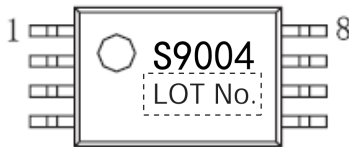
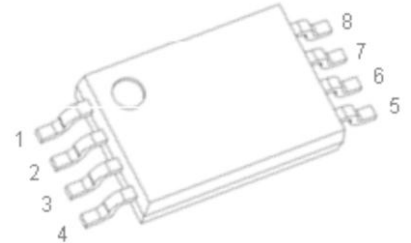
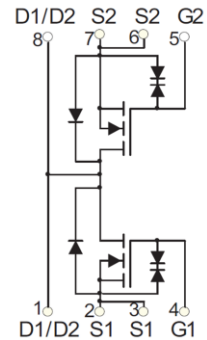


Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	7.5mΩ@4.5V	10A
	8.0mΩ@4.0V	
	8.4mΩ@3.8V	
	8.9mΩ@3.1V	
	9.7mΩ@2.5V	

DESCRIPTION

The GP9004S uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch, facilitated by its common-drain configuration.

MARKING:

TSSOP8

Schematic diagram

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}	±12	V
Continuous Drain Current	I_D	10	A
Pulsed Drain Current	I_{DM}	50	A
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^{\circ}\text{C}$

