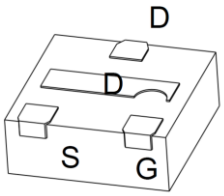
GP2399

20V P-Channel MOSFET

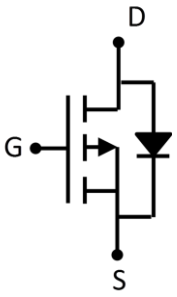
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	67mΩ@-4.5V	-2A
	98mΩ@-2.5V	

DFNWB1×1-3L



Schematic diagram



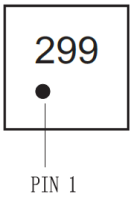
Feature

- High power and current handing capability

Application

- Load Switch for Portable Devices
- PWM applications

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ 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	-2	A
Pulsed Drain Current	I_{DM}	-10	A
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	℃/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	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.7	-1	V
Drain-source on-resistance[a]	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-2A		67	87	mΩ
		V_{GS} =-2.5V, I_D =-1.8A		98	147	
Forward tranconductance[a]	g_{FS}	V_{DS} =-5V, I_D =-2A	5			S
Dynamic characteristics[b]						
Input Capacitance	C_{iss}	V_{DS} =-10V,V_{GS} =0V,f =1MHz		290		pF
Output Capacitance	C_{oss}			60		
Reverse Transfer Capacitance	C_{rss}			34		
Total Gate Charge	Q_g	V_{DS} =-10V,V_{GS} =-4.5V,I_D=-2A		3.0		nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			0.8		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-10V, R_L=5Ω, V_{GEN}=-4.5V,R_g=3Ω		10		ns
Turn-on rise time	t_r			5.0		
Turn-off delay time	$t_{d(off)}$			21		
Turn-off fall time	t_f			7		
Source-Drain Diode characteristics						
Diode forward current	I_S	T_C=25℃			-2.0	A
Diode Forward voltage	V_{DS}	V_{GS} =0V, I_S=-2.0A			-1.2	V

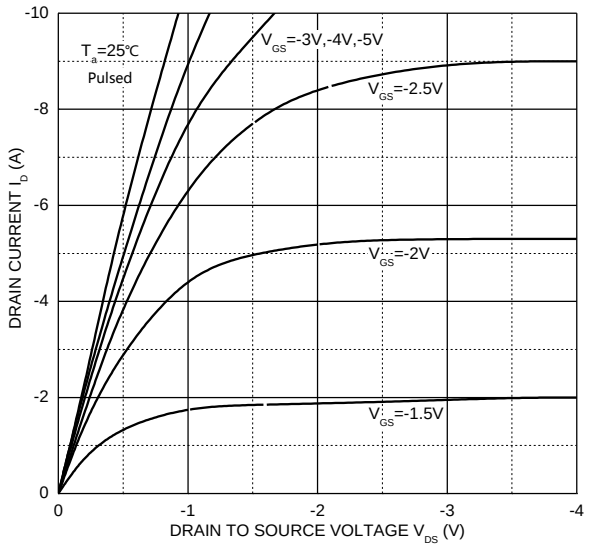
Notes :

a.Pulse Test : Pulse Width < 300μs, Duty Cycle ≤2%.

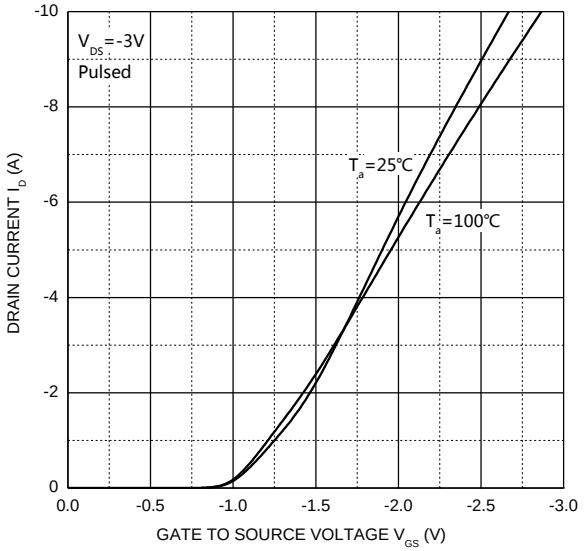
b.Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

