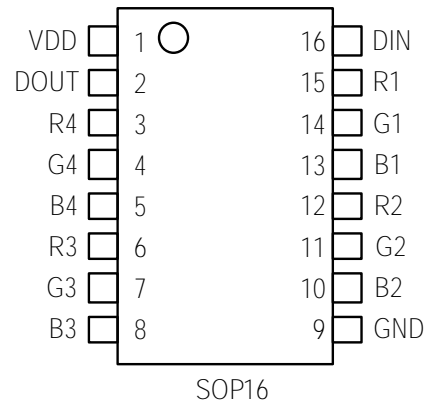


SM16712PD 12 LED

SM16712PD

SM16712PD OUT



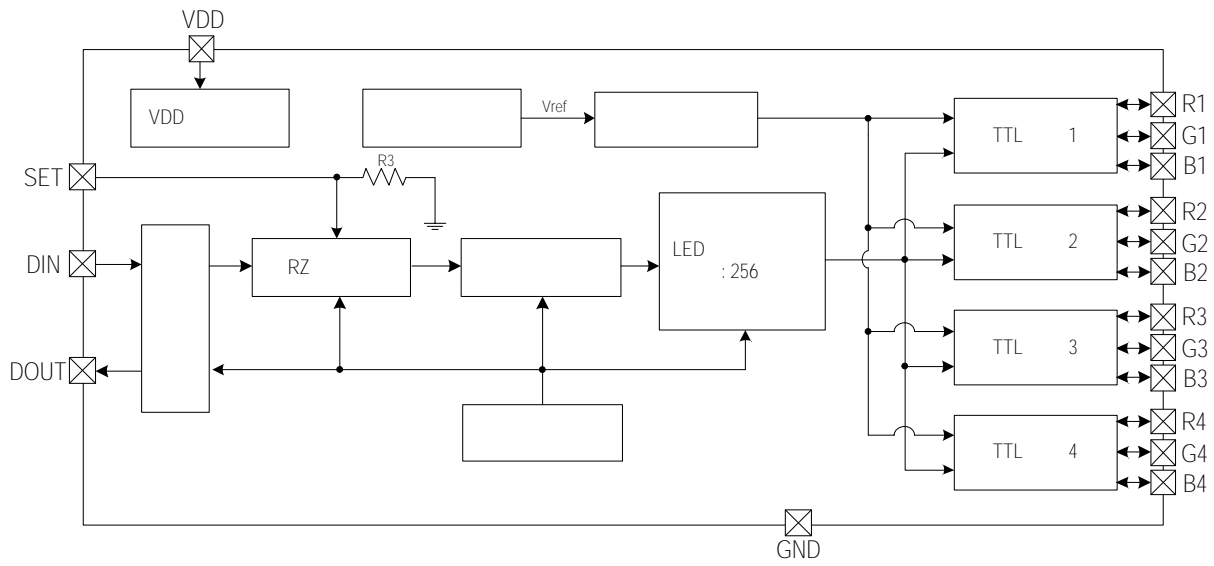


Fig. SM16712PD

1	VDD	
2	DOUT	
3/6/12/15	R4-R1	
4/7/11/14	G4-G1	
5/8/10/13	B4-B1	
9	GND	
16	DIN	

SM16712PD	SOP16	100000 /	4000 /	13

$T_A=25^\circ\text{C}$ 

VDD			-0.4~+5.4	V
$V_I$			-0.4~VDD+0.4	V
$BV_{OUT}$	R1~4/G1~4/B1~4		30	V
R JA	PN	2	90	$^\circ\text{C/W}$
$P_D$		3	0.9	W
$T_J$			-40~150	$^\circ\text{C}$
$T_{STG}$			-55~150	$^\circ\text{C}$
$V_{ESD}$	HBM		2	KV

1

2 R JA  $T_A=25^\circ\text{C}$ 

JEDEC JESD51

3

 $T_{JMAX}$  R JA $T_A$  $P_D = (T_{JMAX}-T_A)/R JA$ VDD=5V  $T_A=25^\circ\text{C}$ 

