

5~24V

OUT R/G/B 19mA REXT

R<sub>EXT</sub> 60mA

OUT R/G/B

OUT R/G/B 26V

OUT R/G/B 65536 GAMMA

OUT R/G/B 4bits

PWM 4KHz

800Kbps

SOP8

LED

/

SM16803PB LED

SM16803PB

SM16803PB 19mA REXT

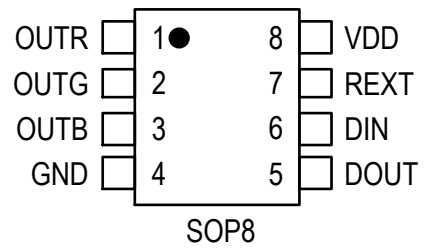
1.8mA~19mA 16

REXT

OUT R/G/B 60mA

SM16803PB 65536 GAMMA

4KHz



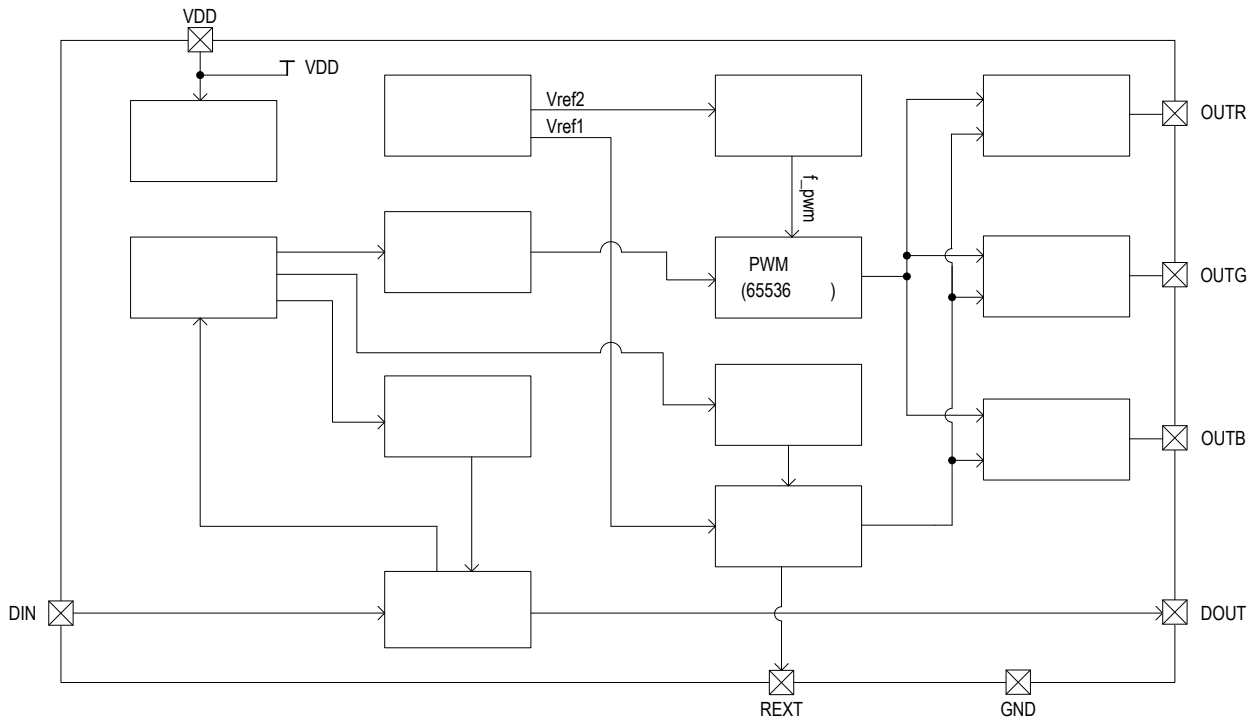


Fig. SM16803PB

1	OUTR			
2	OUTG			
3	OUTB			
4	GND			
5	DOUT		/	
6	DIN		/	
7	REXT	REXT	GND	OUT R/G/B
8	VDD			

SM16803PB	SOP8	100000 /	4000 /	13

业务电话：400-033-6518

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VDD=5V TA=25°C

VDD		VCC=12V VCC VDD RD=510Ω	4.8	5.2	5.5	V
IDD		VDD=4.5V IOUT"OFF" REXT	-	8.0	-	mA
		VDD=4.5V IOUT"OFF" REXT=1KΩ	-	10.0	-	mA
VIH		DIN DOUT	0.7xVDD	-	-	V
VIL		DIN DOUT	-	-	0.3xVDD	V
IOH		DIN DOUT 10Ω GND	-	-48	-	mA
IOL		DIN DOUT DOUT	-	57	-	mA
