



JOR212D4 JOR212D8

Description

The JOR212D4 and JOR212D8 consists of a AlGaAs infrared emitting diode input stage optically coupled to a high-voltage output detector circuit. The detector consists of a high-speed photovoltaic diode array and driver circuitry to switch on/off two discrete high voltage MOSFETs.

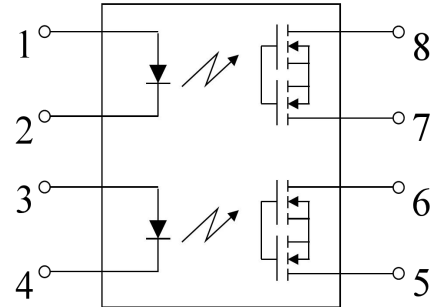
Features

- Normally opened (1-Form-A)
- Control 60V AC or DC voltage
- Switch 500 mA load
- Control low level analog signal
- High sensitivity, low conductivity resistance
- High isolation voltage 5 KV (DIP/SMD)
- Pb free and RoHS compliant

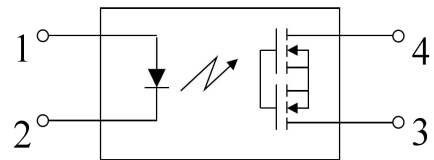
Application

- Communications products (personal computers, laptops)
- Modem/sensor
- Mobile phones/security equipment
- Measuring and testing equipment
- Plant automation equipment
- High-speed inspection machines

Block Diagram and Package

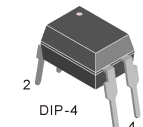
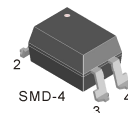


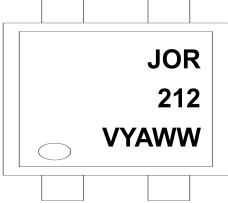
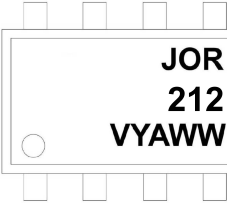

1, 3: Anode (LED)  
 2, 4: Cathode (LED)  
 5, 6, 7, 8: Drain (MOS FET)



1: Anode (LED)  
 2: Cathode (LED)  
 3, 4: Drain (MOS FET)

PACKAGE OUTLINE



ORDERING AND MARKING INFORMATION	
<b>MARKING INFORMATION</b>	
 	<p><b>JOR</b> : Company Abbr.  <b>212</b> : Part Number  <b>VYAWW</b> : LOT NO.</p>
<b>ORDERING INFORMATION</b>	<b>LABEL INFORMATION</b>
<b>JOR212DX(Y)(Z)-G</b>	
<p><b>JOR</b> – Company Abbr  <b>212</b> – Part Number  <b>D</b> – DIP or SMD Package  <b>X</b> – 4 or 8(Pin Count)  <b>Y</b> – Lead Form Option (M/S/SL/None)  <b>Z</b> – Tape and Reel Option (T1/T2)  <b>G</b> – Green</p>	

**Absolute Maximum Ratings (Ta=25°C)**

Parameter		Symbol	Rating	Unit	Parameter
Input	Input forward current	I <sub>F</sub>	50	mA	
	Input reverse voltage	V <sub>R</sub>	3	V	
	Input forward current (pulsed)	I <sub>FP</sub>	1	A	f =100 Hz Duty cycle= 0.1%
	Input power dissipation	P	75	mW	
Output	OFF-state output terminal voltage	V <sub>L</sub>	60	V	
	ON-state current	I <sub>L</sub>	0.5	A	
	Peak leakage current	I <sub>peak</sub>	1.5	A	100 ms (1 shot), V <sub>L</sub> = DC
	Output power dissipation	P <sub>out</sub>	800 500	mW	DIP8 SMD8 DIP4 SMD4
I/O Isolation voltage		V <sub>iso</sub>	5,000	VAC	DIP SMD
Limit temperature	Operating temperature	T <sub>opr</sub>	-40°C ~ + 85°C	°C	Do not freeze at low temperatures
	Storage temperature	T <sub>stg</sub>	-40°C ~ + 100°C		

Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Trigger LED current	$I_{Fon}$	$I_L=0.5A$	0.5	1.2	3	mA
	Return LED current	$I_{Foff}$	$I_L=0.5A$	0	1.0	3	mA
	Input Forward Voltage	$V_F$	$I_F=5mA$	1	1.3	1.4	V
Output	Output On-resistance	$R_{on}$	$I_F=5mA$ , $I_L=0.5A$ , Electricity less than 1 second	0	0.8	1.5	$\Omega$
	Output Leakage Current	$I_{Leak}$	$I_F=0mA$ , $V_L=60V$	-100	100	1000	nA
Transfer Characteristics	Turn-on time	$T_{on}$	$I_F=5mA$ , $I_L=0.5A$	200	890	2000	us
	Turn-off time	$T_{off}$	$I_F=5mA$ , $I_L=0.5A$	50	210	1000	us
	Input-Output Capacitance	$C_{iso}$	$f=1MHz$ , $V_B=0$		0.8	1.5	pF
	Isolation Resistance	$R_{iso}$	500V DC	1,000			$M\Omega$

Note: Recommended values for LED forward current  $I_F=5$  to 10 mA

Typical Performance Curves

Fig.1 ON-state current vs Ambient Temperature

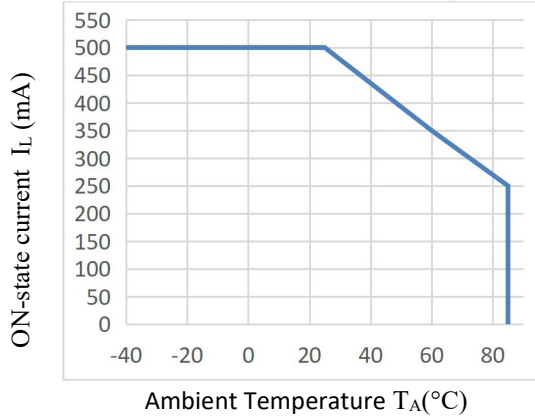


Fig.2 Output On-resistance vs. Ambient Temperature

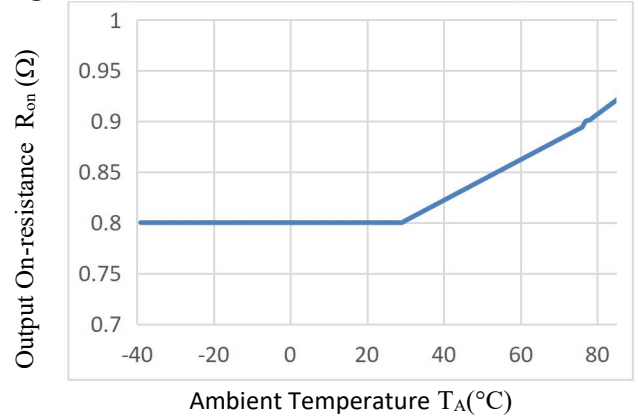


Fig.3 Turn-on time vs Ambient Temperature

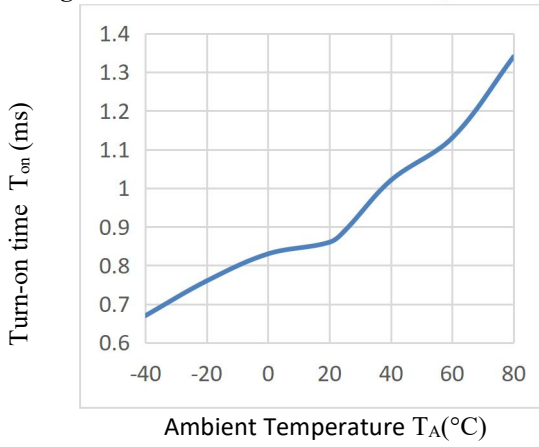


Fig.4 Turn-off time vs Ambient Temperature

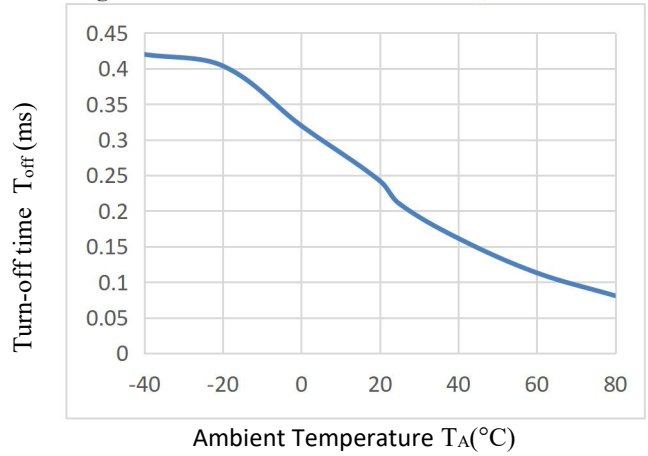


Fig.5 Trigger LED current vs Ambient Temperature

