

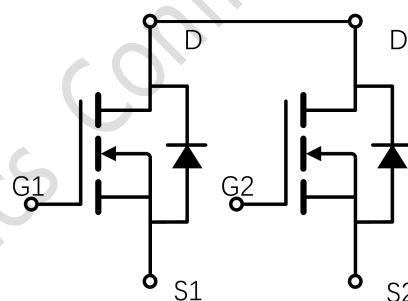
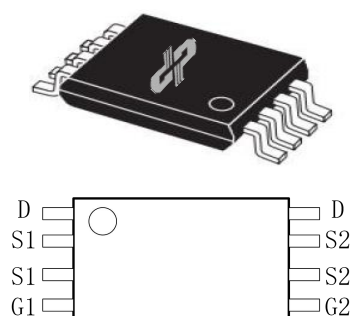
GENERAL DESCRIPTION

DP8205B uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

PRODUCT SUMMARY

VDS	20V
ID (at VGS=4.5V)	6.5A
RDS(ON) (at VGS = 4.5V)	<16mR
RDS(ON) (at VGS = 2.5V)	<21mR

TSSOP-8



ABSOLUTE MAXIMUM RATINGS $T_A=25^{\circ}\text{C}$ unless otherwise noted

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	VDS	20	V
Gate-Source Voltage	VGS	± 12	V
Drain Current-Continuous @ $T_J=25^{\circ}\text{C}$	I_D	6.5	A
Pulsed ^b	I_{DM}	25	A
Drain-Source Diode Forward Current ^a	I_S	6.5	A
Maximum Power Dissipation ^a	P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}\text{C}$

THERMAL CHARACTERISTIC

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient a	$R_{\theta JA}$	100	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BVDSS	V _{GS} =0V I _D =250μA	20	-	-	V
Zero Gate Voltage Drain Current	IDSS	V _{DS} =20V,V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	IGSS	V _{GS} =±12V,V _{DS} =0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	VGS(th)	V _{DS} =V _{GS} ,I _D =250μA	0.5	0.7	1.2	V
Drain-Source On-State Resistance	RDS(ON)	V _{GS} =4.5V, I _D =4.5A	10	13.5	18	mΩ
		V _{GS} =2.5V, I _D =3.5A	12	16.5	21	mΩ
Forward Transconductance	gFS	V _{DS} =5V,I _D =4.5A	-	10	-	S
Dynamic Characteristics						
Input Capacitance	Ciss	V _{DS} =10V, V _{GS} =0V, F=1.0MHz	-	947	-	pF
Output Capacitance	Coss		-	167	-	pF
Reverse Transfer Capacitance	Crss		-	115	-	pF
Switching Characteristics						
Turn-on Delay Time	td(on)	V _{DD} =10V,I _D =1A V _{GS} =4.5V, R _{GEN} =6Ω , R _L =10Ω	-	10	20	nS
Turn-on Rise Time	t _r		-	11	25	nS
Turn-Off Delay Time	td(off)		-	35	70	nS
Turn-Off Fall Time	t _f		-	30	60	nS
Total Gate Charge	Q _g	V _{DS} =10V, I _D =6A, V _{GS} =4.5V	-	11	18	nC
Gate-Source Charge	Q _{gs}		-	3.2	-	nC
Gate-Drain Charge	Qgd		-	1.5	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	V _{GS} =0V,I _S =1.7A	-	0.79	1.2	V

Notes:

1. Surface Mounted on FR4 Board ,T<10 sec ;
2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
3. Guaranteed by Design, not subject to production testing.



