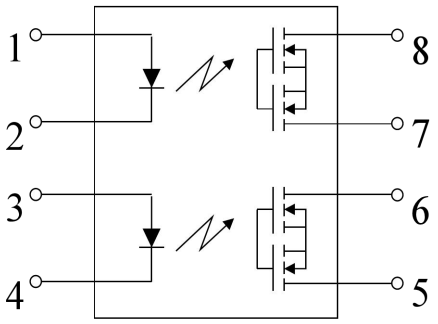
JOR213D4 JOR213D8

100V MOSFET Output Photo Relay

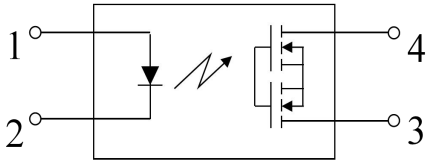
Description

The JOR213D4 and JOR213D8 Photo Relayconsist of a photo MOSFET、Photovoltage generator、infrared LED.

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)

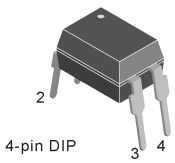
Features

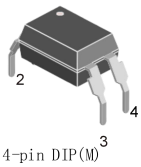
- Normally opened (SPST)
- Control 100V AC or DC voltage
- Switch 1.25A load
- Controls low-level analog sings
- High sensitivity, low conductivity resistance
- Low-level off state leakage current
- High isolation voltage 5KV
- Lead free, meet RoHS standards

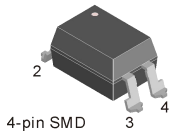
Applications

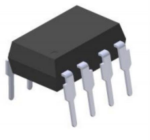
- Communications products (personal computers, laptops)
- Modem/sensor
- Mobile phones/Security equipment
- Measuring and Testing equipment
- Plant automation equipment
- High-speed inspection machines

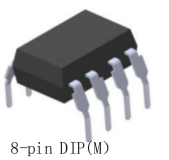
PACKAGE OUTLINE

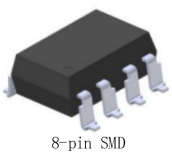






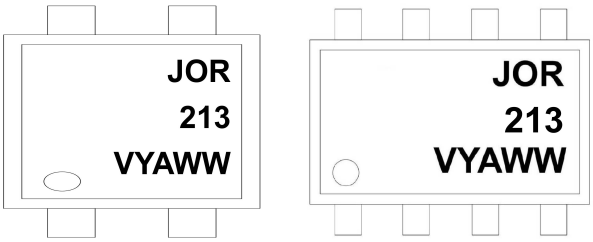






ORDERING AND MARKING INFORMATION

MARKING INFORMATION



JOR : Company Abbr.
213 : Part Number
Y : Fiscal Year
A : Manufacturing Code
WW : Work Week

ORDERING INFORMATION

JOR213DX(Y)(Z)-G

JOR – Company Abbr
213 – Part Number
D – DIP or SMD Package
X – 4 or 8(Pin Count)
Y – Lead Form Option (M/S/SL/None)
Z – Tape and Reel Option (T1/T2) G – Green

LABEL INFORMATION

Absolute Maximum Ratings (T_A=25°C)

Parameter		Symbol	Rating	Unit	Note
Input	LED Forward Current	I_F	50	mA	
	LED Reverse Voltage	V_R	3	V	
	Peak Forward Current	I_{FP}	1	A	f =100 Hz, Duty factor= 0.1%
	Power Dissipation	P	75	mW	
Output	Load Voltage(peak AC)	V_L	100	V	
	Continuous load current (peak AC)	I_L	1.25	A	
	Peak load current	I_{peak}	3.75	A	100 ms (1 shot), V_L= DC
	Power Dissipation	P_{out}	800	mW	JOR213D8
			500		JOR213D4
I/O isolation voltage		V_{iso}	5,000	Vrms	
Temperature limits	Operating Temperature	T_{opr}	–40 ~ + 85	°C	Non-condensing at low temp
	Storage Temperature	T_{stg}	–40 ~ + 100		

Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	LED Forward current	I_{Fon}	$I_{L=}$1.25A	0.5	1.9	3	mA
	LED turn off current	I_{Foff}	$I_{L=}$1.25A	-	1.6	3	mA
	LED dropout voltage	V_F	I_F=5mA	1	1.3	1.4	V
Output	On resistance	R_{on}	I_F=5mA，I_L=1.25A，Within 1 s on time	-	0.25	1.5	Ω
	Off state leakage current	I_{Leak}	I_F=0mA，V_L=100V	-	-	1000	nA
Transfer Characteristics	Turn on time	T_{on}	I_F=5mA,I_L=1.25A	0.2	5.2	8	us
	Turn off time	T_{off}	I_F=5mA,I_L=1.25A	0.05	0.62	1	us
	I/O capacitance	C_{iso}	f=1MHz，V_B=0	-	0.8	1.5	pF
	Initial I/O isolation resistance	R_{iso}	500V DC	1,000	-	-	MΩ

Note: LED forward current recommendation value: I_F=5mA to 10mA

Typical Performance Curves

Fig.1 Load current vs. Ambient temperature characteristics

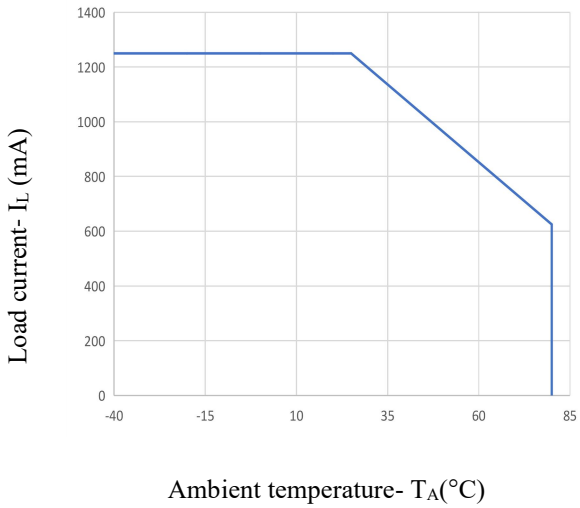


Fig.2 On resistance vs. Ambient temperature characteristics

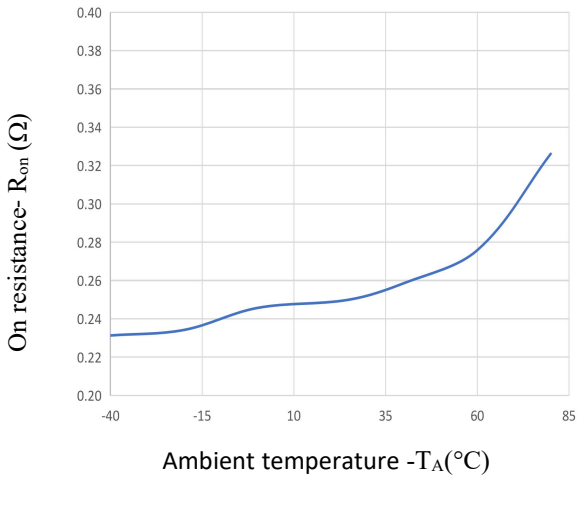


Fig.3 Turn on time vs. Ambient temperature characteristics

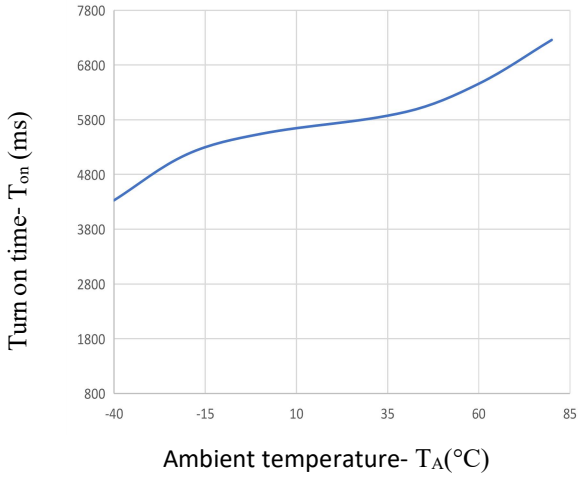


Fig.4 Turn off time vs. Ambient temperature characteristics

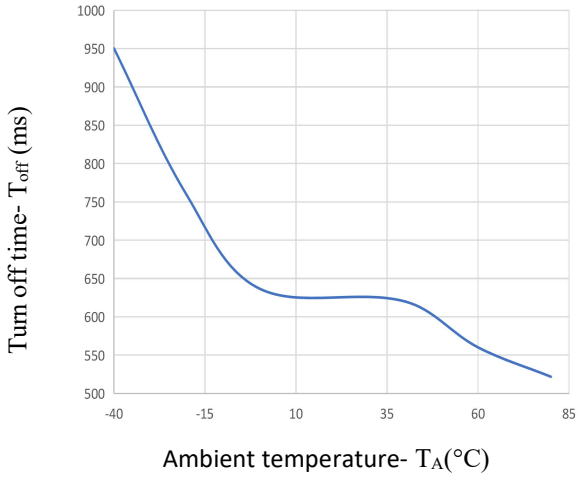


Fig.5 LED operate current vs.Ambient temperature characteristics

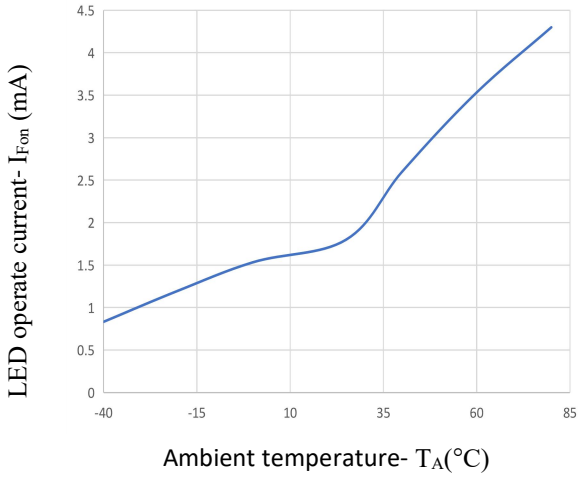