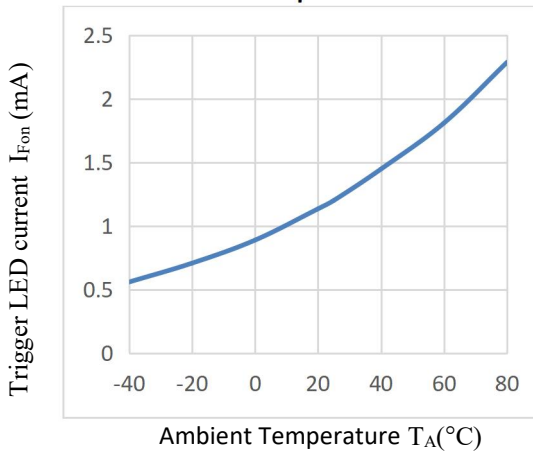


Fig.6 Return LED current vs Ambient Temperature

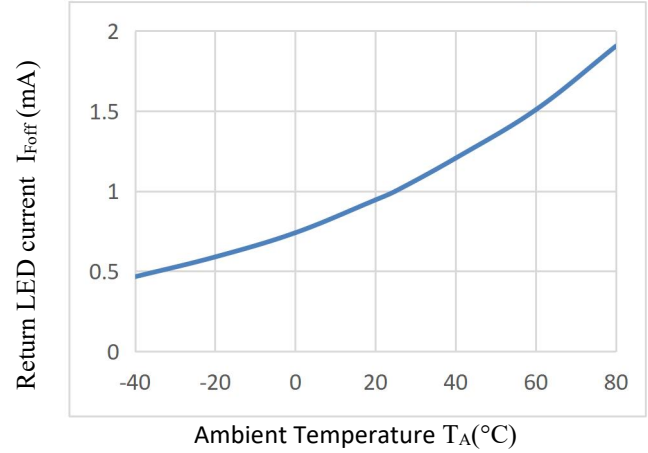


Fig.7 Forward Voltage vs Ambient Temperature

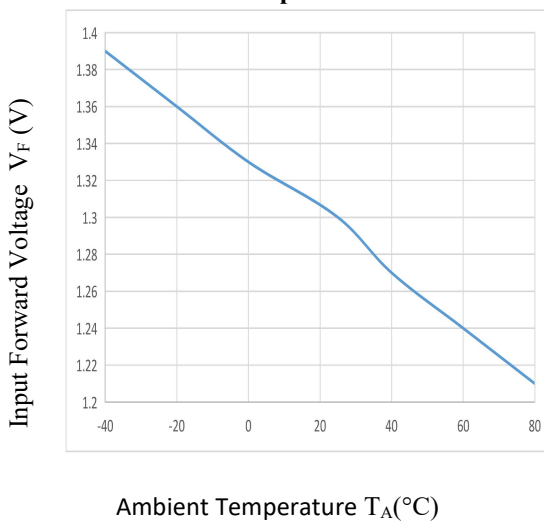


Fig.8 Output Current vs Output Voltage

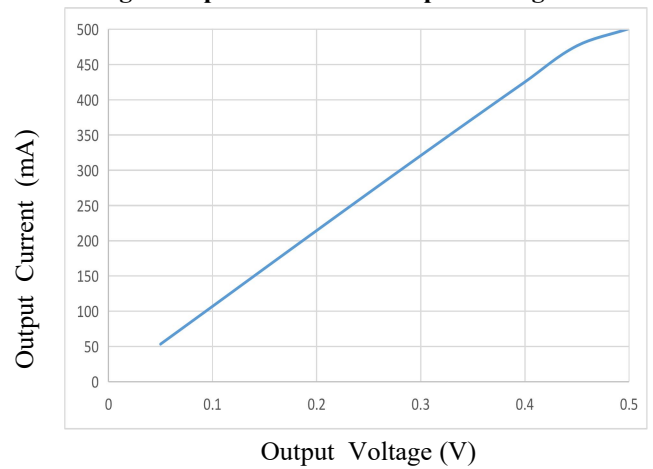


Fig.9 Output Leakage Current vs OFF-state output terminal voltage

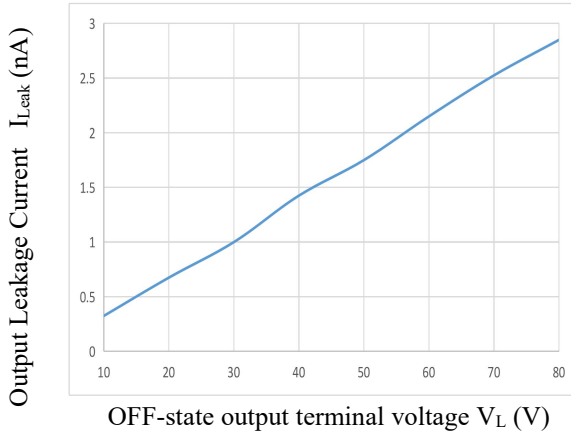


Fig.10 Turn-on time vs Input Forward Current

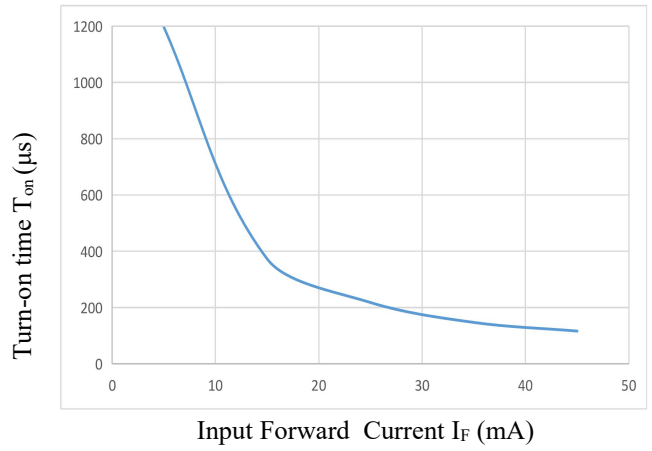
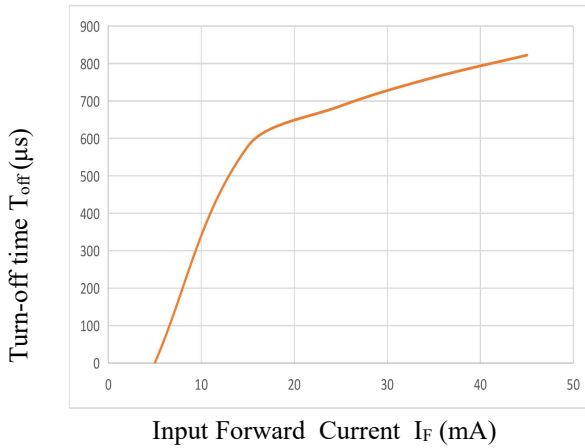
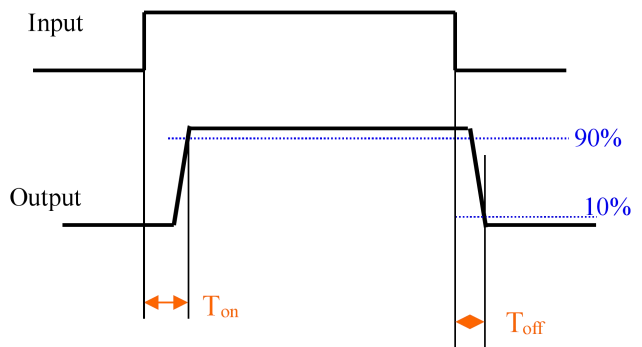