VDD		VCC=12V VCC VDD R <sub>D</sub> =1K	4.8	5.2	5.4	V
$I_{DD}$		VDD=4.5V I <sub>OUT</sub> "OFF"	-	1.8	-	mA
$V_{IH}$		DIN	0.7xVDD	-	-	V
$V_{IL}$		DIN	-	-	0.3xVDD	V
$I_{OH}$	DOUT	DOUT 10 GND	-	-49	-	mA
$I_{OL}$	DOUT	DOUT VDD	-	55	-	mA
$I_{OUT}$	OUT IOUT	IOUT VOUT=0.4V	-	12	-	mA
		IOUT VOUT=0.7V	-	20	-	mA
		IOUT VOUT=1.0V	-	30	-	mA
$I_{OUT\_MAX}$	OUT	IOUT VOUT=2.4V	-	60	-	mA
$I_{leak}$	R/G/B	V <sub>DS</sub> = 26V I <sub>OUT</sub> "OFF"	-	-	1	$\mu\text{A}$

4

5

VDD=5V TA=25°C

$f_{PWM}$	R/G/B PWM	R/G/B 200	VDD	-	1200	- Hz
$t_{PLH}$	6	DOUT	30pF	-	92	- ns
$t_{PHL}$		DIN	DOUT	-	100	- ns
$t_{TLH}$	DOUT 7	DOUT	30pF	-	5.5	- ns
$t_{THL}$				-	5.0	- ns
$t_r$	R/G/B 8	R/G/B 200	VDD 15pF	-	70	- ns
$t_f$				-	220	- ns

6 7 8

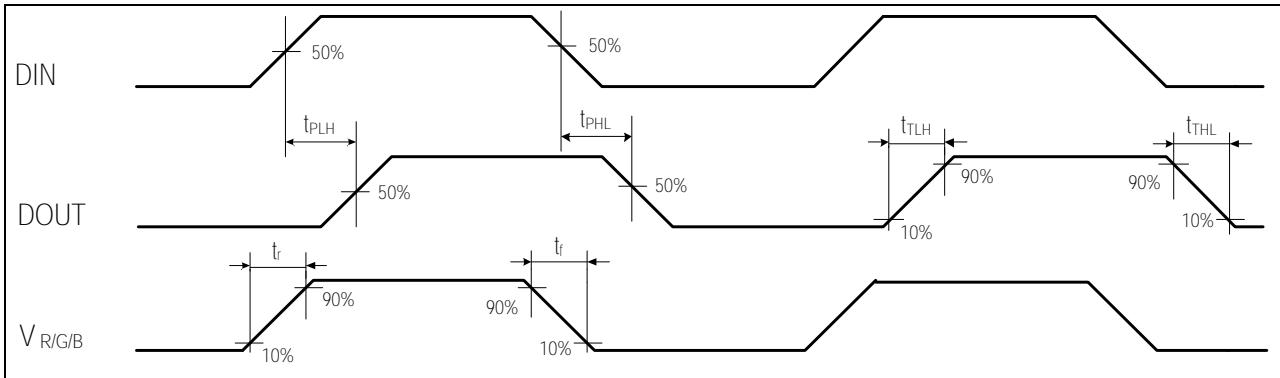


Fig. SM16712PD

"0" "1"