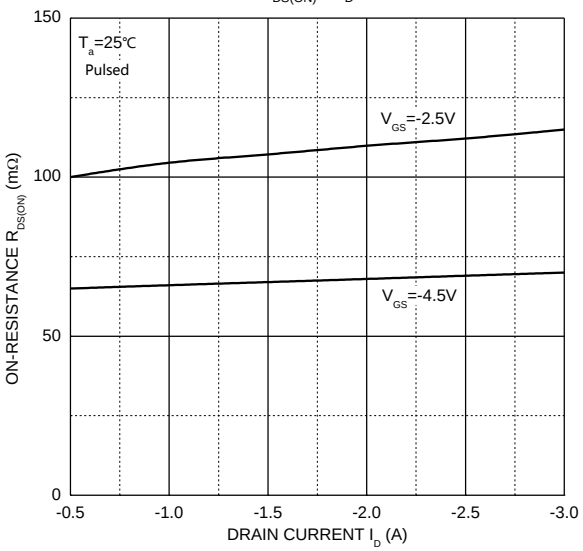
Output Characteristics



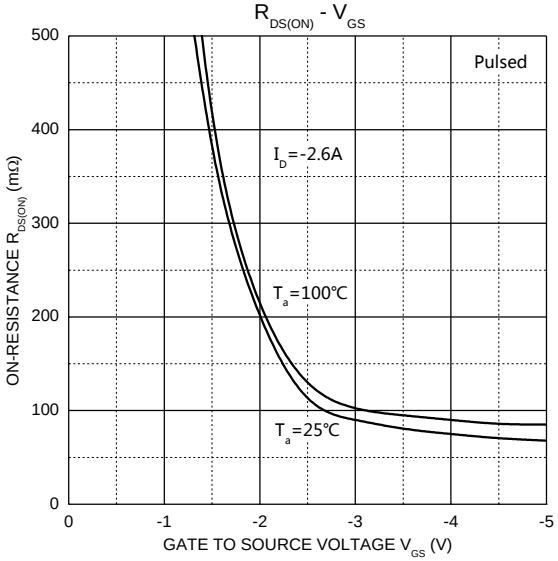
Transfer Characteristics



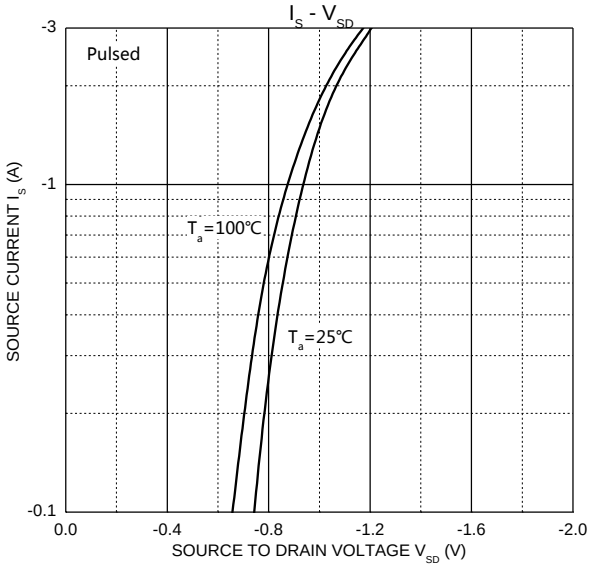
$R_{DS(ON)}$ – I_D



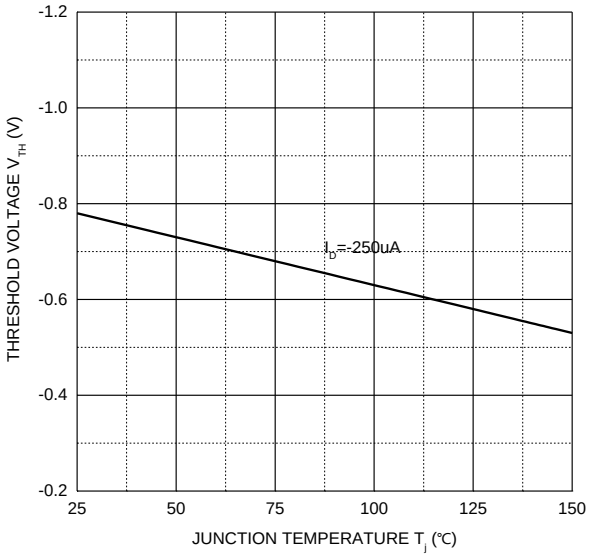
$R_{DS(ON)}$ - V_{GS}



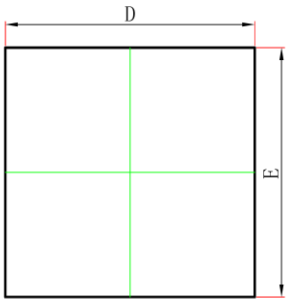
I_S - V_{SD}



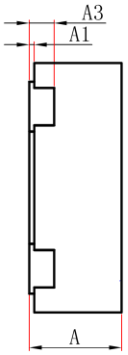
Threshold Voltage



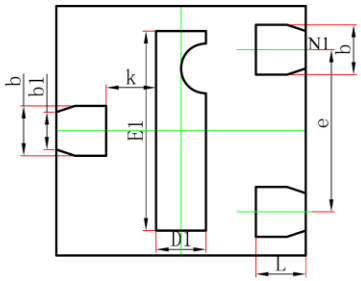
DFNWB1×1-3L Package Information



TOP VIEW



SIDE VIEW

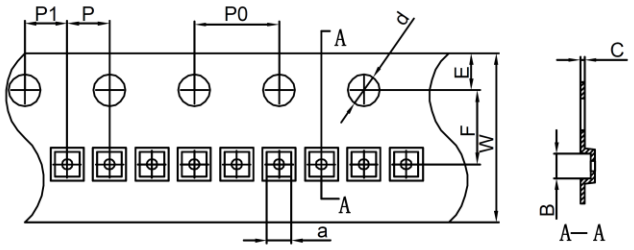


BOTTOM VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN.	MAX.	MIN.	MAX.
A	0.340	0.400	0.013	0.016
A1	0.000	0.050	0.000	0.002
A3	0.102REF.		0.004REF.	
D	0.900	1.100	0.035	0.043