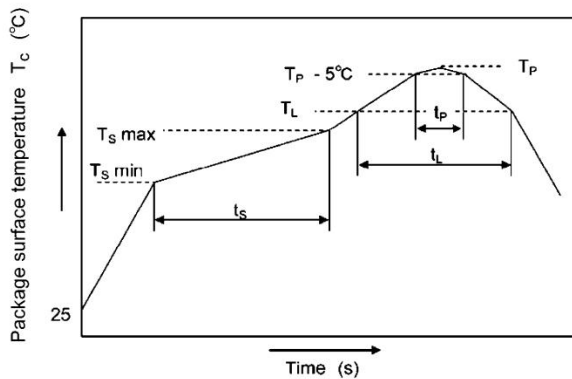
Fig.11 Turn-off time vs Input Forward Current



★ Turn-on time and Turn-off time



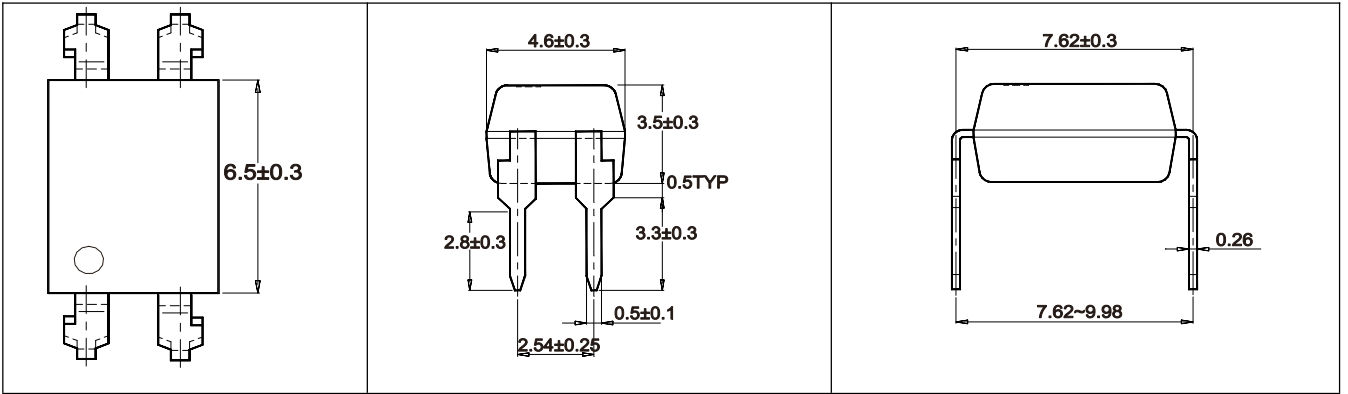
Solder Reflow Profile



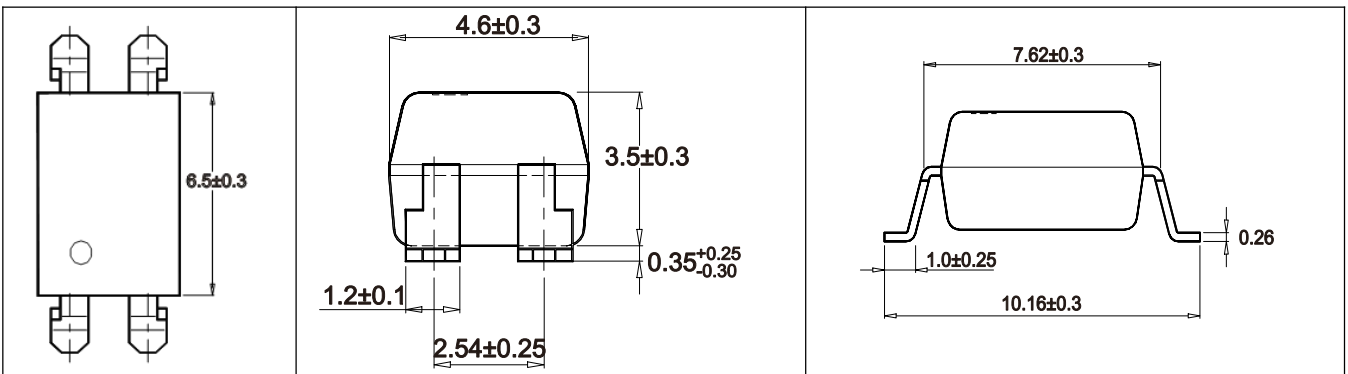
	Symbol	Min	Max	Unit
Preheat temperature	$T_s$	150	200	°C
Preheat time	$t_s$	60	120	s
Ramp-up rate ( $T_L$ to $T_p$ )			3	°C/s
Liquidus temperature	$T_L$	217		°C
Time above $T_L$	$t_L$	60	150	s
Peak temperature	$T_p$		260	°C
Time during which $T_c$ is between $(T_p - 5)$ and $T_p$	$t_p$		30	s
Ramp-down rate ( $T_p$ to $T_L$ )			6	°C/s