Fig.6 LED turn off current vs. Ambient temperature characteristics

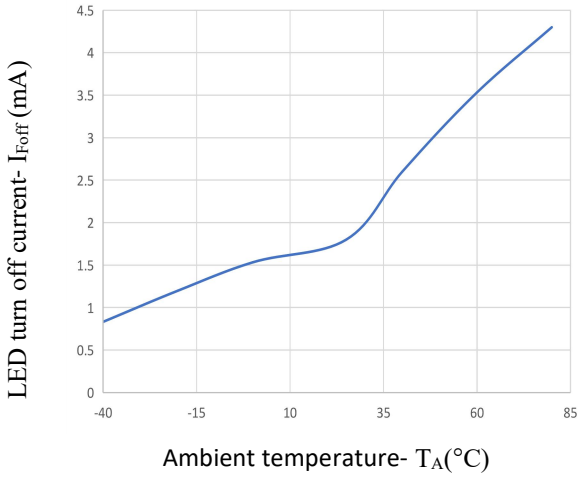


Fig.7 LED dropout voltage vs. Ambient temperature characteristics

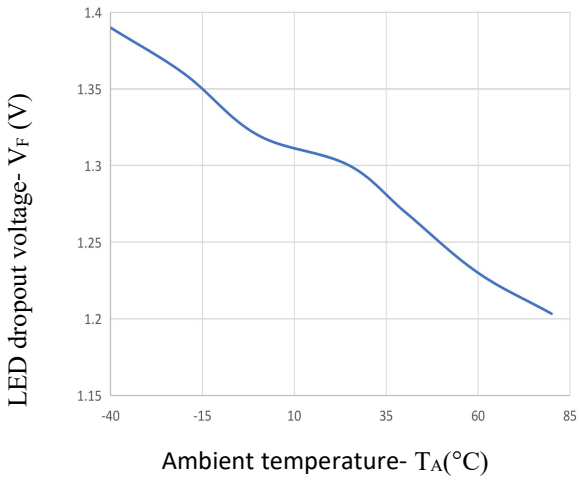


Fig.8 Output current vs Output voltage

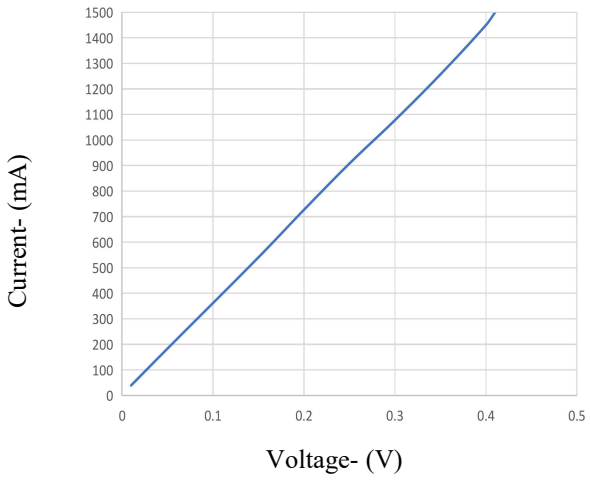


Fig.9 Off state leakage current vs Load voltage characteristics

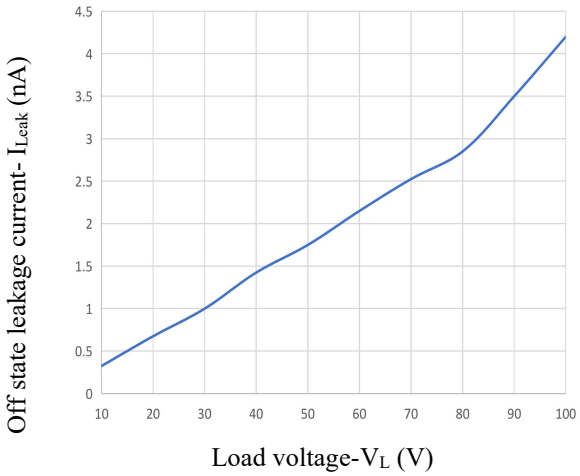


Fig.10 Turn on time vs Forward current characteristics

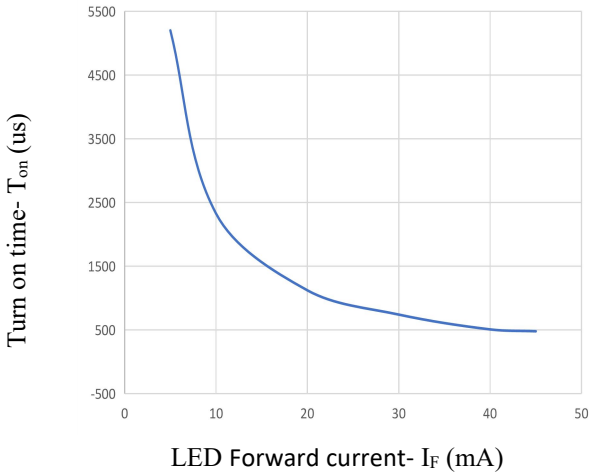
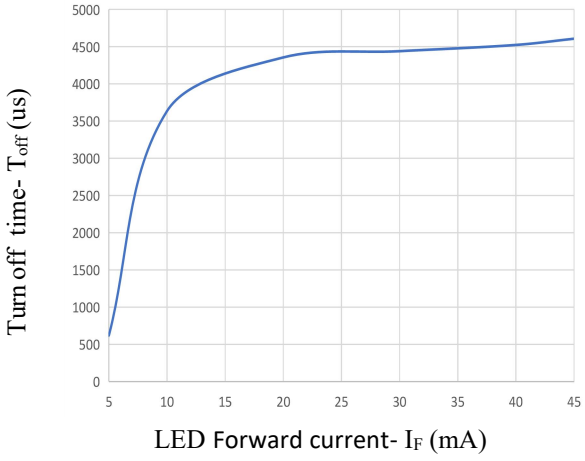
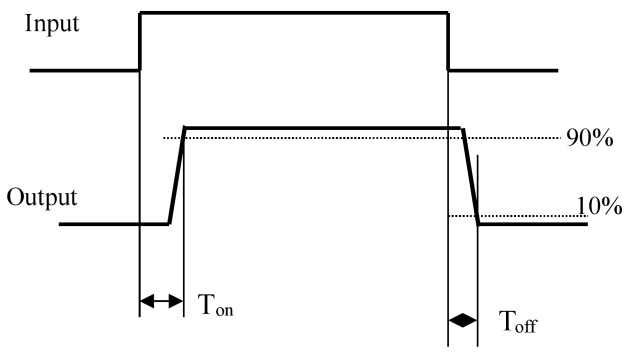


