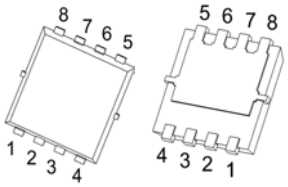
GP55N03P33

30V N-Channel MOSFET

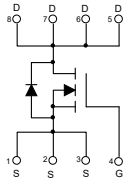
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	3.6mΩ@10V	55A
	5.7mΩ@4.5V	

PDFN3.3×3.3-8L



Schematic diagram



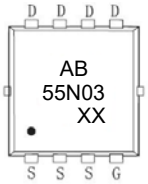
Feature

- High density cell design for ultra low $R_{DS(ON)}$
- High Current Capability

Application

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING:



AB55N03 = Device Code

Solid dot = Pin1 indicator

XX = Date Code

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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	30	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current[1]	T_C = 25℃	I_D	55	A
Pulsed Drain Current[2]		I_{DM}	165	A
Single Pulsed Avalanche Current[3]		I_{AS}	36	A
Single Pulsed Avalanche Energy[3]		E_{AS}	65	mJ
Power Dissipation[4]	T_C = 25℃	P_D	36	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	75	℃/W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	3.5	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

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

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.0	1.7	2.5	V
Drain-source On-resistance[2]	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A		3.6	4.4	mΩ
		V_{GS} = 4.5V, I_D = 20A		5.7	7.5	
Forward Transconductance	g_{FS}	V_{DS} = 10V, I_D = 20A	10			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		2812		pF
Output Capacitance	C_{oss}			305		
Reverse Transfer Capacitance	C_{rss}			250		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		2		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 15V, V_{GS} = 10V, I_D = 20A		40		nC
Gate-source Charge	Q_{gs}			8		
Gate-drain Charge	Q_{gd}			12		
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 15V, V_{GS} = 10V, R_L = 0.75Ω R_G = 3Ω		9		ns
Turn-on Rise Time	t_r			8		
Turn-off Delay Ttime	$t_{d(off)}$			30		
Turn-off Fall Time	t_f			12		
Source - Drain Diode Characteristics						
Diode Forward Voltage[2]	V_{SD}	V_{GS} = 0V, I_S = 20A			1.2	V

Notes :

1.The maximum current rating is limited by package.

2.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

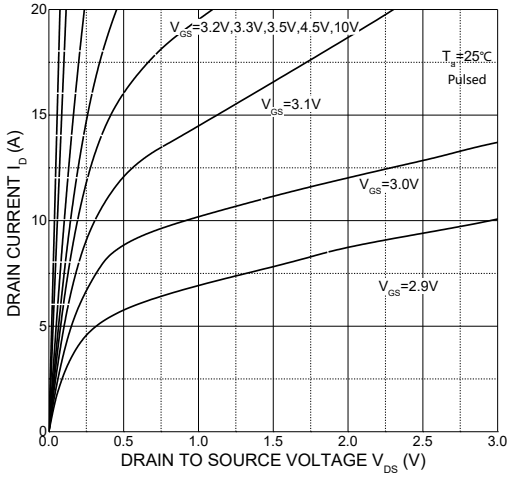
3.E_{AS} condition: V_{DD} = 15V,V_{GS} = 10V, L = 0.1mH, R_G = 25Ω Starting T_J = 25°℃.