Outline Dimensions

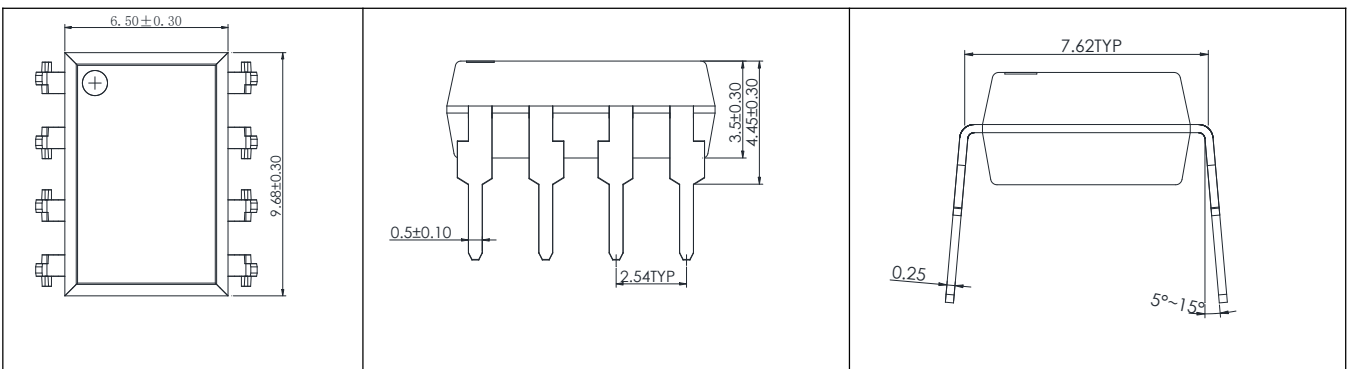
Unit: mm



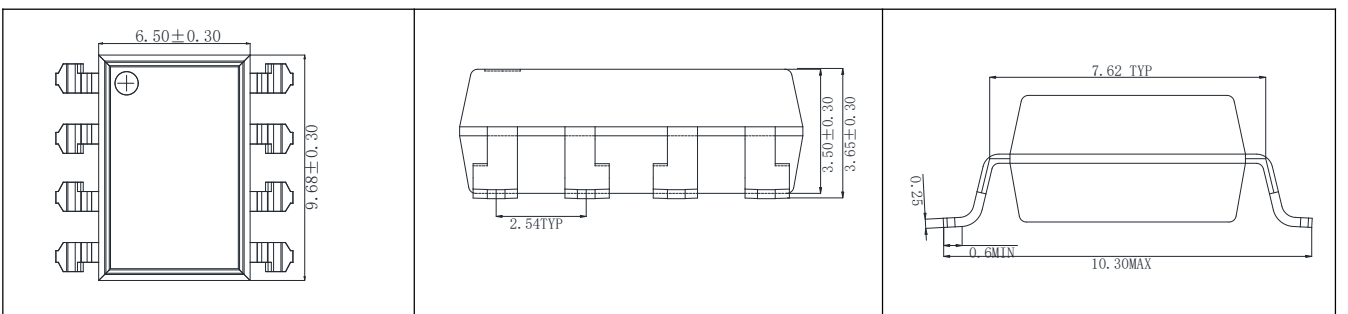
4-pin DIP



4-pin SMD



8-pin DIP



8pin SMD

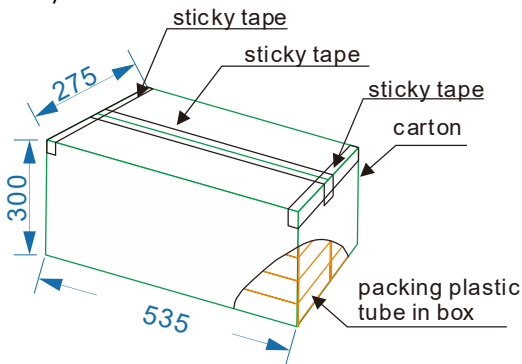
Packing

Summary table

Package Type	Packing Form	Quantity per Reel	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
SMD-8	Reel (φ330mm Blue)	1K pcs/reel	2 reels/box	10 boxes/ctn	380*380mm	340*60*340 mm	620*360*365 mm	Guard band 200mm min.
SMD-4	Reel(φ330mm Blue)	2K pcs/reel	2 reels/box	10 boxes/ctn	380*380mm	340*60*340 mm	620*360*365 mm	
DIP-8	Tube (500*12*11mm)	45 pcs/tube	50 tubes/box	10 boxes /ctn	NA	525*128*56 mm	535*275*300 mm	Endplug (blue) and Endplug (white) keep the direction