IOUT_R/G/B	OUT R/G/B	VDS=2V REXT 1111	-	19	-	mA
		VDS=2V REXT 0.9K 1111	-	-	60	mA
		VDS=2V REXT 0000~1111	1.8	-	19	mA
VDS	OUT R/G/B	IOUT=19mA	-	0.6	-	V
		IOUT=40mA	-	0.9	-	V
		IOUT=60mA	-	1.2	-	V
VREXT	REXT	-	-	1.0	-	V
%VS.VDS	OUT R/G/B	IOUT=19mA VDS=1.0~3.0V	-	0.5	-	%
%VS.VDD		IOUT=19mA VDD=4.5~5.5V	-	0.5	-	%
%VS.TA		IOUT=19mA TA=-40~+85	-	3.0	-	%
Ileak	OUT R/G/B	VDS = 26V IOUT "OFF"	-	-	1	uA

4

5

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VDD=5V TA= 25

$f_{PWM}$	OUT R/G/B PWM	$I_{OUT}=19mA$ OUT R/G/B VDD	200Ω	-	4	-	KHz
$t_{PLH}$		DOUT	30pF	-	73	-	ns
$t_{PHL}$				DIN DOUT	-	73	-
$t_{TLH}$	DOUT	DOUT	30pF	-	3.0	-	ns
$t_{THL}$				-	3.0	-	ns
$t_r$	OUT R/G/B	$I_{OUT}=19mA$ OUT R/G/B VDD	200Ω	-	55	-	ns
$t_f$				15pF	-	50	-

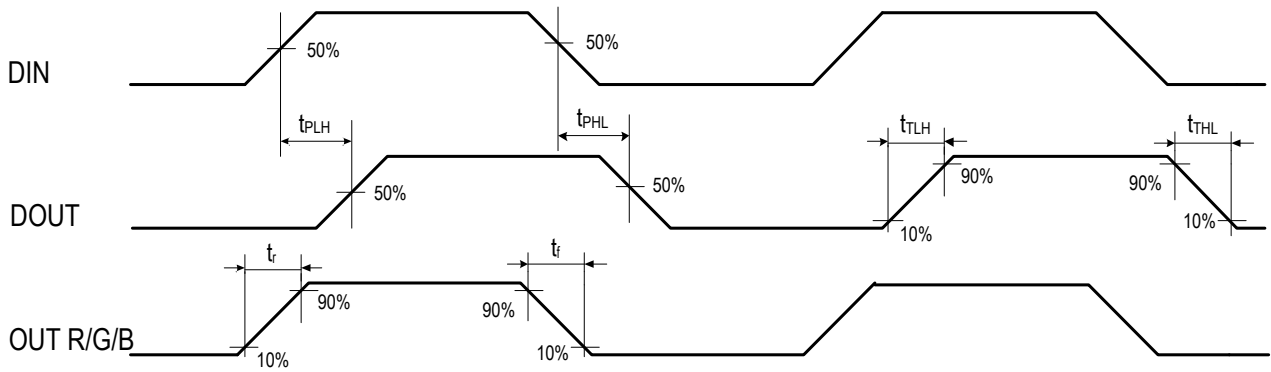


Fig. SM16803PB

SM16803PB

“0” “1”