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

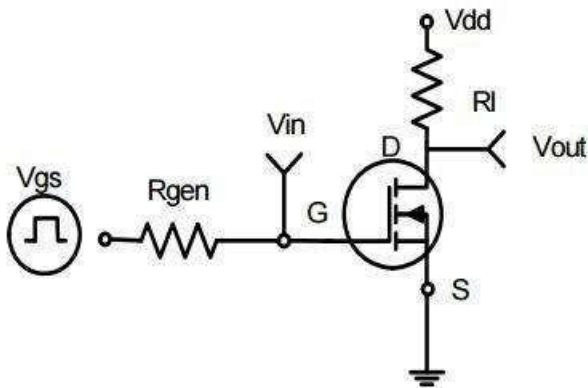


Figure 1: Switching Test Circuit

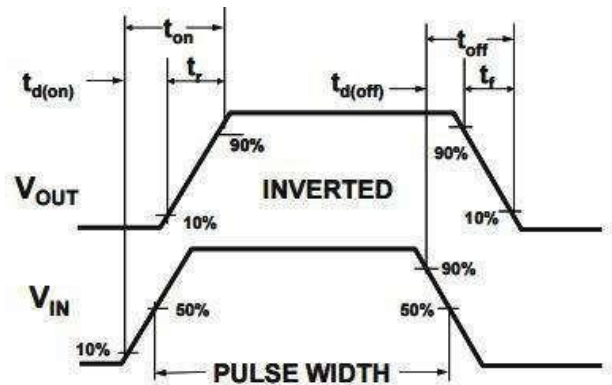


Figure 2: Switching Waveforms

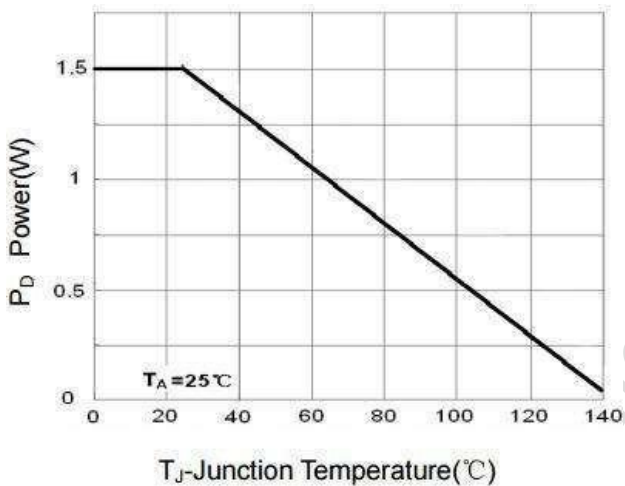