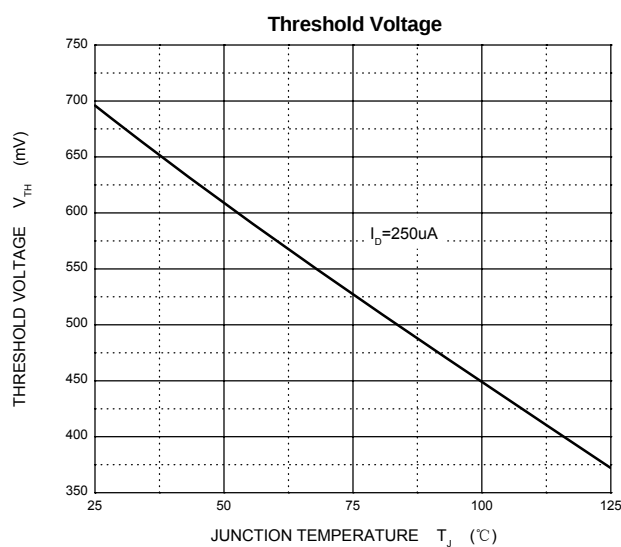
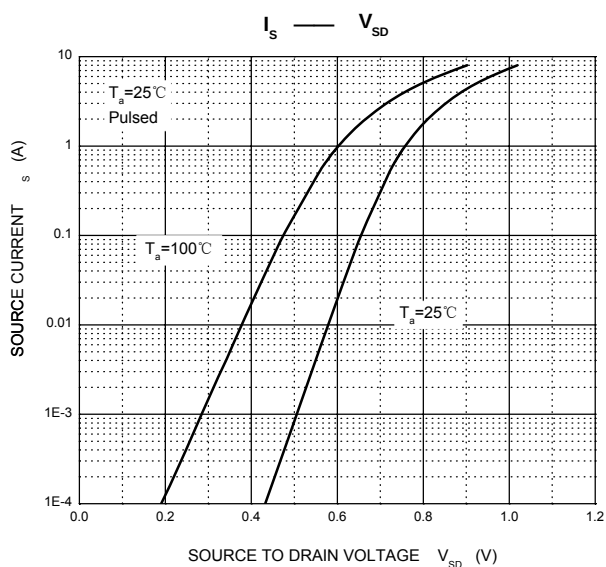
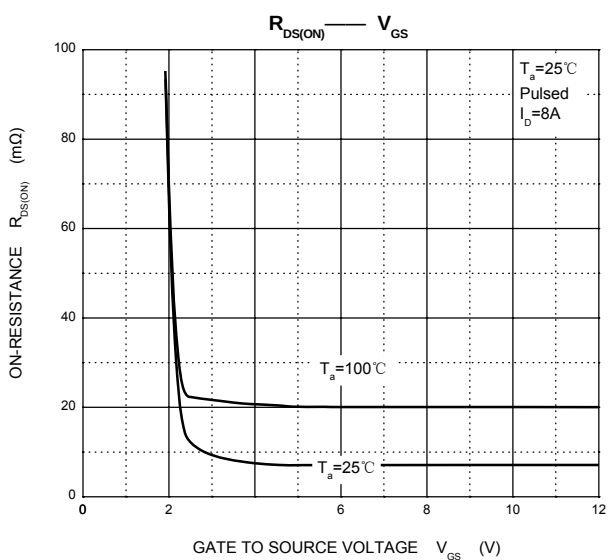
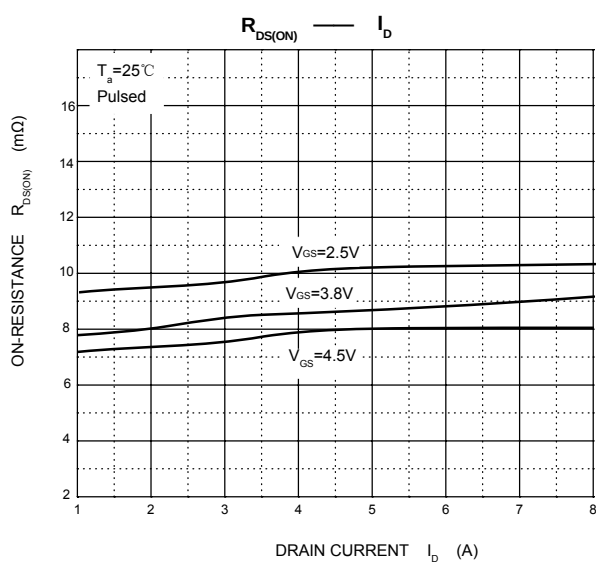
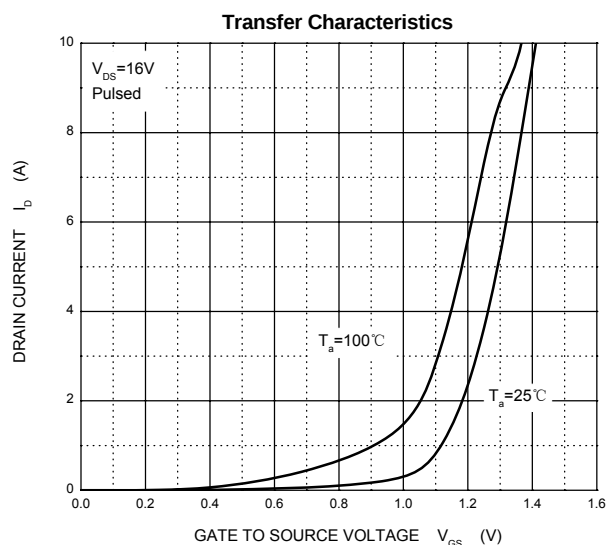
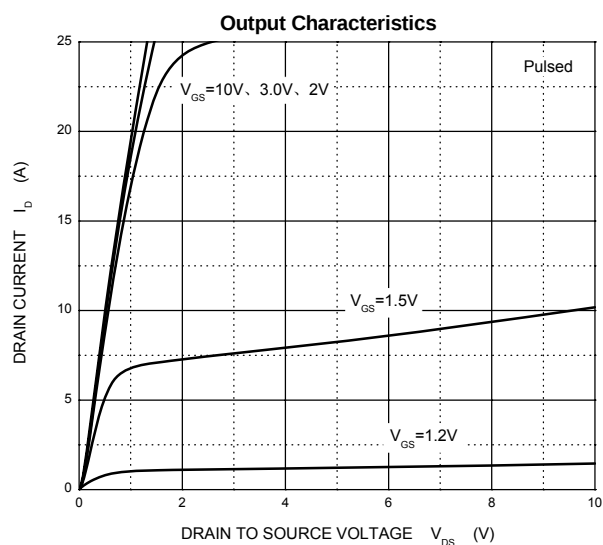
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =16V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±4.5V, V _{DS} = 0V			±1	
		V _{GS} =±8V, V _{DS} = 0V			±10	
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5	0.7	1.0	V
Drain-source on-resistance ⁽¹⁾	R _{DS(on)}	V _{GS} =4.5V, I _D =3A	6.0	7.5	9.0	mΩ
		V _{GS} =4.0V, I _D =3A	7.0	8.0	9.5	
		V _{GS} =3.8V, I _D =3A	7.5	8.4	9.8	
		V _{GS} =3.1V, I _D =3A	8.0	8.9	10	
		V _{GS} =2.5V, I _D =3A	9.0	9.7	12	
Forward tranconductance ⁽¹⁾	g _{FS}	V _{DS} =5V, I _D =7A	8	23		S
Diode Forward voltage ⁽¹⁾	V _{DS}	V _{GS} =0V, I _S =1A			1	V
Dynamic characteristics ⁽²⁾						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f =1MHz		1040		pF
Output Capacitance	C _{oss}			225		
Reverse Transfer Capacitance	C _{rss}			195		
Total gate charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =7A		13		nC
Gate-source charge	Q _{gs}			2.8		
Gate-drain charge	Q _{gd}			5.6		
Switching Characteristics ⁽²⁾						
Turn-on delay time	t _{d(on)}	V _{GS} =5V,V _{DD} =10V, R _L =1.35Ω,R _{GEN} =3Ω		28		ns
Turn-on rise time	t _r			64		
Turn-off delay time	t _{d(off)}			90		
Turn-off fall time	t _f			9058		
Drain-Source Diode Charac teristics						
Diode Forward Current	I _S				6.0	A