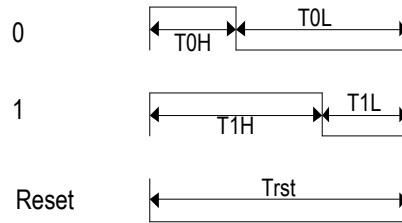
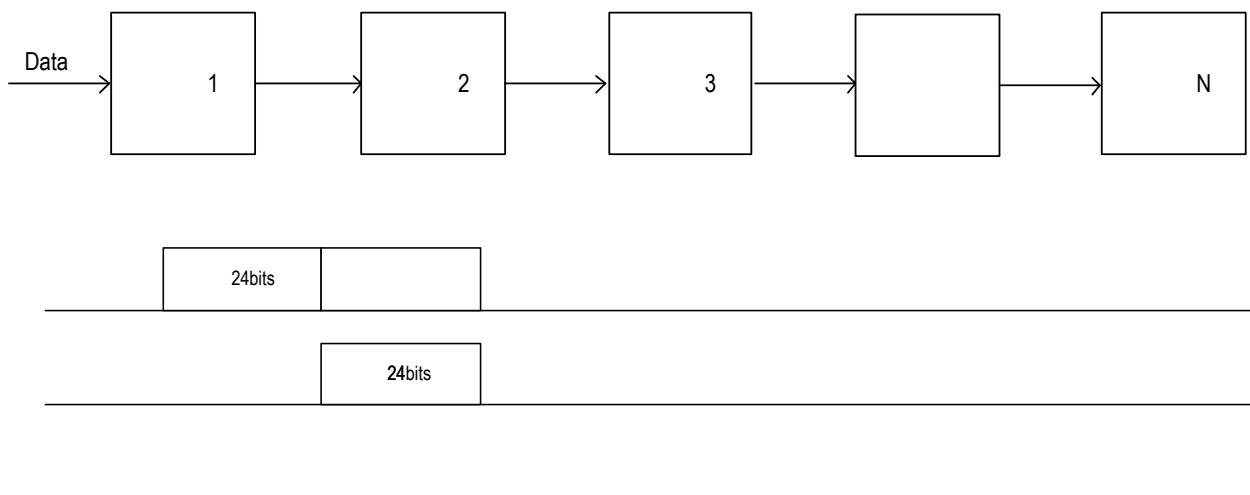
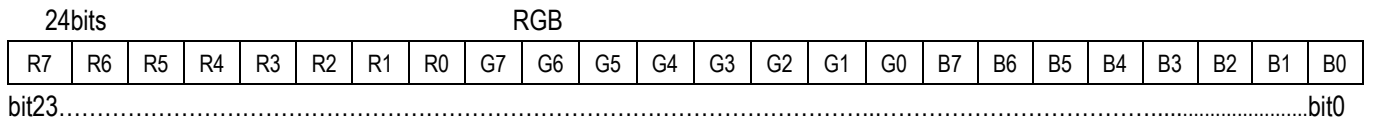


Fig. SM16803PB

T0H	0	-	0.3	-	±0.05	us
T0L	0	-	0.9	-	±0.05	us
T1H	1	-	0.9	-	±0.05	us
T1L	1	-	0.3	-	±0.05	us
Trst	Reset	200	-	-	-	us

Trst+          24bits          +          24bits          +.....+          N          24bits          +16bits          +Trst



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16bits				4bits				4bits				4bits				4bits S3~S0							
4bits				4bits				4bits				4bits				S3				S0			
				(R)				(G)				(B)											
S3	S2	S1	S0	S3	S2	S1	S0	S3	S2	S1	S0	S3	S2	S1	S0								

REXT

OUT R/G/B

19mA

G					mA
	S3	S2	S1	S0	
1	0	0	0	0	1.8
2	0	0	0	1	3.0
3	0	0	1	0	4.1
4	0	0	1	1	5.3
5	0	1	0	0	6.4
6	0	1	0	1	7.6
7	0	1	1	0	8.7
8	0	1	1	1	9.9
9	1	0	0	0	11
10	1	0	0	1	12.2
11	1	0	1	0	13.3
12	1	0	1	1	14.5
13	1	1	0	0	15.6
14	1	1	0	1	16.8
15	1	1	1	0	17.9
16	1	1	1	1	19

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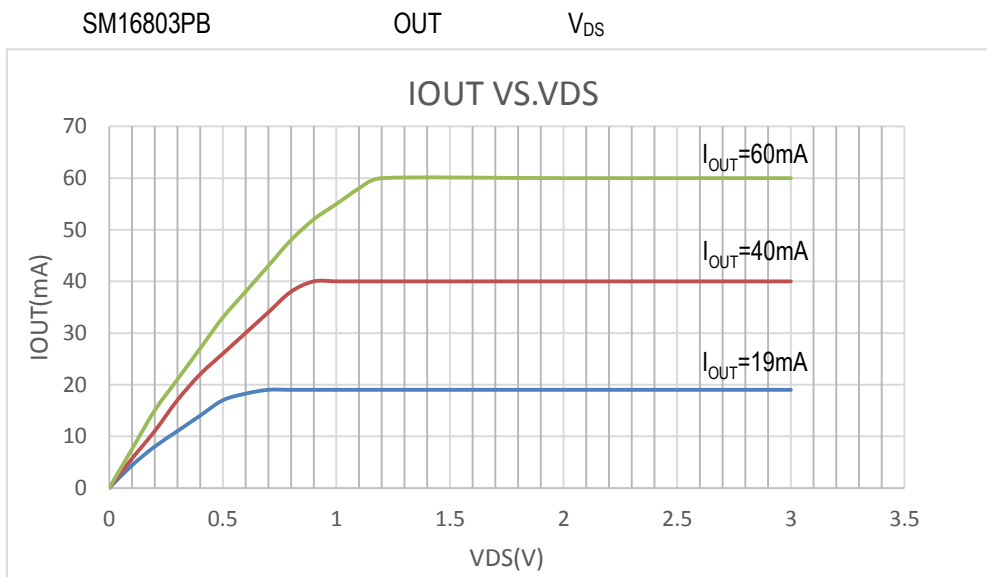