E	0.900	1.100	0.035	0.043
D1	0.100	0.300	0.004	0.012
E1	0.700	0.900	0.028	0.035
b	0.150	0.250	0.006	0.010
b1	0.150REF.		0.006REF.	
e	0.650BSC.		0.026BSC.	
k	0.200REF.		0.008REF.	
L	0.124	0.276	0.005	0.011

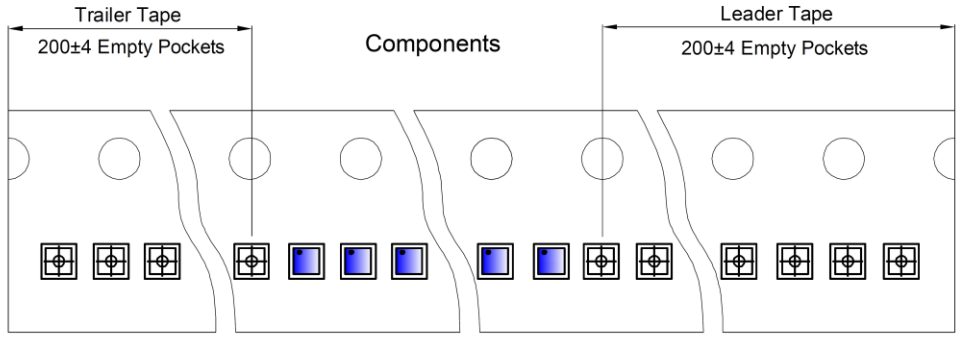
DFNWB1×1-3L Tape and Reel

DFNWB1x1-3L Embossed Carrier Tape

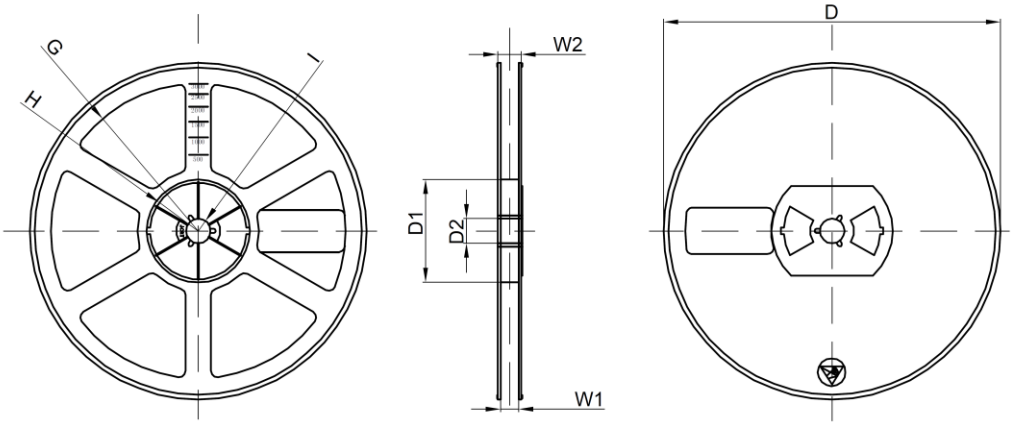


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFNWB1x1-3L	1.16	1.16	0.20	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

DFNWB1x1-3L Tape Leader and Trailer



DFNWB1x1-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	ϕ180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
10000 pcs	7 inch	100,000 pcs	203×203×195	400,000pcs	438×438×220	