

1.Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	10mΩ@-4.5V	-16A
	14mΩ@-2.5V	

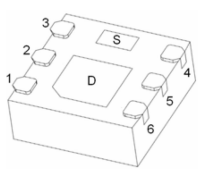
2.Features

- V_{DS} -20V
- I_D -16A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <18 mohm
- High Power and current handing capability
- Lead free product is acquired

3.Applications

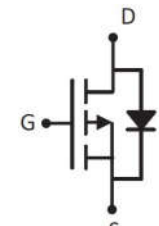
- Power switching application
- Hard switched and high frequency circuits

DFNWB2×2-6L

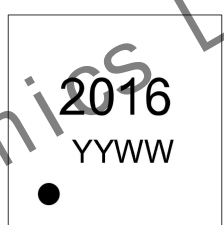


1,2,5,6 :DRAIN
3 :GATE
4 :SOURCE

Schematic diagram



Marking



2016 : Device Code
YY : Year Code
WW : Week Code

4.Absolute Maximum rating ($T_A = 25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-20	V
Gate - Source Voltage	V_{GS}	±12	V
Continuous Drain Current ¹	I_D	-16	A
Pulsed Drain Current ²	I_{DM}	-64	A
Power Dissipation ¹	$T_C = 25^{\circ}C$ P_D	18	W
Thermal Resistance from Junction to Case ¹	$R_{\theta JC}$	6.9	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

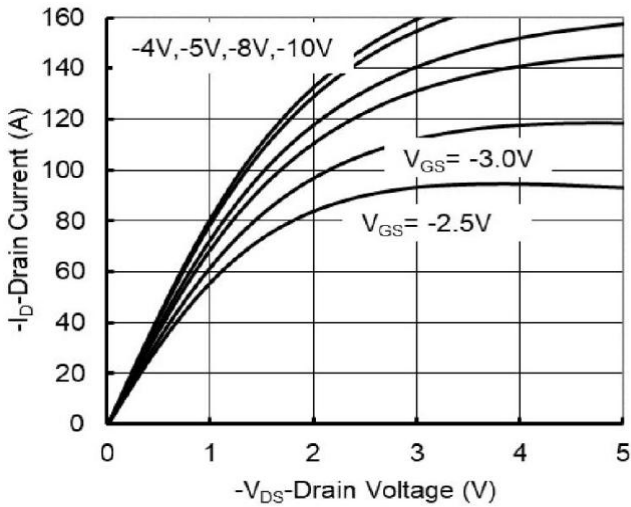
5. Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.65	-1.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -10A$		10	18	m Ω
		$V_{GS} = -2.5V, I_D = -6.5A$		14	22	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V, f = 1.0MHz$		2992		pF
Output Capacitance	C_{oss}			330		
Reverse Transfer Capacitance	C_{rss}			272		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{GS} = -10V, V_{DS} = -15V, I_D = -9.1A$		72.8		nC
Gate-source Charge	Q_{gs}			6.6		
Gate-drain Charge	Q_{gd}			10.1		
Turn-on Delay Time	$t_{d(on)}$	$V_{GS} = -10V, V_{DS} = -15V, I_D = -6A, R_{GEN} = 2.5\Omega$		7		ns
Turn-on Rise Time	t_r			33		
Turn-off Delay Time	$t_{d(off)}$			130		
Turn-off Fall Time	t_f			132		
Source - Drain Diode Characteristics						
Diode Forward Voltage ²	V_{SD}	$V_{GS} = 0V, I_S = -13A$			-1.2	V

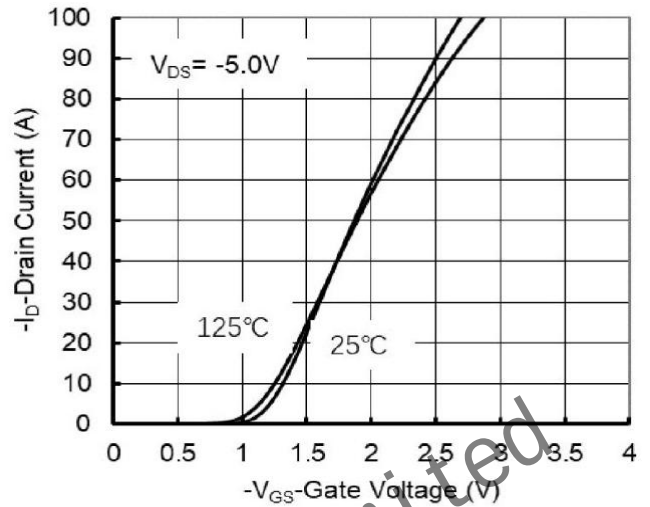
Notes:

- $T_C = 25^\circ\text{C}$ Limited only by maximum temperature allowed.
- $P_w \leq 10\mu s$, Duty cycle $\leq 1\%$.
- Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.