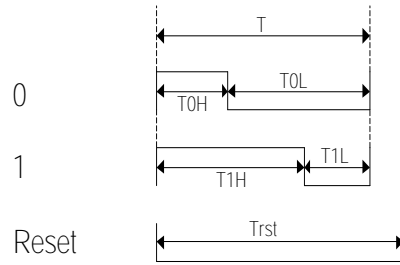


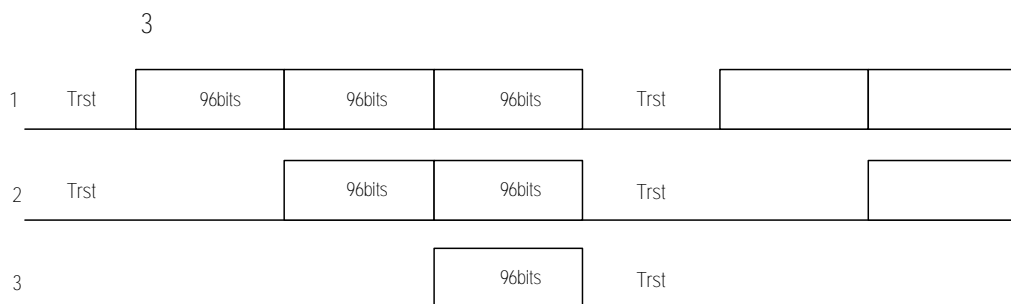
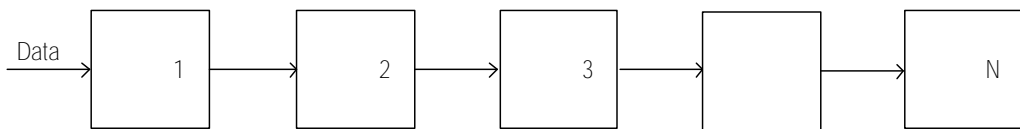
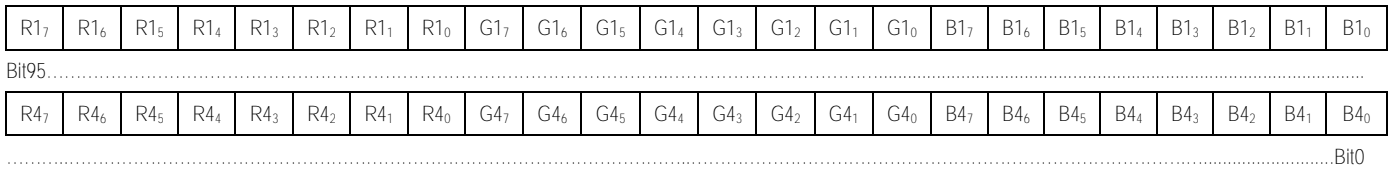
Fig. SM16712PD

T		1200	-	-	ns
T0H	0	200	300	400	ns
T0L	0	800	900	-	ns
T1H	1	800	900	1000	ns
T1L	1	200	300	-	ns
Trst	Reset	200	-	-	us



Trst+ 96bits + 96bits +.....+ N 96bits +Trst

96bits R/G/B1~R/G/B4



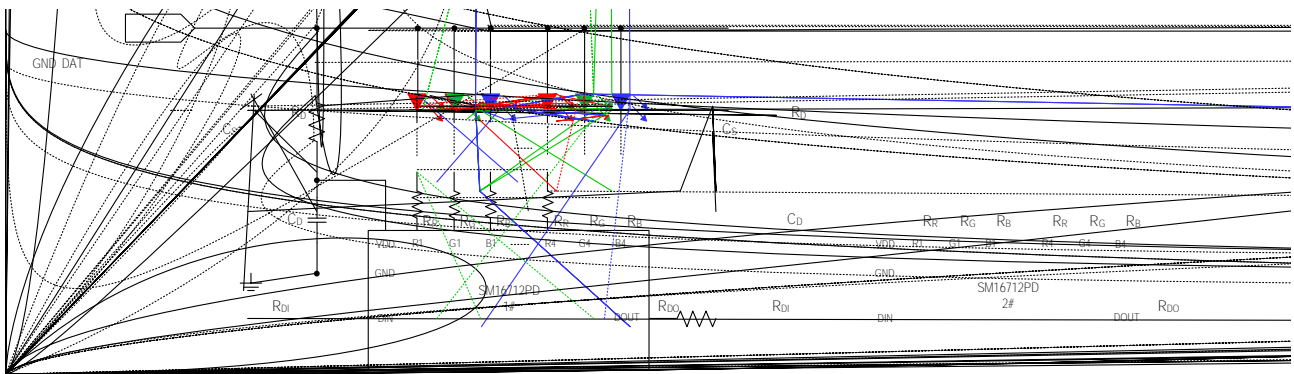


Fig. SM16712PD

SM16712PD VCC Cs R<sub>D</sub> VDD  
 C<sub>D</sub> R1~4/G1~4/B1~4 LED R<sub>R</sub> R<sub>G</sub> R<sub>B</sub> DIN R<sub>DI</sub> DAO R<sub>DO</sub>  
 1 VCC R<sub>D</sub>  

$$= \frac{VCC}{R_D} \times I_{DD} \times R_D$$
 VDD > 4V R<sub>D</sub> R<sub>D</sub>