4.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

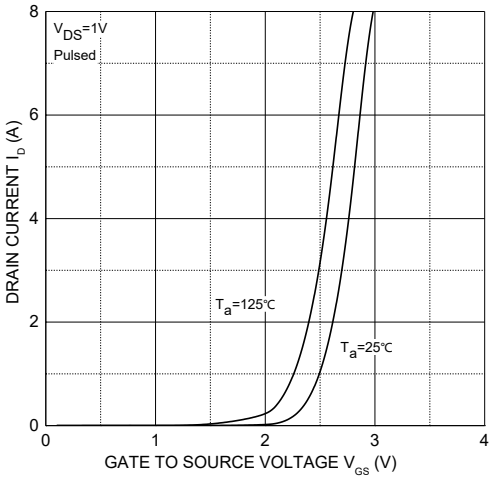
5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

Typical Characteristics

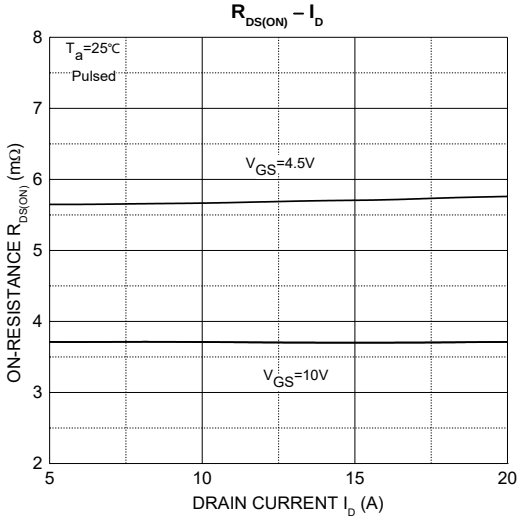
Output Characteristics



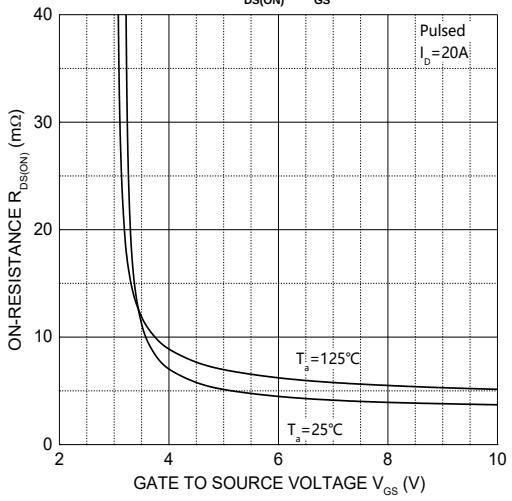
Transfer Characteristics



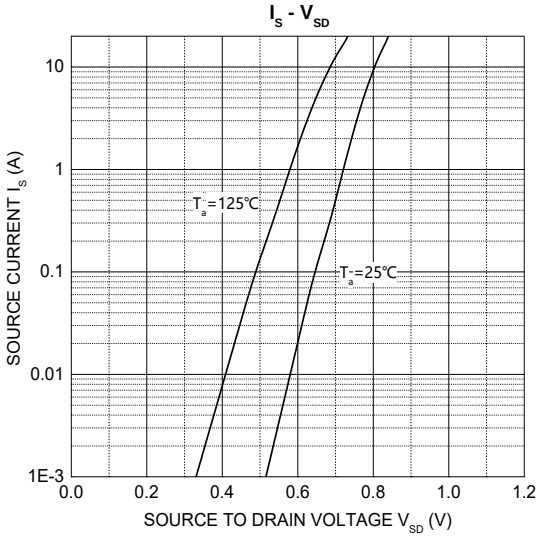
$R_{DS(ON)}$ – I_D



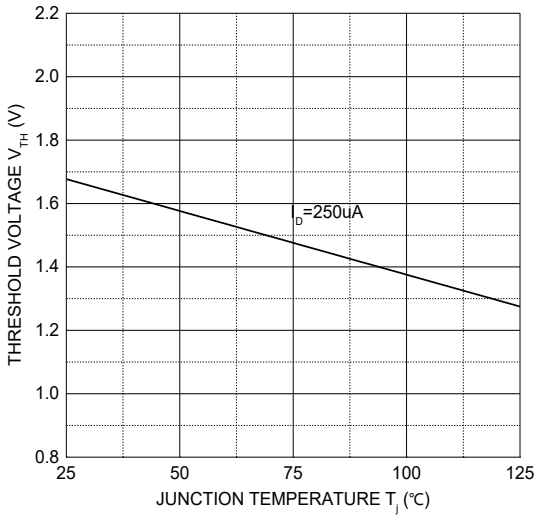