Fig. SM16803PB I<sub>OUT</sub> OUT V<sub>DS</sub>

REXT OUT R/G/B 19mA

REXT REXT GND 60mA REXT 16

G 1.8mA~60mA

16 REXT

$$I_{OUT} \text{ (mA) } = 19 \frac{V_{REXT}}{R_{EXT}} \cdot 37 \cdot 1000$$

V<sub>REXT</sub> REXT V<sub>REXT</sub> = 1.0V

0~15

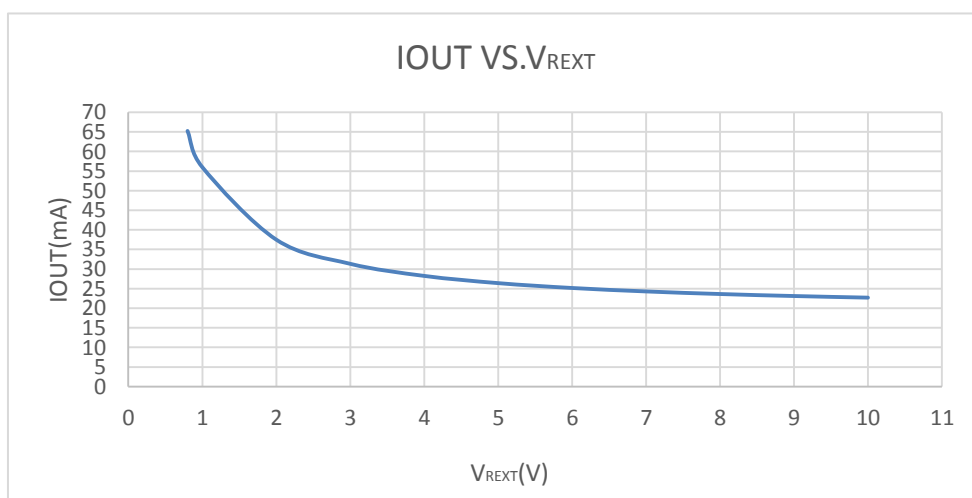
$$I_{OUT}' \text{ (mA) } = I_{OUT} \cdot (0.06 \cdot G + 0.095)$$


Fig. SM16803PB I<sub>OUT</sub> R<sub>EXT</sub>

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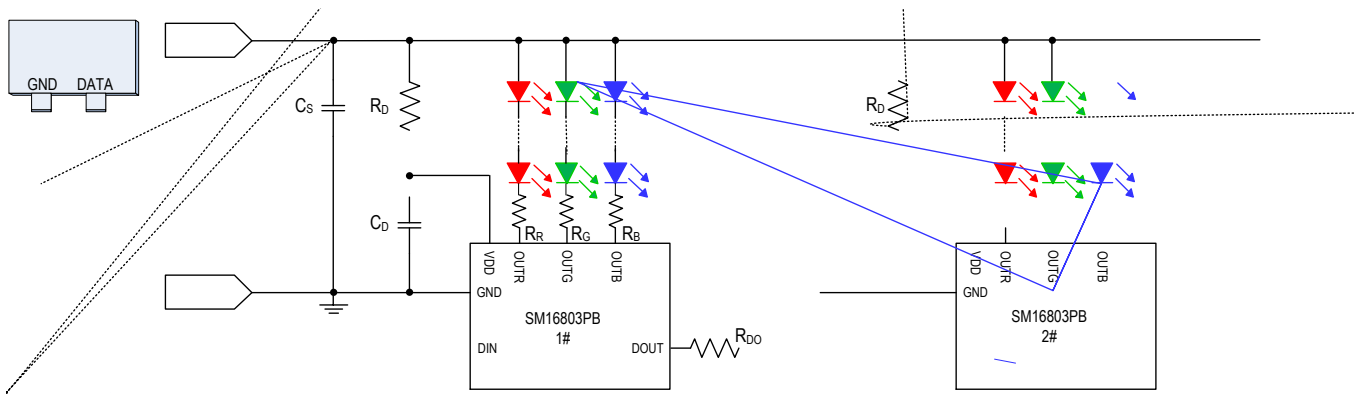