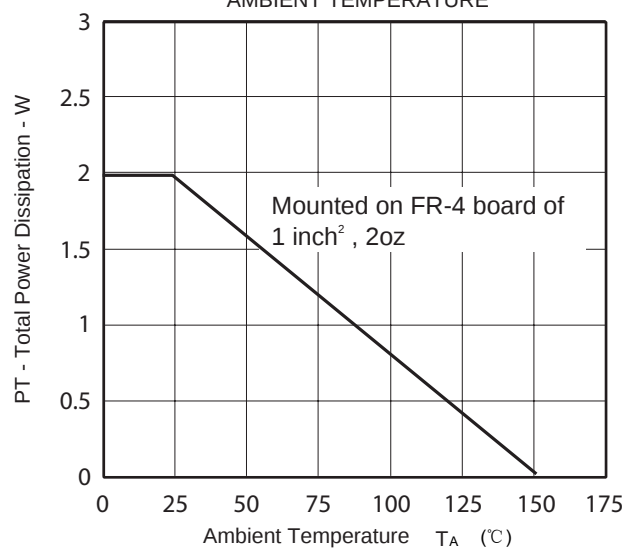
Notes :

1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
2. Guaranteed by design, not subject to production testing..

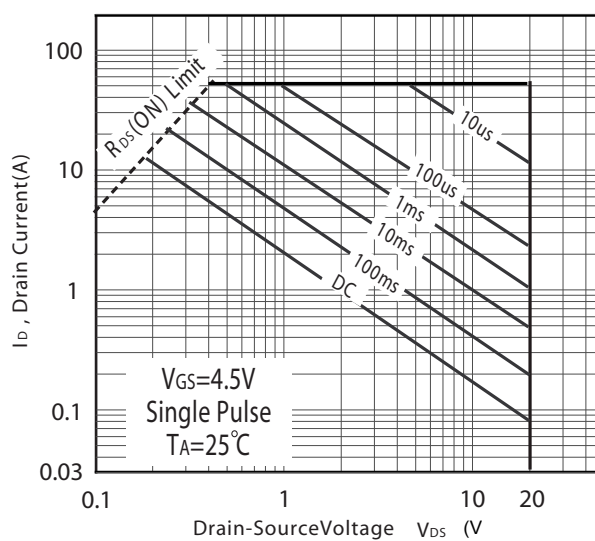
Typical Electrical and Thermal Characteristics