$R_{DS(ON)}$ - V_{GS}



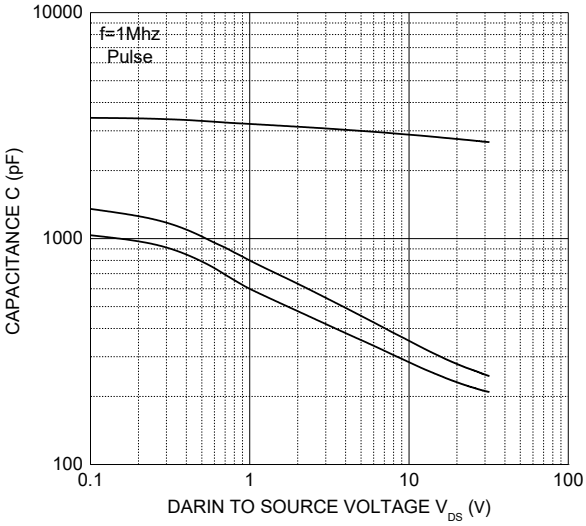
I_S - V_{SD}



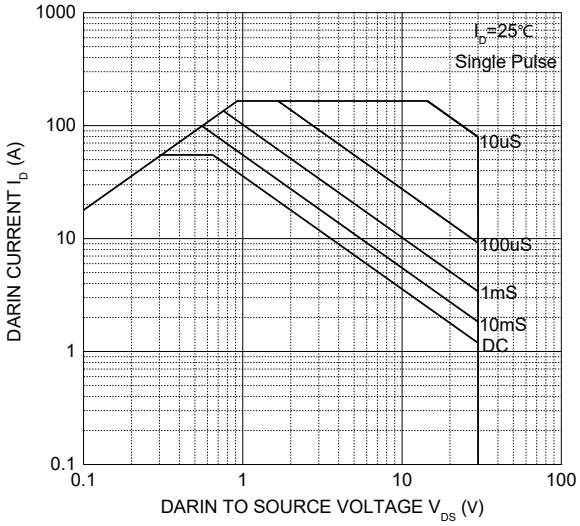
Threshold Voltage



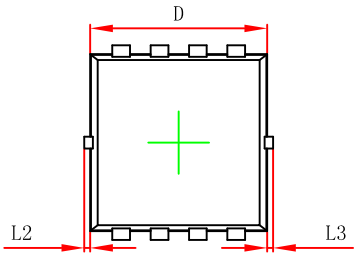
Capacitances



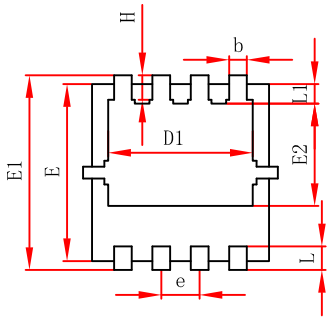
Maximum Forward Biased Safe Operating Area



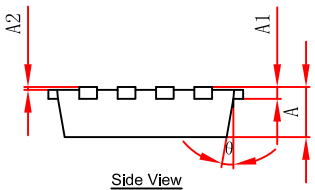
PDFN3.3×3.3-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]

