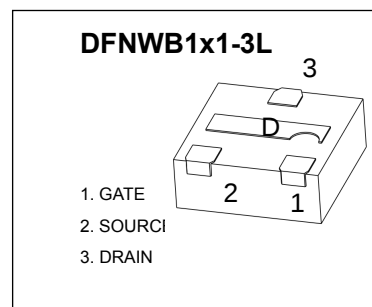




DFNWB1x1-3L Plastic-Encapsulate MOSFETS

CJAD2399 P-Channel 20-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	135mΩ@-4.5V	-2A
	170mΩ@-2.5V	



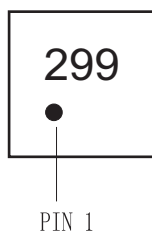
FEATURE

- High power and current handing capability

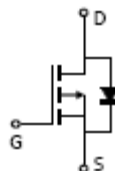
APPLICATION

- Load Switch for Portable Devices
- PWM applications

MARKING



Equivalent Circuit



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	
Continuous Drain Current	I_D	-2	A
Pulsed Drain Current	I_{DM}	-10	
Continuous Source-Drain Diode Current	I_S	-2.0	
Maximum Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient($t \leq 5s$)	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	

MOSFET ELECTRICAL CHARACTERISTICS

$T_a = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.7	-1	
Gate-source leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1	μA
Drain-source on-state resistance ^a	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.0A$		0.102	0.135	Ω
		$V_{GS} = -2.5V, I_D = -1.8A$		0.140	0.170	
Forward transconductance ^a	g_{fs}	$V_{DS} = -5V, I_D = -2.0A$	4			S
Dynamic ^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	$t_{d(on)}$	$V_{DD} = -10V, R_L = 5\Omega,$ $V_{GEN} = -4.5V, R_g = 3\Omega$		10		ns
Rise time	t_r			5.0		
Turn-off delay time	$t_{d(off)}$			21		
Fall time	t_f			7		
Drain-source body diode characteristics						
Continuous source-drain diode current	I_S				-2.0	A
Body diode voltage	V_{SD}	$I_S = -2.0A$			-1.2	V

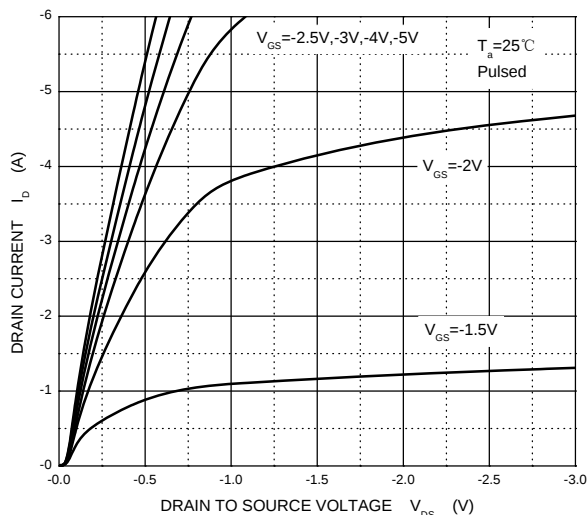
Notes :

a. Pulse Test : Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.

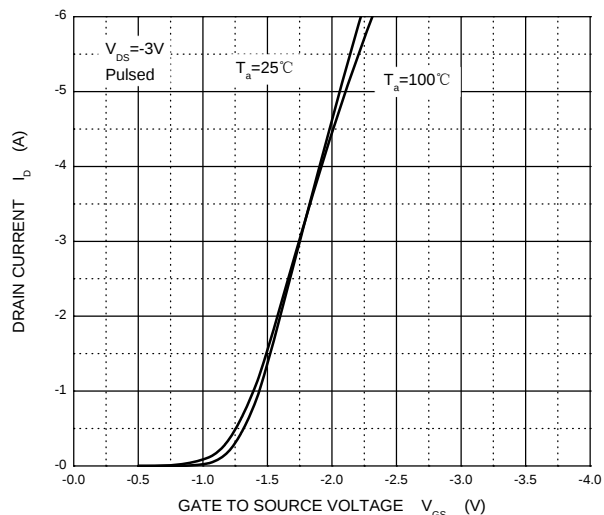
b. Guaranteed by design, not subject to production testing.