Figure 3: Power Dissipation

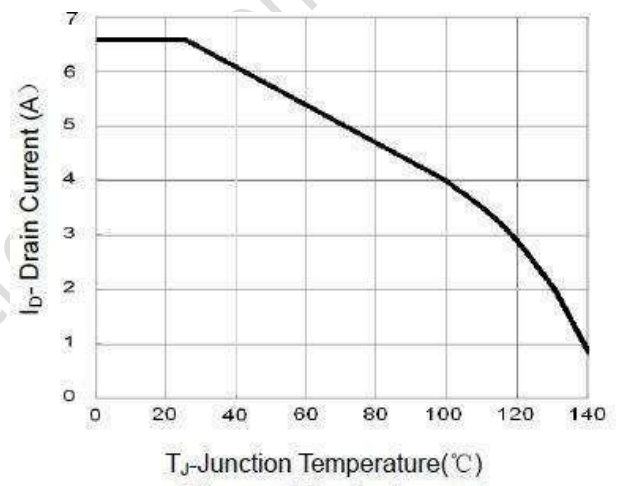


Figure 4: Drain Current

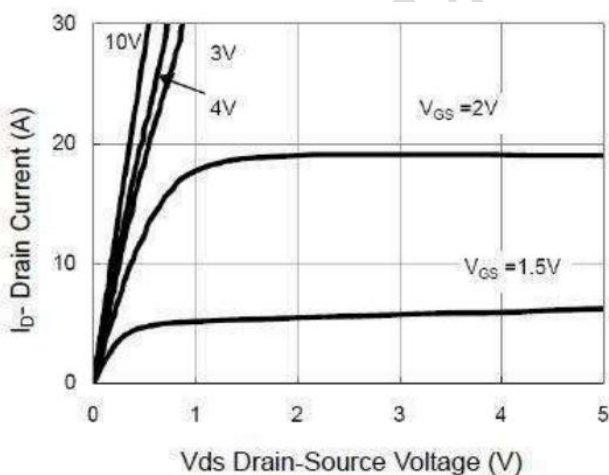


Figure 5: Output Characteristics

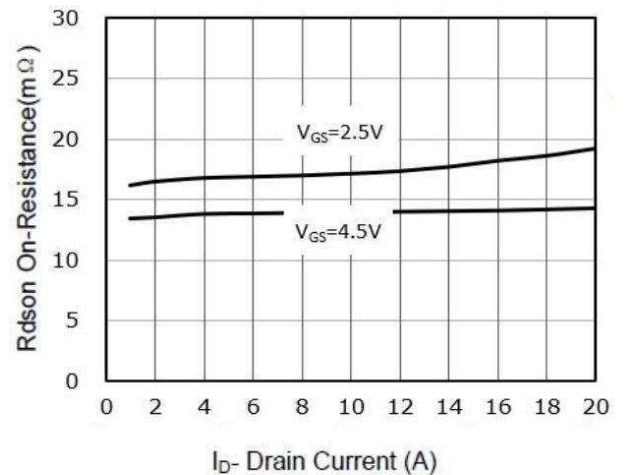