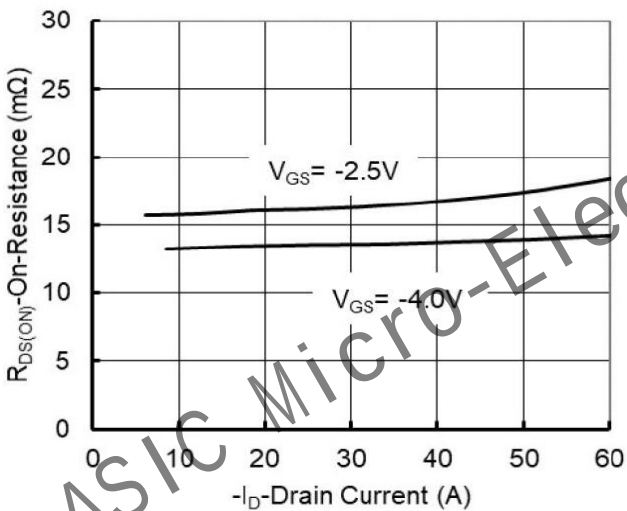
6. Typical Characteristic



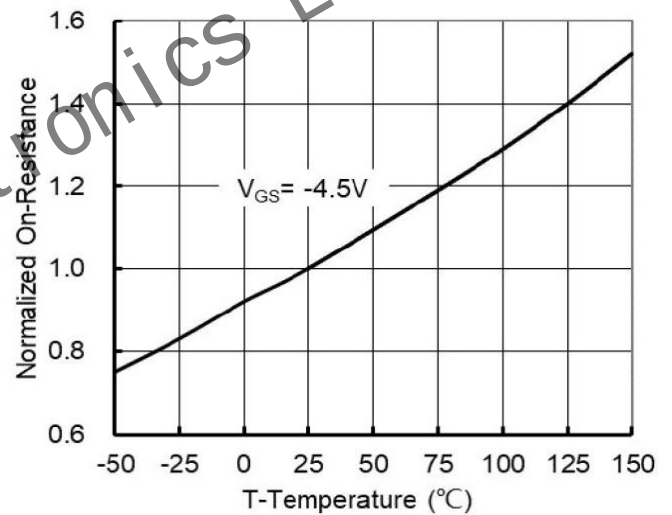
Output Characteristics



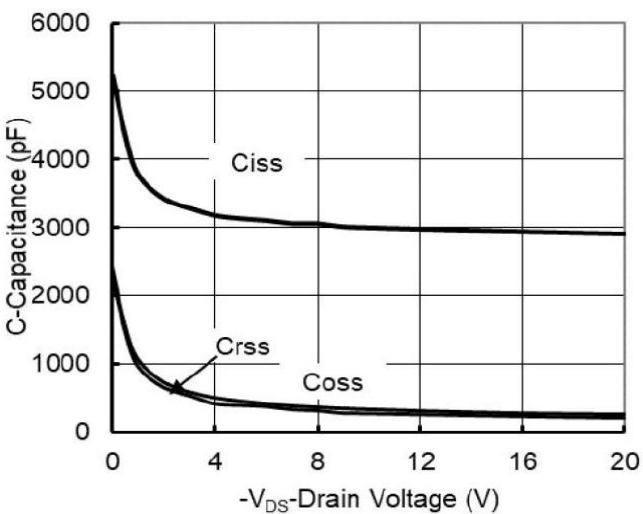
Transfer Characteristics



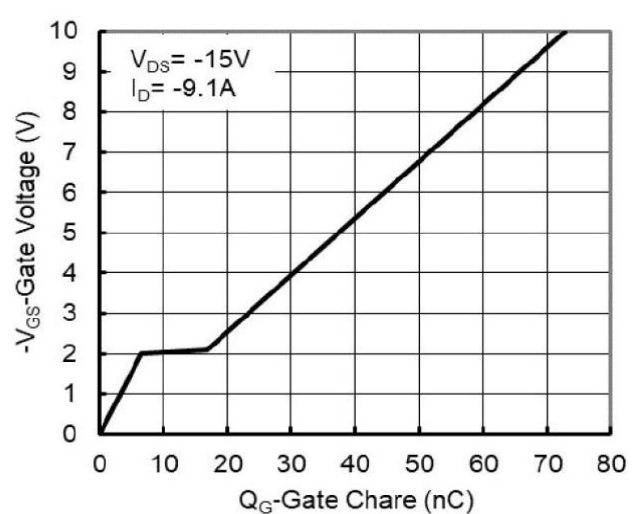
On Resistance vs. Drain Current



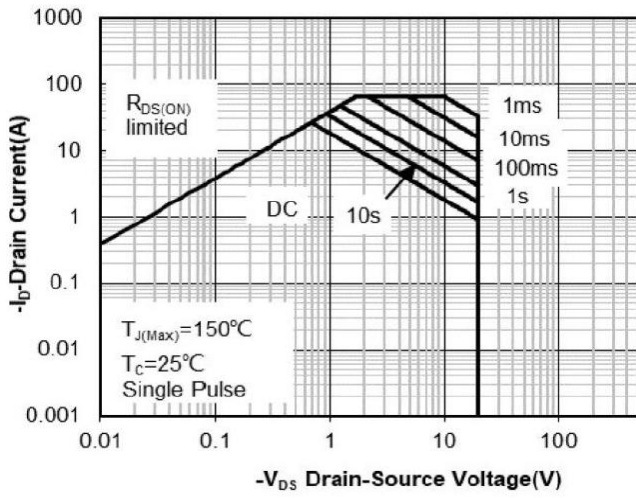
On-Resistance vs. Junction Temperature



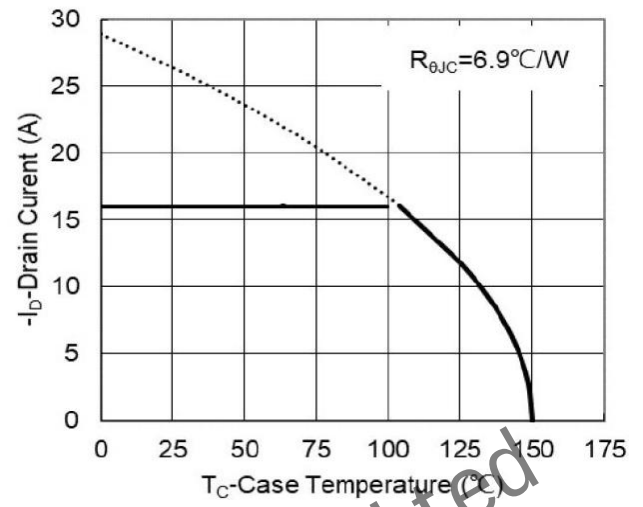