Fig. SM16803PB

SM16803PB		VCC		Cs		Rd	VDD
C <sub>D</sub>	R/G/B LED	R <sub>R</sub> R <sub>G</sub> R <sub>B</sub>	DIN	R <sub>DI</sub>	DOUT		R <sub>DO</sub>
1	VCC	R <sub>D</sub>					
	=	x	I <sub>DD</sub>	R <sub>D</sub>	VDD > 3V	R <sub>D</sub>	
		R <sub>D</sub>					R <sub>D</sub>
	VCC	R <sub>D</sub>					

	5	6	9	12	15	18	24
	33	100	300	510	1K	1.5K	2K

2	C <sub>S</sub>					0.1uF~10uF	
3	C <sub>D</sub>		VDD		C <sub>D</sub>		100nF
4	R <sub>DI</sub>	DIN					
5	R <sub>DO</sub>	DOUT					
6	R <sub>R</sub> R <sub>G</sub> R <sub>B</sub>	OUT R/G/B		OUT R/G/B			
		$\Omega = \frac{V_{DS}}{I_{OUT}} \times$	VCC	V <sub>LED</sub>	LED		I <sub>OUT</sub>
			V <sub>LED</sub>	V <sub>DS</sub>			
						2.0~2.2V	
	3.0~3.2V						

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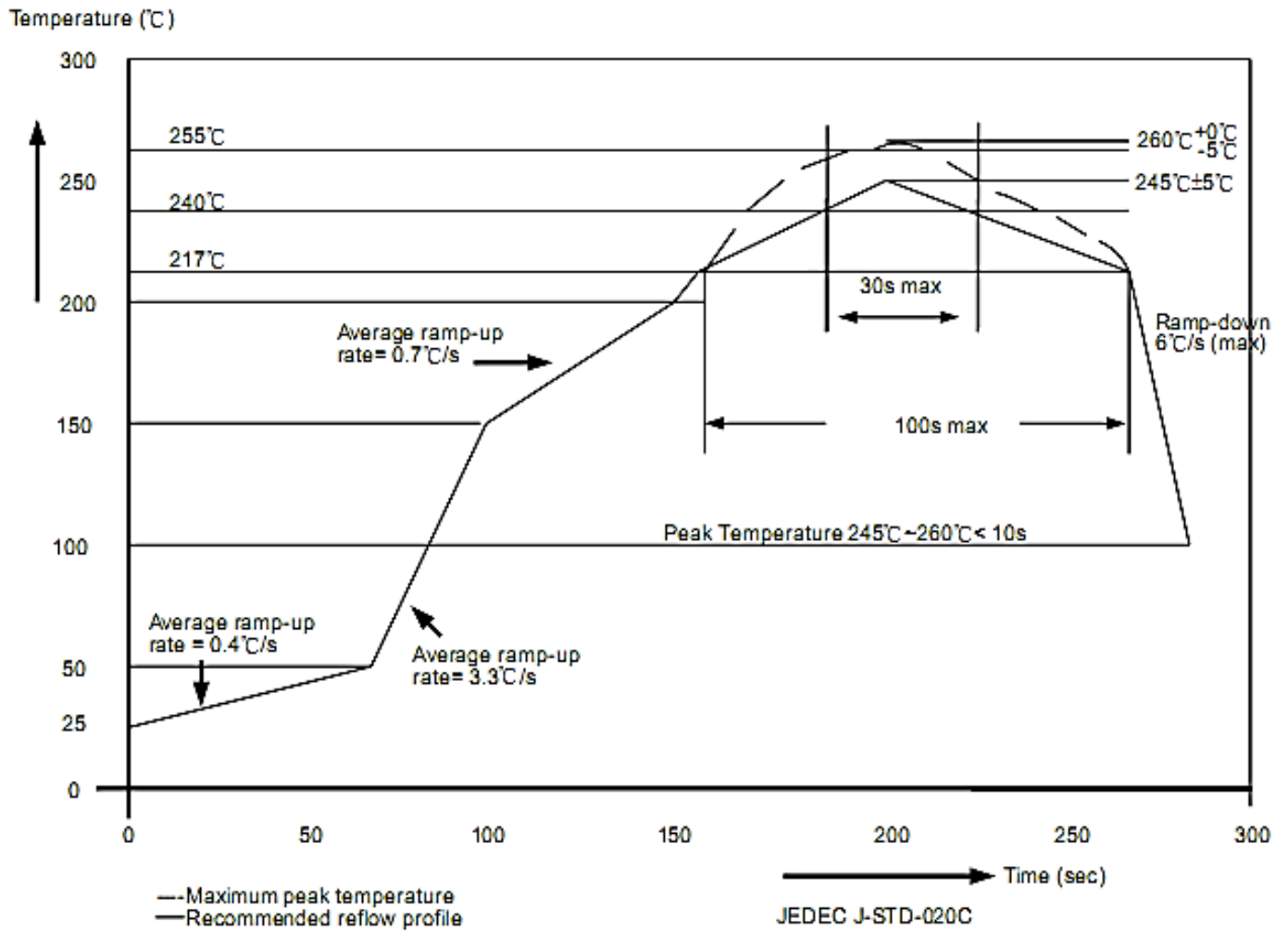
5	1	33	100					
12	3	510	100	51	150	150		
24	6	2K	100	100	300	510	150	150