DIP-4	Tube (500*12*11mm)	100pcs /tube	50 tubes/box	10 boxes /ctn	NA	525*128*56 mm	535*275*300 mm	

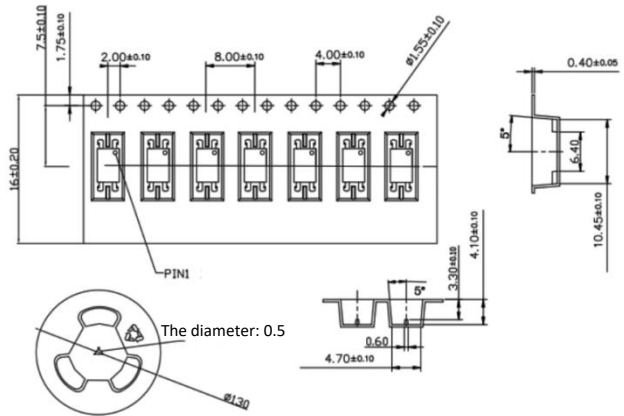
DIP-4 (tube)

- 1) Qty/ctn: 50000pcs
- 2) Inner packing:
  - i. 100pcs/tube, antistatic tube, indication of trade mark and antistatic.
  - ii. 50 tubes/box.
- 3) Schematic:



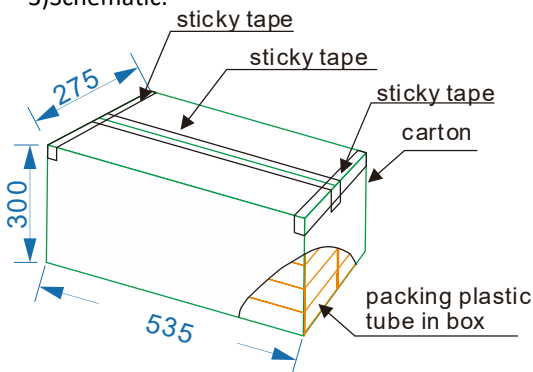
SMD-4 (Tape & Reel)

- 1) Qty/reel: 2000 pcs. Qty/ctn: 40000 pcs.
- 2) Inner packing: 2000pcs/reel.
- 3) Schematic:



DIP-8(tube)

- 1) Qty/ctn: 22500pcs.
- 2) Inner packing:
  - iii. 45pcs/tube, antistatic tube, indication of trade mark and antistatic.
  - iv. 50 tubes/box.
- 3)Schematic:



SMD-8 (Tape & Reel)

- i. Qty/reel: 1000 pcs. Qty/ctn: 20000 pcs.
- ii. Inner packing: 1000pcs/reel.
- iii. Schematic:

