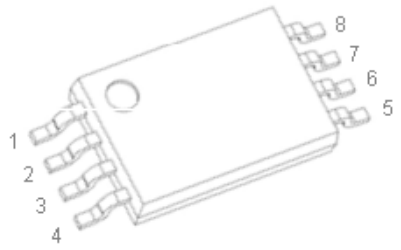
GP2010S

18V Dual N-Channel MOSFET

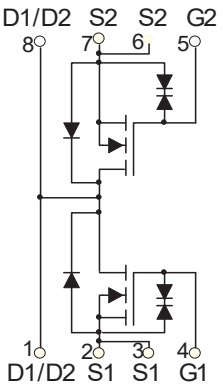
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
18V	6.7mΩ@4.5V	10A
	6.9mΩ@4.0V	
	7.0mΩ@3.8V	
	7.7mΩ@3.1V	
	9.0mΩ@2.5V	

TSSOP8



Schematic diagram



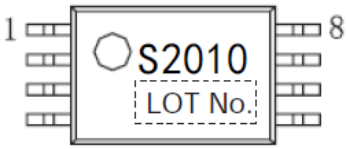
Feature

- Excellent $R_{DS(on)}$
- Low Gate Charge
- ESD Protected Gate

Application

- Load/ Power Switch
- Small Portable Electronics

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	18	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current(1)	I_D	10	A
Pulsed Drain Current (3)	I_{DM}	50	A
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient(2)	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	18			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =16V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	μA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.3		1.0	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3A	5.0	6.7	8.0	mΩ
		V_{GS} =4.0V, I_D =3A	5.8	6.9	8.3	
		V_{GS} =3.5V, I_D =3A	6.0	7.0	8.5	
		V_{GS} =3.1V, I_D =3A	6.3	7.7	9.3	
		V_{GS} =2.5V, I_D =3A	6.8	9.0	11	
Forward tranconductance(3)	g_{FS}	V_{DS} =5V, I_D =10A		18		S
Diode Forward voltage(3)	V_{DS}	V_{GS} =0V, I_S=1A			1.2	V
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		1450		pF
Output Capacitance	C_{oss}			260		
Reverse Transfer Capacitance	C_{rss}			220		
Total gate charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D =10A		12		nC
Gate-source charge	Q_{gs}			6		
Gate-drain charge	Q_{gd}			7		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{GS}=4.5V,V_{DD}=10V,R_L=1. 5Ω		2		ns
Turn-on rise time	t_r			2.9		
Turn-off delay time	$t_{d(off)}$			8		
Turn-off fall time	t_f			9		

Notes :

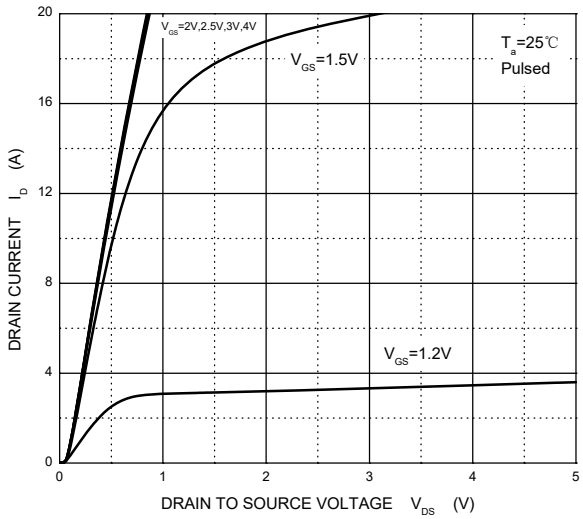
1.Surface mounted on FR4 board using 1 square inch pad size,1oz copper.

2.Surface mounted on FR4 board using the minimum pad size,1oz copper.

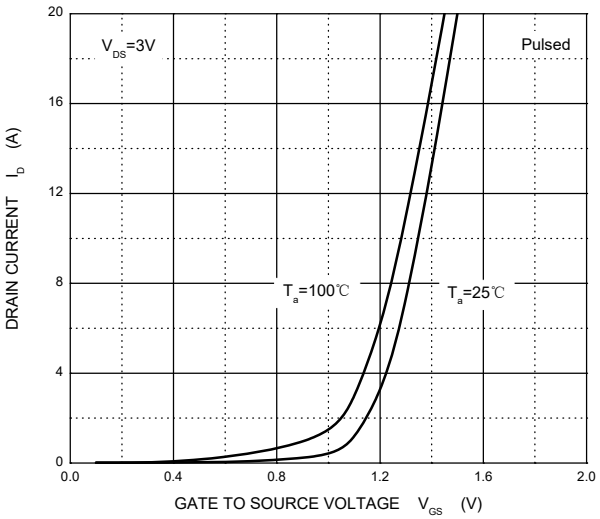
3. Pulse test : Pulse width=300μs, duty cycle≤2%.