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RoHs

J-STD-020

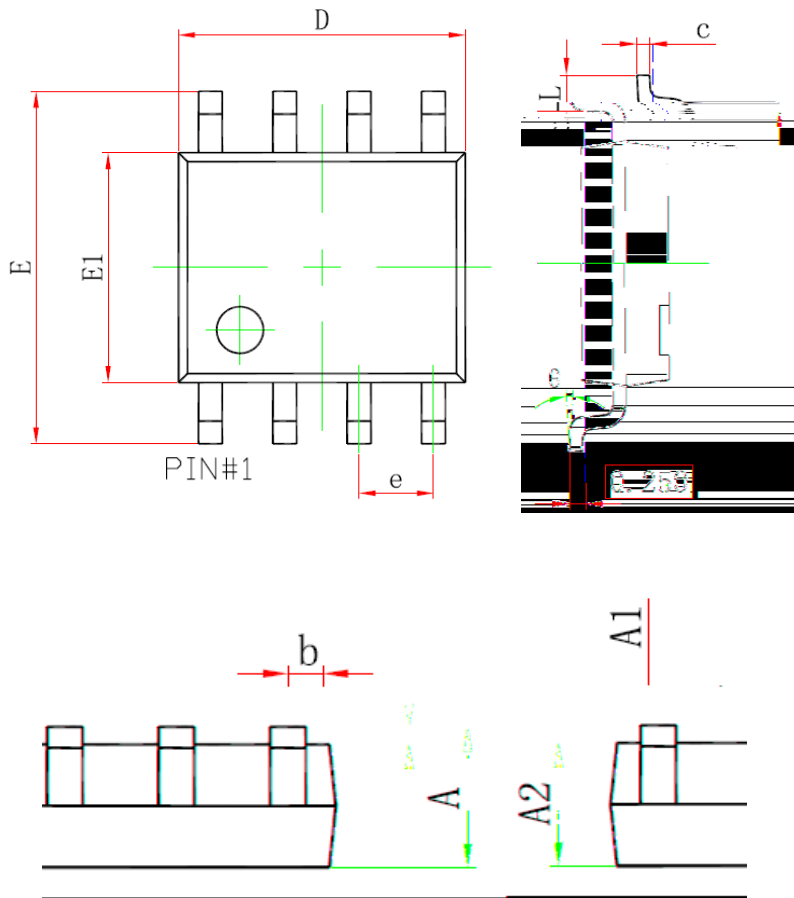


<1.6mm	260+0	260+0	260+0
1.6mm~2.5mm	260+0	250+0	245+0
≥2.5mm	250+0	245+0	245+0

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SOP8



A	1.25	1.95
A1	-	0.25
A2	1.25	1.75
b	0.25	0.7
c	0.1	0.35
D	4.6	5.3
e	1.27(BSC)	
E	5.7	6.4
E1	3.7	4.2
L	0.2	1.5
$\theta$	0°	10°

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