Gate Charge



Capacitance Characteristics

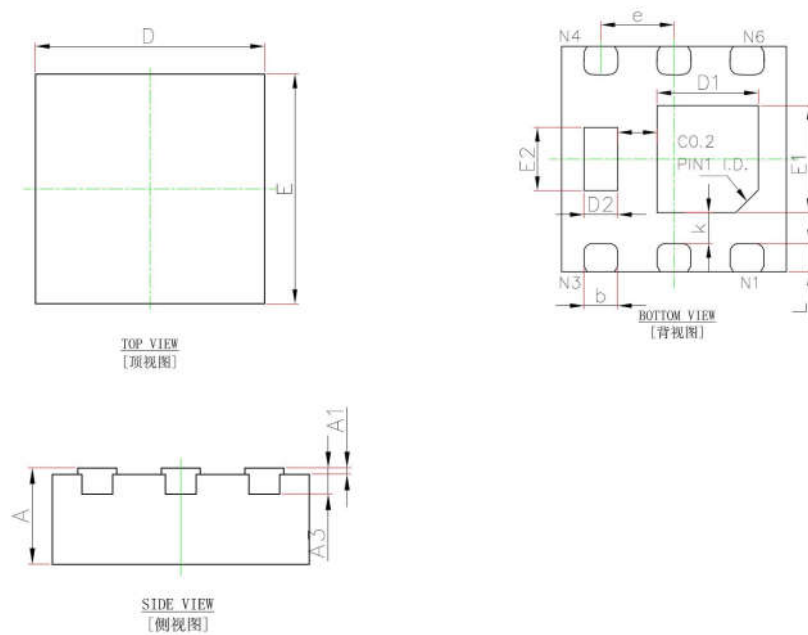


Maximum Forward Biased Safe Operating Area



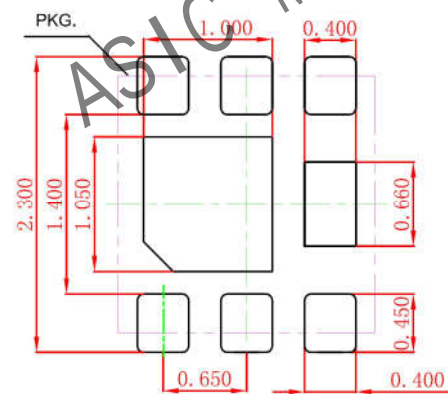
Current De-rating

7.Dimension



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
b	0.250	0.350	0.010	0.014
e	0.650BSC.		0.026BSC.	
k	0.275REF.		0.011REF.	
k1	0.350REF.		0.014REF.	
L	0.174	0.326	0.007	0.013