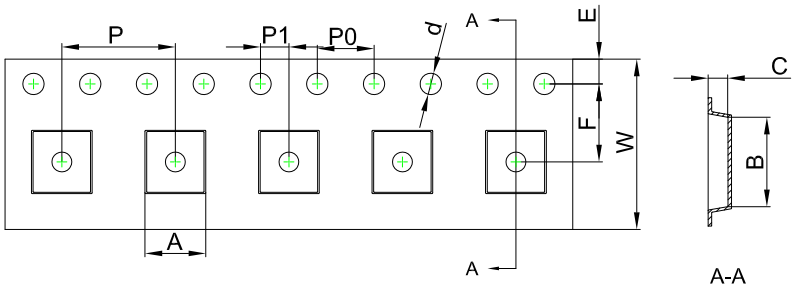


Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

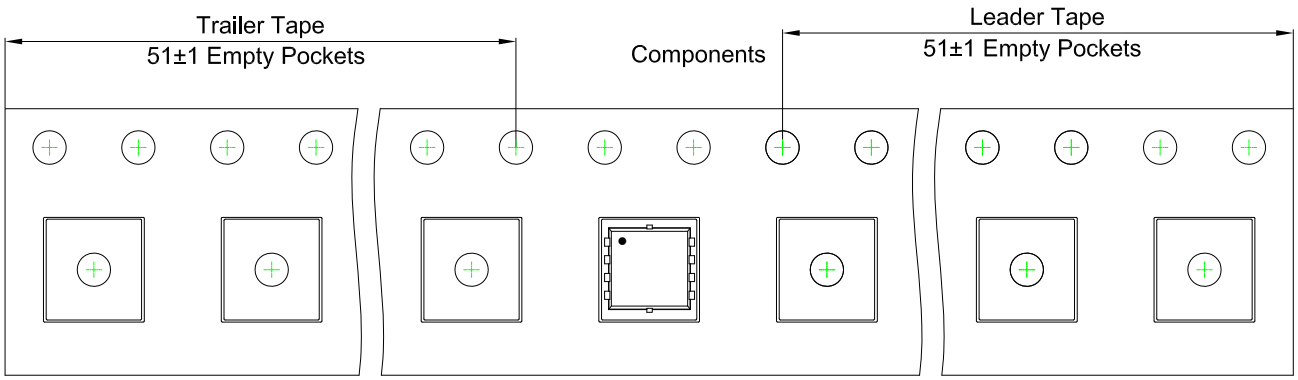
PDFN3.3×3.3-8L Tape and Reel

PDFNWB3.3×3.3-8L Embossed Carrier Tape

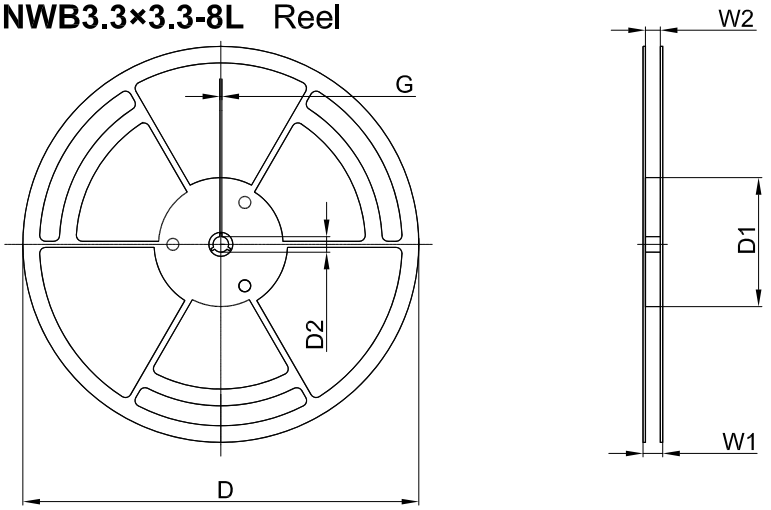


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
PDFNWB3.3×3.3-8L	3.55	3.55	1.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFNWB3.3×3.3-8L Tape Leader and Trailer



PDFNWB3.3×3.3-8L Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	G	W1	W2
13"Dia	Ø330.00	100.00	13.00	1.90	17.60	12.40

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
5,000 pcs	13 inch	5,000 pcs	340×336×29	50,000 pcs	353×346×365