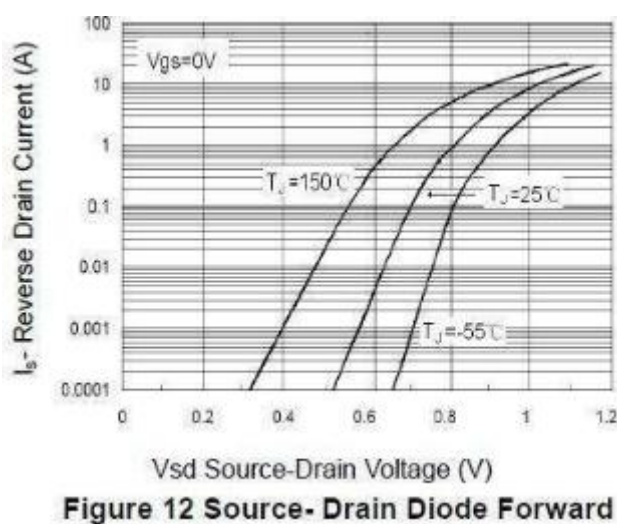
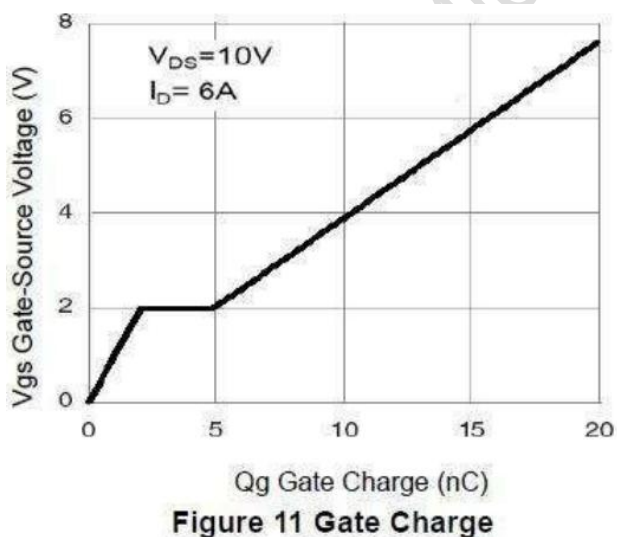
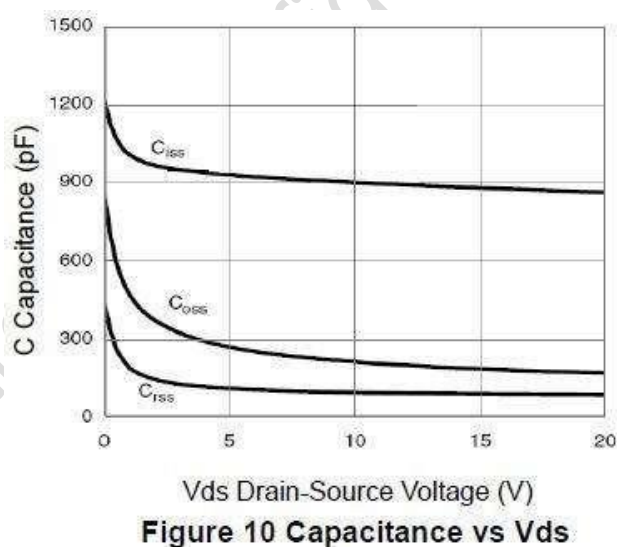
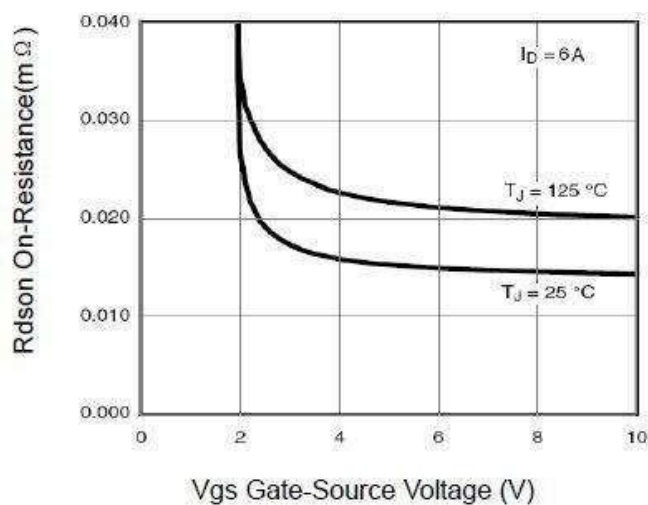
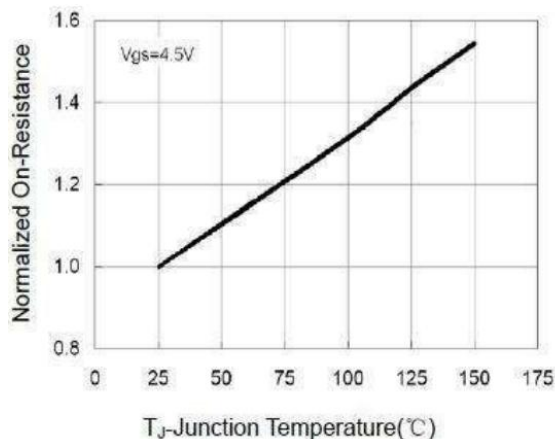
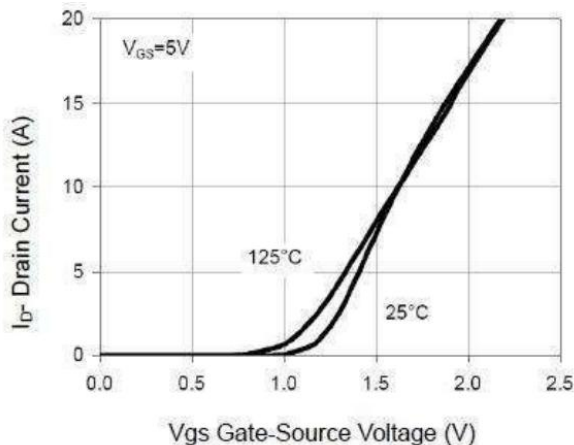