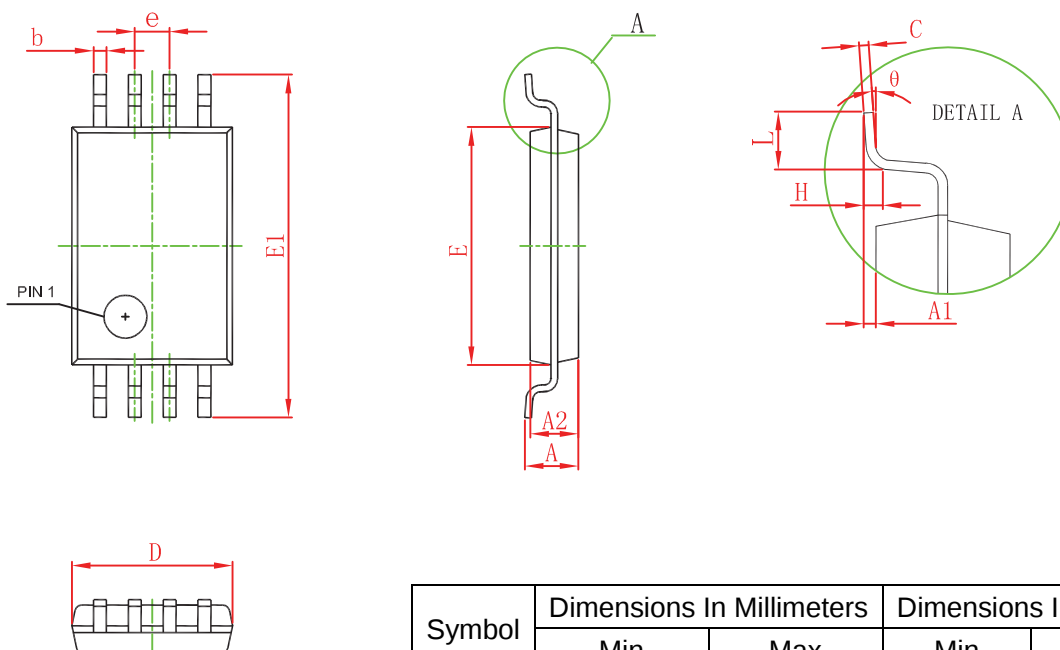


TOTAL POWER DISSIPATION vs.
AMBIENT TEMPERATURE

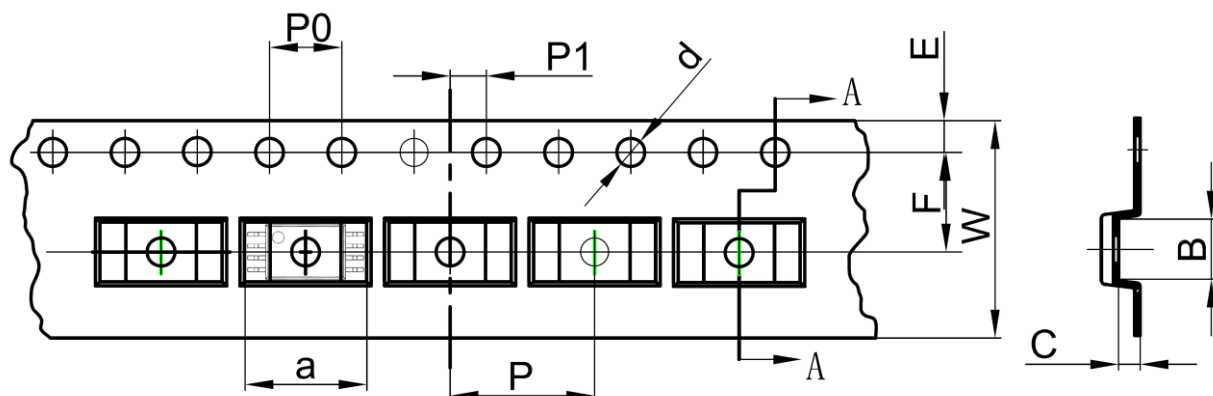


Maximum Safe Operating Area



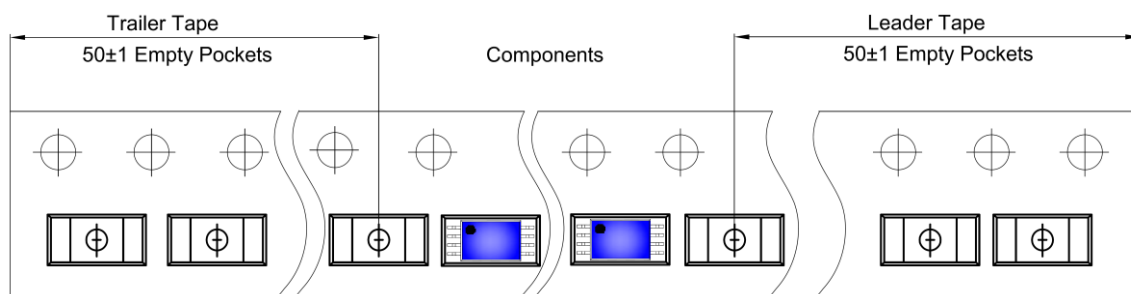
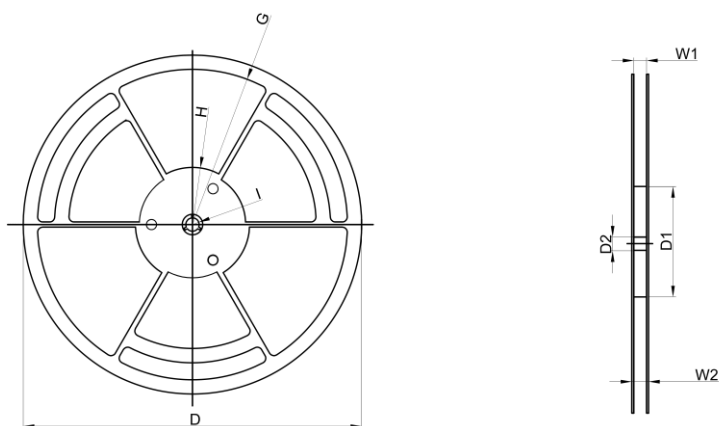
TSSOP8 Package Information


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	Φ1.50	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	Φ330.00	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)
3000pcs	13 inch	30,000pcs	336×336×48	24,000pcs	445×355×365	