VCC(V)	5	6	9	12	15	18	24
R <sub>D</sub> (Ω)	33	100	470	1K	1.5K	2K	3K

2 C<sub>S</sub> 0.1uF~10uF

3 C<sub>D</sub> VDD C<sub>D</sub> 100nF

4 R<sub>A</sub> DIN DIN

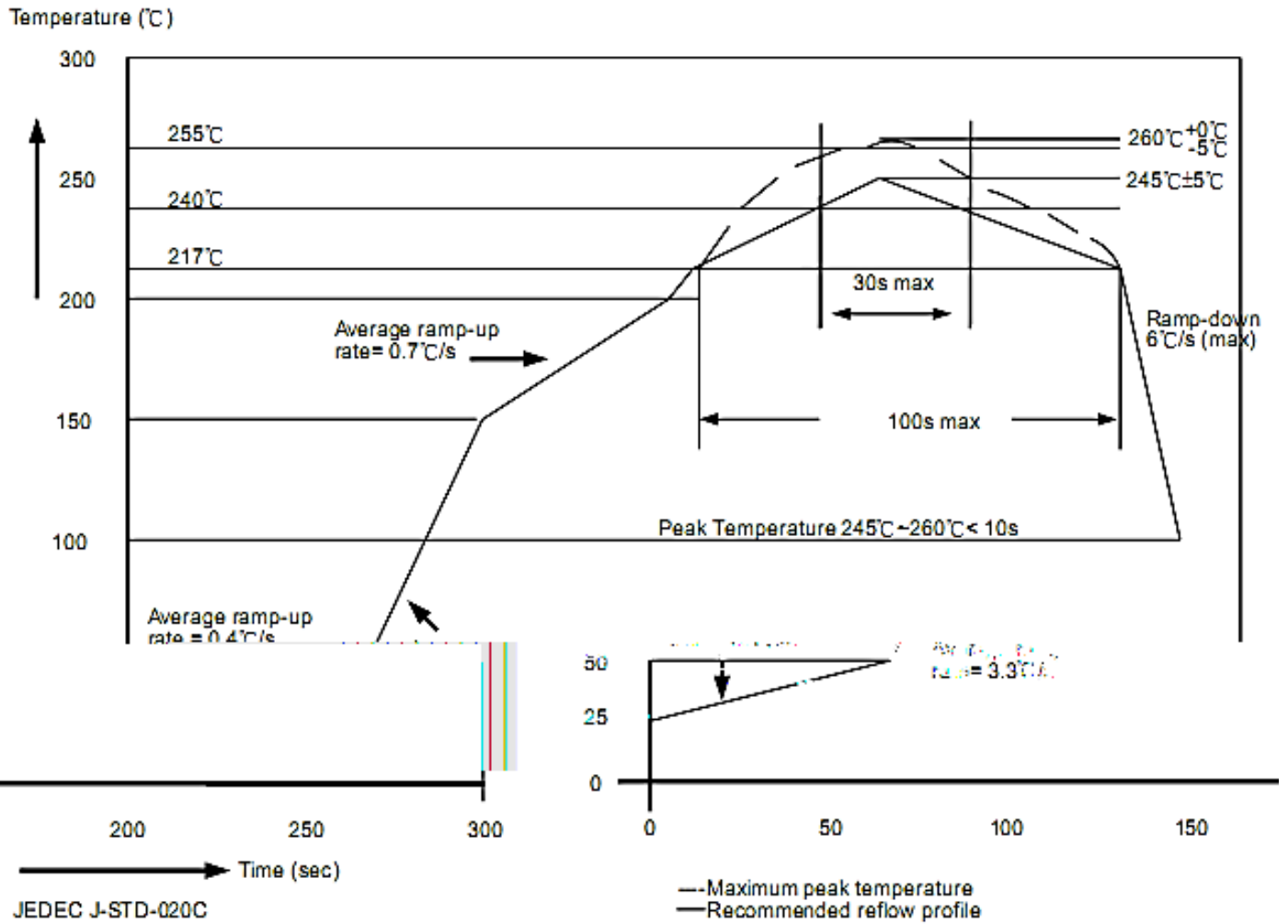
5 R<sub>R</sub> R<sub>G</sub> R<sub>B</sub> R1~4/G1~4/B1~4 R1~4/G1~4/B1~4