Figure 6: Drain-Source On-Resistance



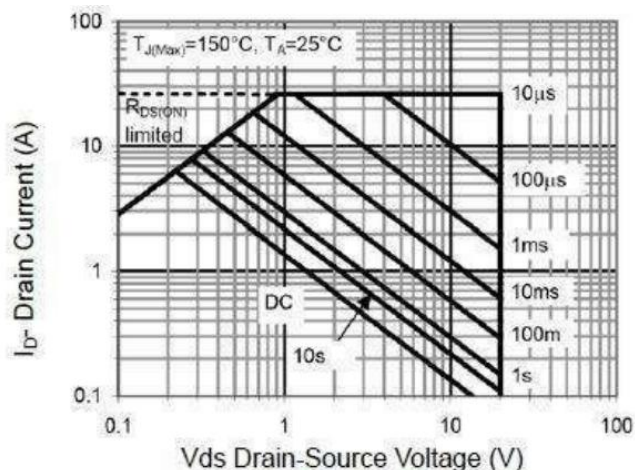


Figure 13 Safe Operation Area

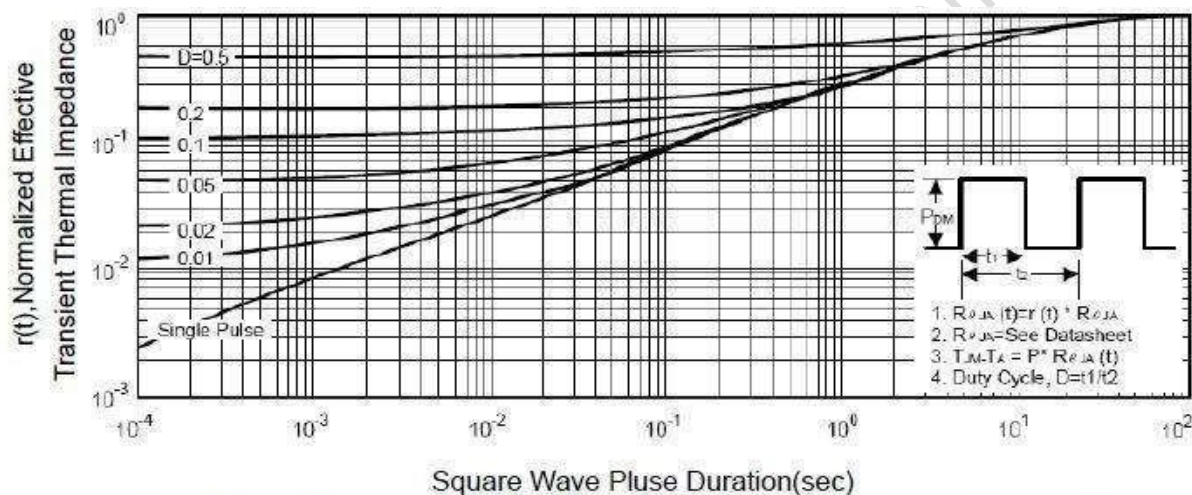


Figure 14 Normalized Maximum Transient Thermal Impedance

MARKING DESCRIPTION

**NOTE:**

Y—Code of productive year code(the last number of the year)

M —Code of productive month(for example: A means January, B means February...)

DD —Productive date(the number of the date)