8.Recommended Land Pattern

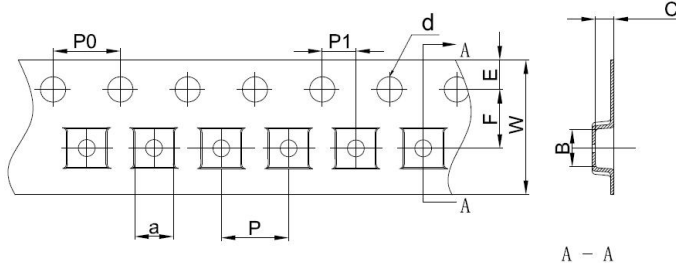


Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference only
4. Unit: mm

9. Tape and Reel

DFNWB2×2-6L Embossed Carrier Tape

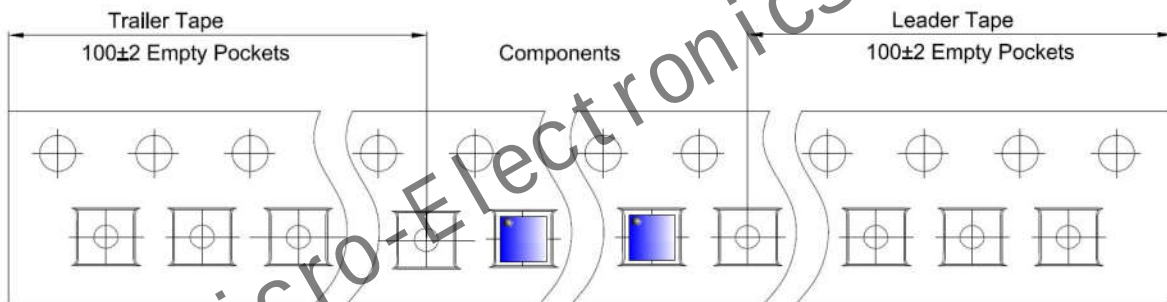


Packaging Description:

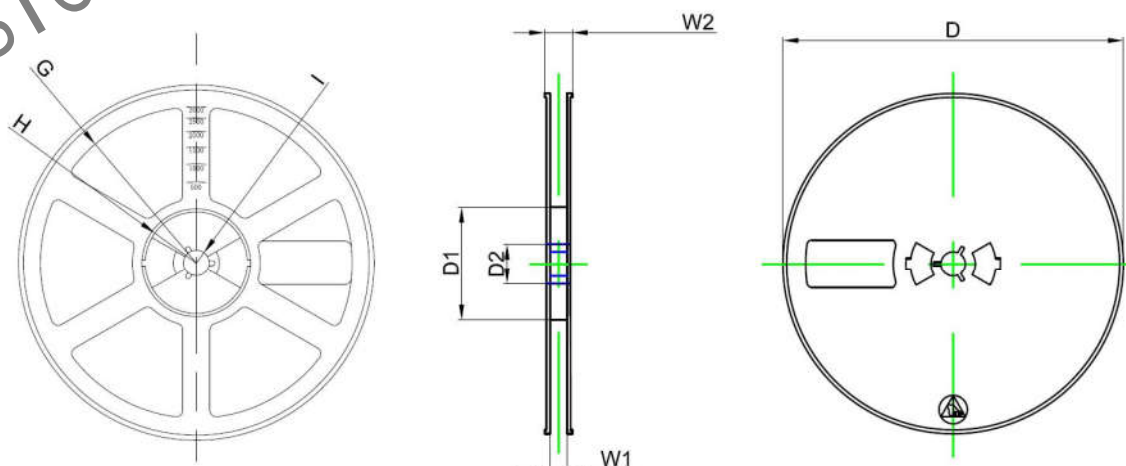
DFNWB2×2-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFNWB2×2-6L	2.30	2.30	1.10	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

DFNWB2×2-6L Tape Leader and Trailer



DFNWB2×2-6L 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)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	

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