Typical Characteristics

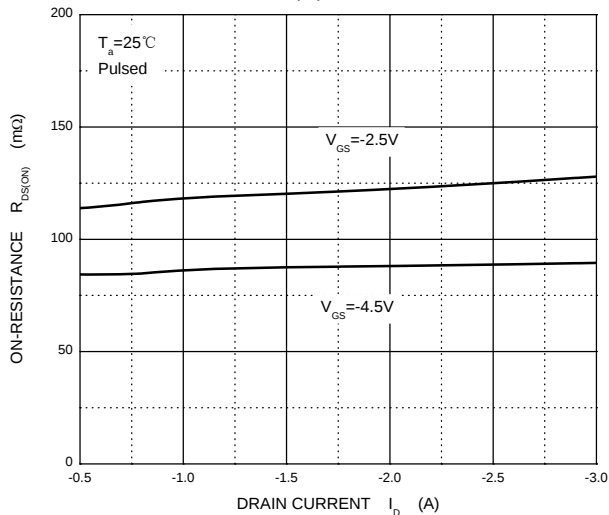
Output Characteristics



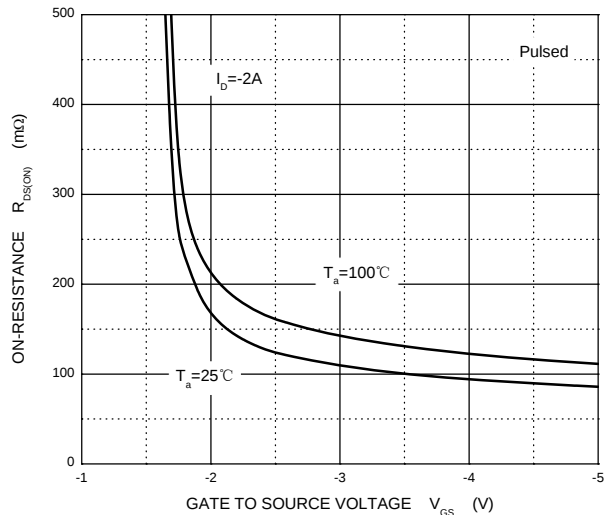
Transfer Characteristics



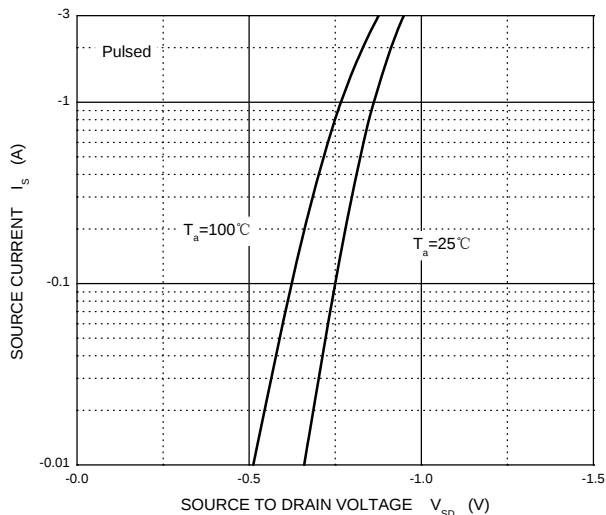
$R_{DS(ON)}$ — I_D



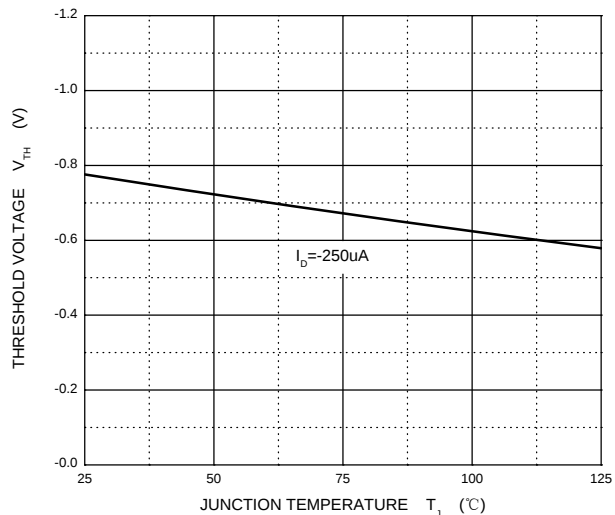
$R_{DS(ON)}$ — V_{GS}



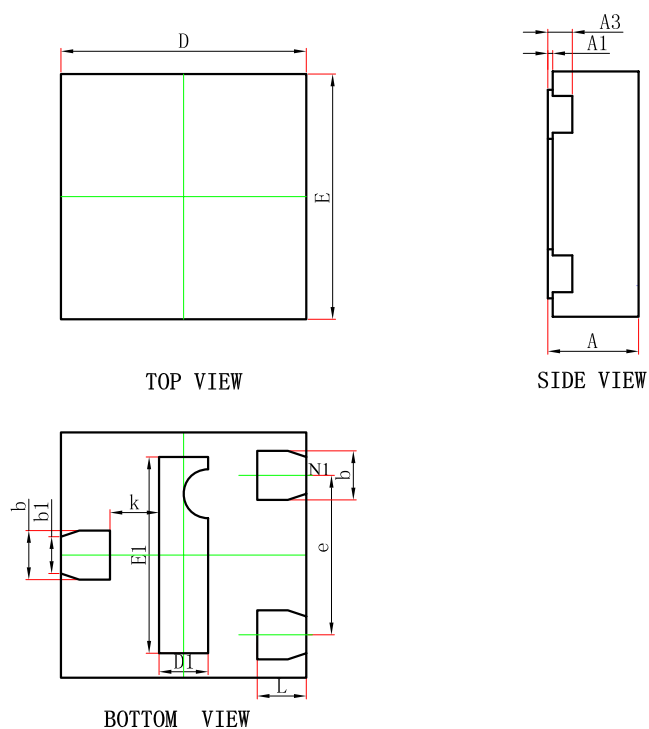
I_S — V_{SD}



Threshold Voltage

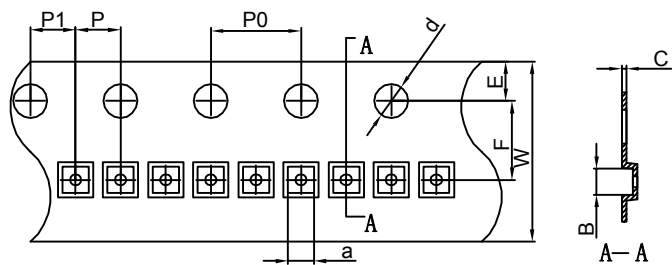


DFNWB1x1-3L Package Outline Dimensions



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