NN —Lot number of wafer

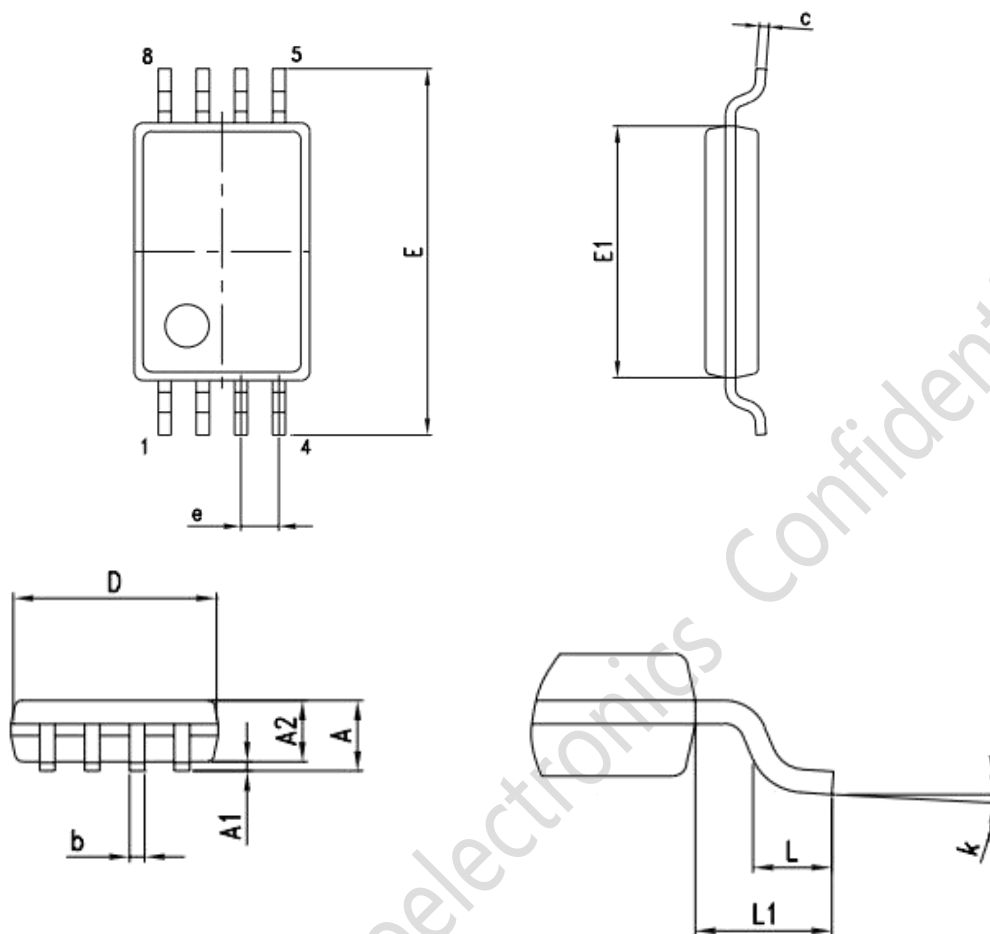
FOR EXAMPLE:

8E1103

Means this product was produced in

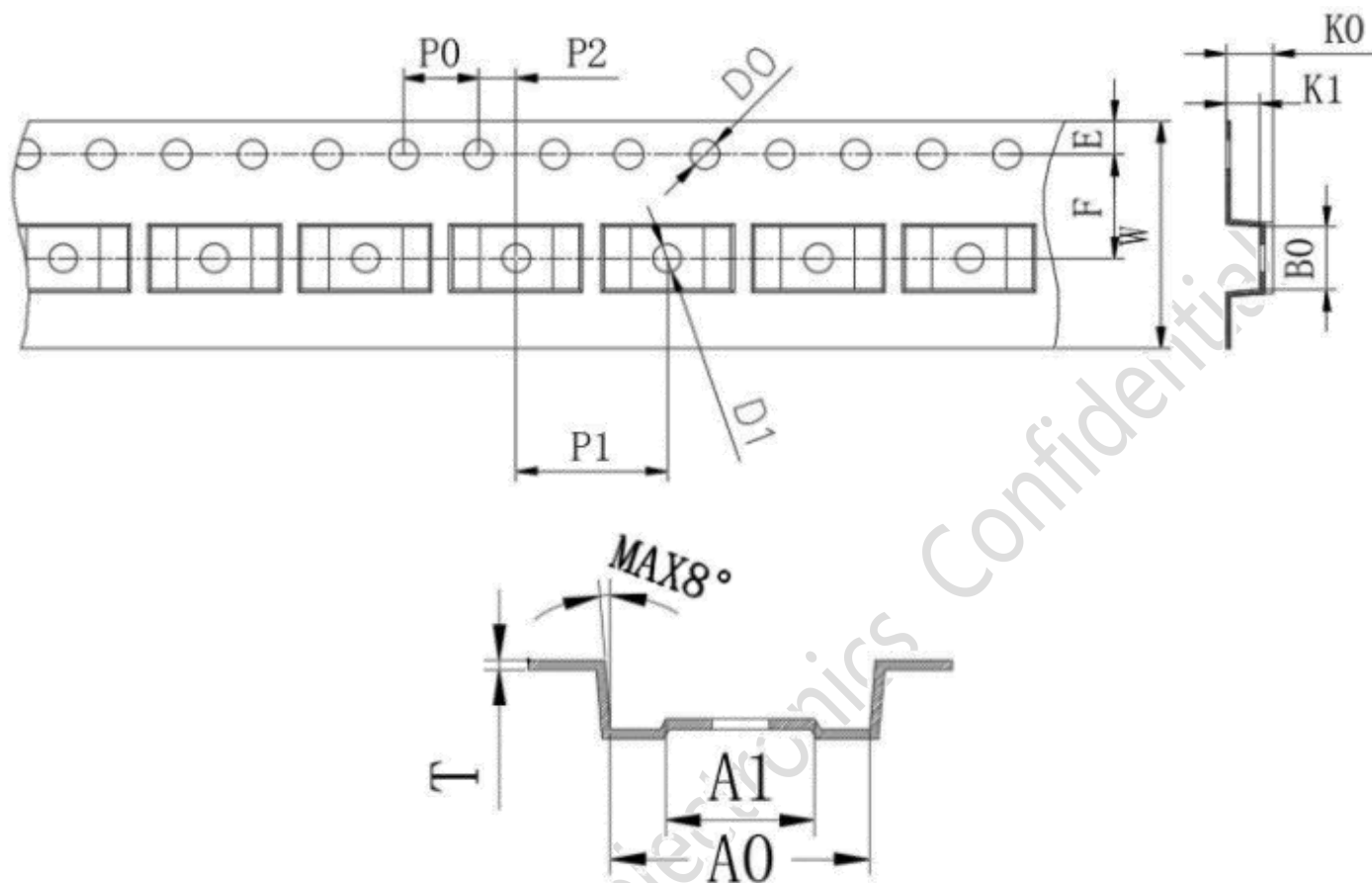
2018-05-11 , and 03 is the wafer lo

PACKAGE OUTLINE DIMENSIONS



DIM.	mm.			inch.		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	1.05		1.20	0.041		0.047
A1	0.05		0.15	0.002		0.006
A2	0.80		1.05	0.032		0.041
b	0.19		0.30	0.008		0.012
c	0.090		0.20	0.003		0.007
D	2.90		3.10	0.114		0.122
E	6.20		6.60	0.240		0.260
E1	4.30		4.50	0.170		0.177
e		0.65			0.025	
L	0.45		0.75	0.018		0.030
L1		1.00			0.039	
k	0°		8°	0.192		0.208

TAPE SIZE



SYMBOL	A0	B0	K0	P0	P1	P2
SPEC	6.90 ± 0.10	3.30 ± 0.10	1.60 ± 0.10	4.00 ± 0.10	8.00 ± 0.10	2.00 ± 0.05
SYMBOL	T	E	F	D0	D1	W
SPEC	0.25 ± 0.05	1.75 ± 0.10	5.50 ± 0.05	1.55 ± 0.05	1.50 ± 0.10	$12.00^{+0.30}_{-0.10}$

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