I<sub>OUT</sub> V<sub>LED</sub> 2.0~2.2V  
 3.0~3.2V

VCC(V)	R <sub>D</sub> (Ω)	C <sub>D</sub> (nF)	R <sub>DI</sub> (Ω)	R <sub>DO</sub> (Ω)
5	33	100		
12	1K	100	51	150
24	3K	100	100	300

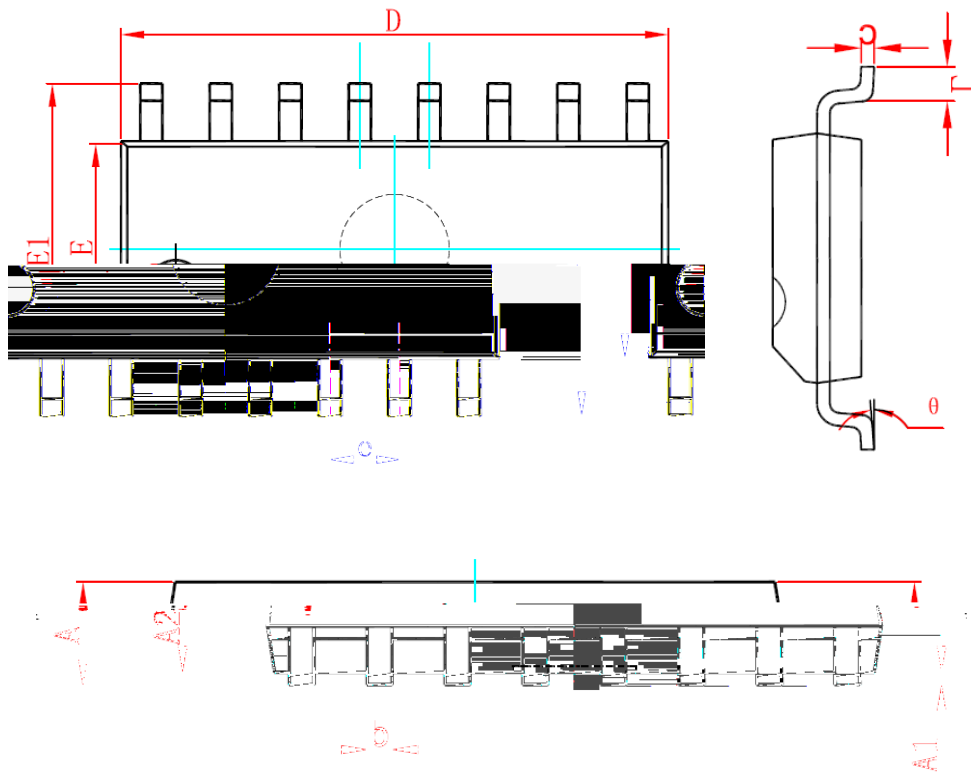
RoHs

J-STD-020



	mm <sup>3</sup> < 350	mm <sup>3</sup> 350-2000	mm <sup>3</sup> 2000
<1.6mm	260+0° C	260+0° C	260+0° C
1.6mm~2.5mm	260+0° C	250+0° C	245+0° C
2.5mm	250+0° C	245+0° C	245+0° C

SOP16



Symbol	Min(mm)	Max(mm)
A	-	1.95
A1	-	0.25
A2	1.25	-
b	0.25	0.7
c	0.1	0.35
D	9.7	10.4
E	3.7	4.2
E1	5.7	6.4
e	1.27(BSC)	
L	0.2	1.5
	0°	10°