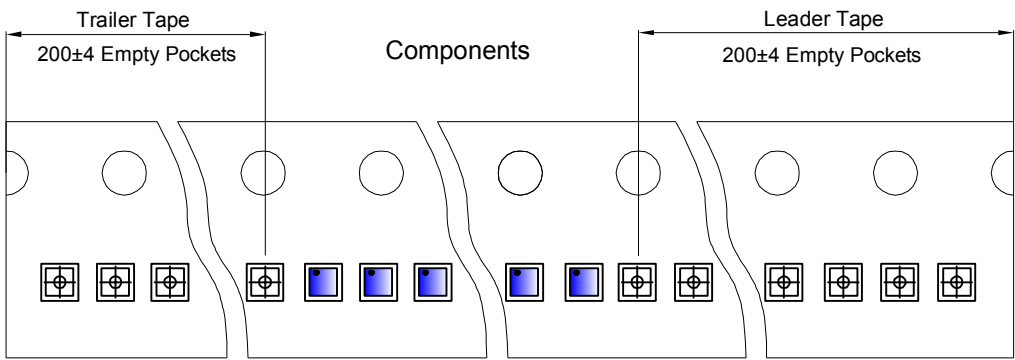
DFNWB1x1-3L Embossed Carrier Tape



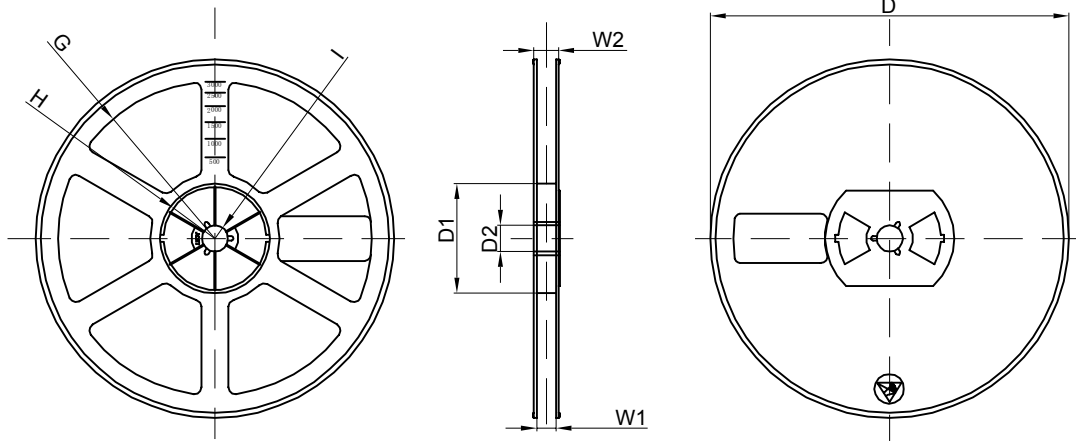
Packaging Description:
DFNWB 1x1-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 10,000 units per 7" or 18.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).
Note: If it is the product of the same polarity, the cathode line should be removed.

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	Ø180.00	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	