Typical Electrical and Thermal Characteristics

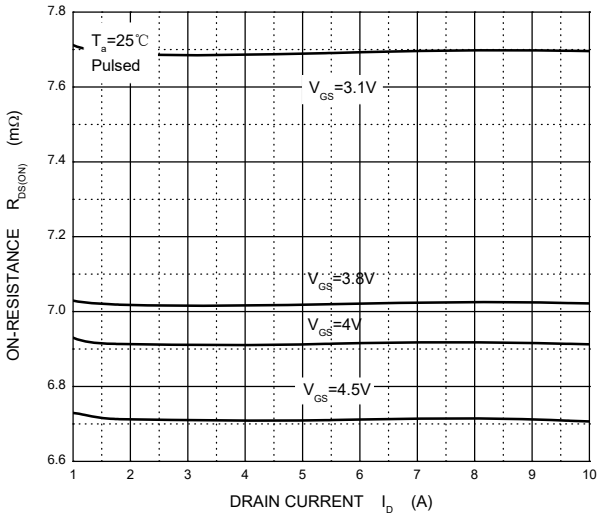
Output Characteristics



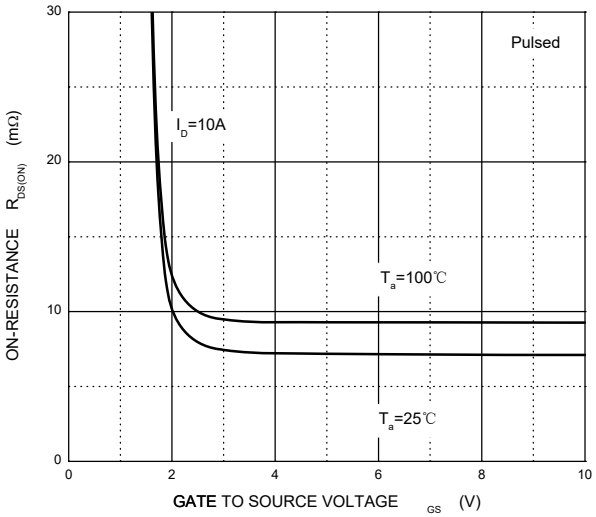
Transfer Characteristics



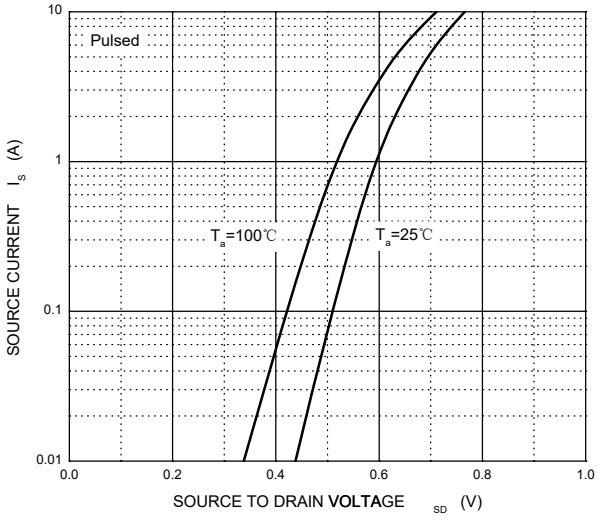
$R_{DS(ON)}$ —— I_D



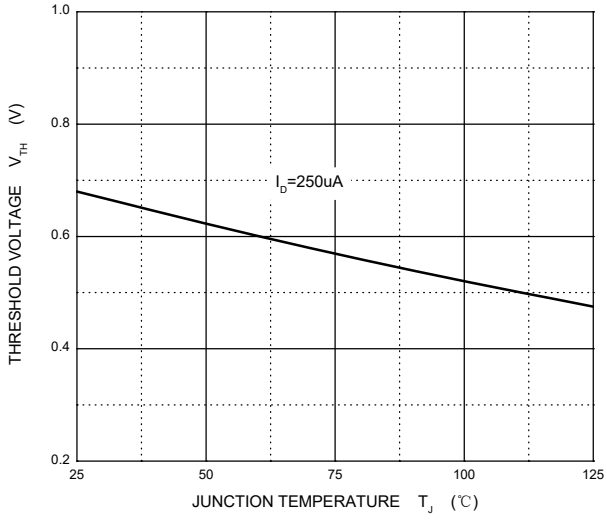
$R_{DS(ON)}$ —— V_{GS}



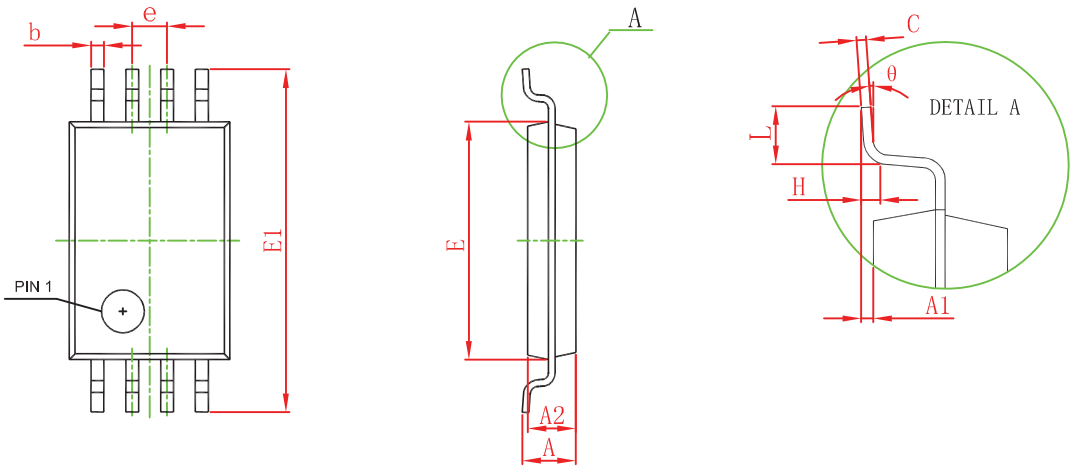
I_S —— V_{SD}



Threshold Voltage



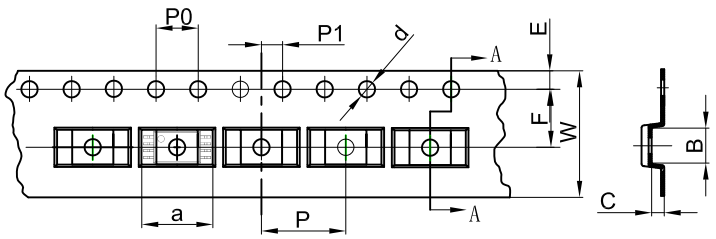
TSSOP8 Package Information



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	
θ	1°	7°	1°	7°

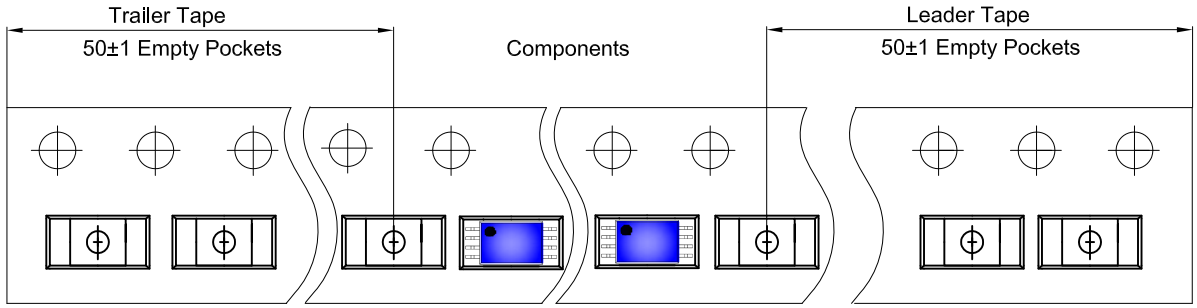
TSSOP8 Tape and Reel

TSSOP8 Embossed Carrier Tape

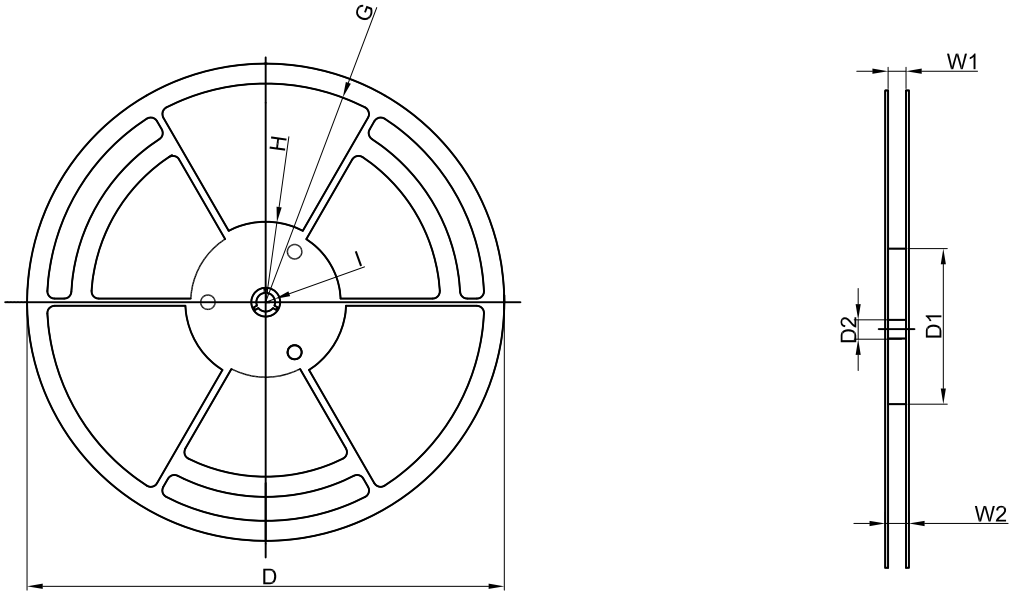


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
TSSOP8	6.76	3.30	1.20	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

TSSOP8 Tape Leader and Trailer



TSSOP8 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3,000 pcs	13 inch	3,000 pcs	336×336×48	24,000 pcs	445×355×365	