Fig.11 Turn off time vs Forward current characteristics

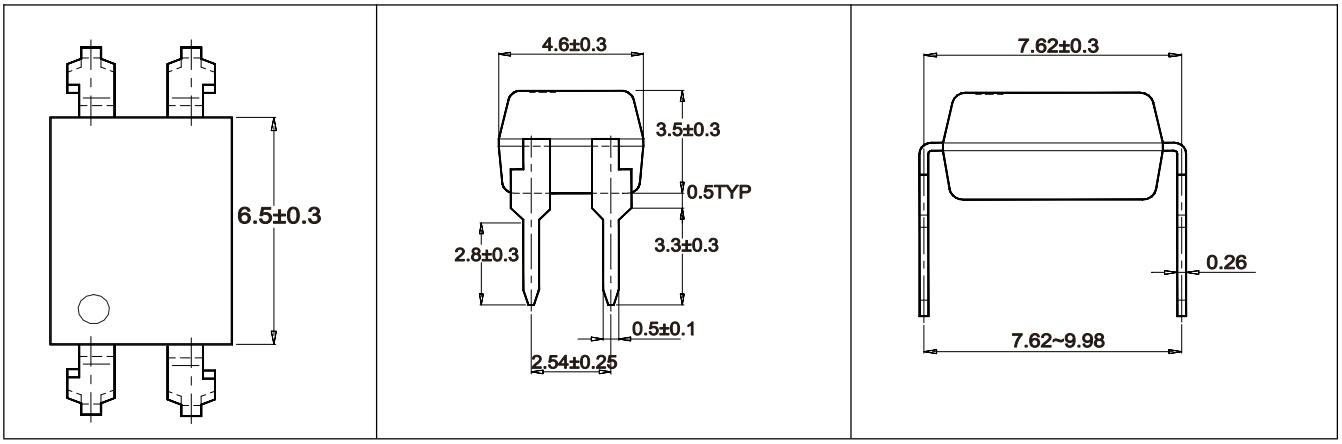


Turn on/off time

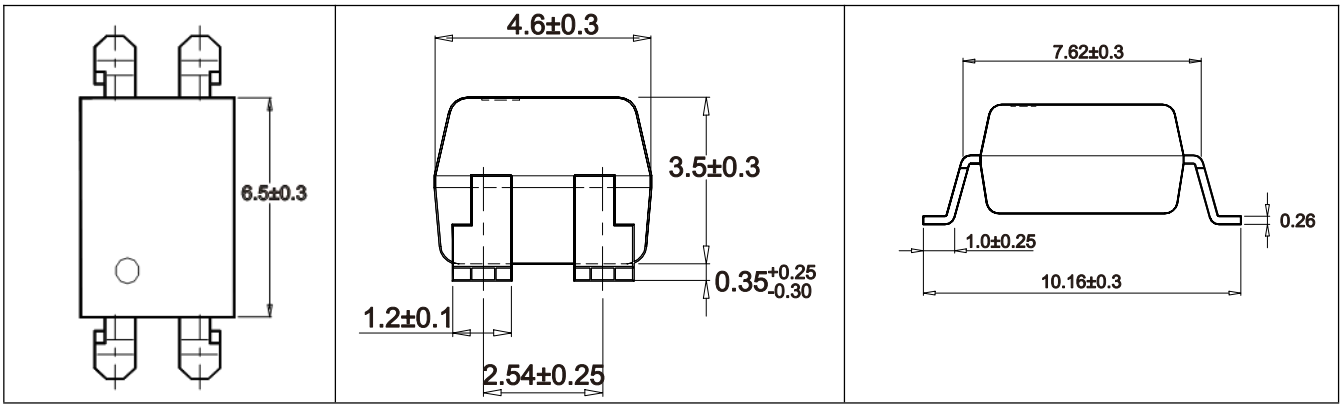


Outline Dimensions

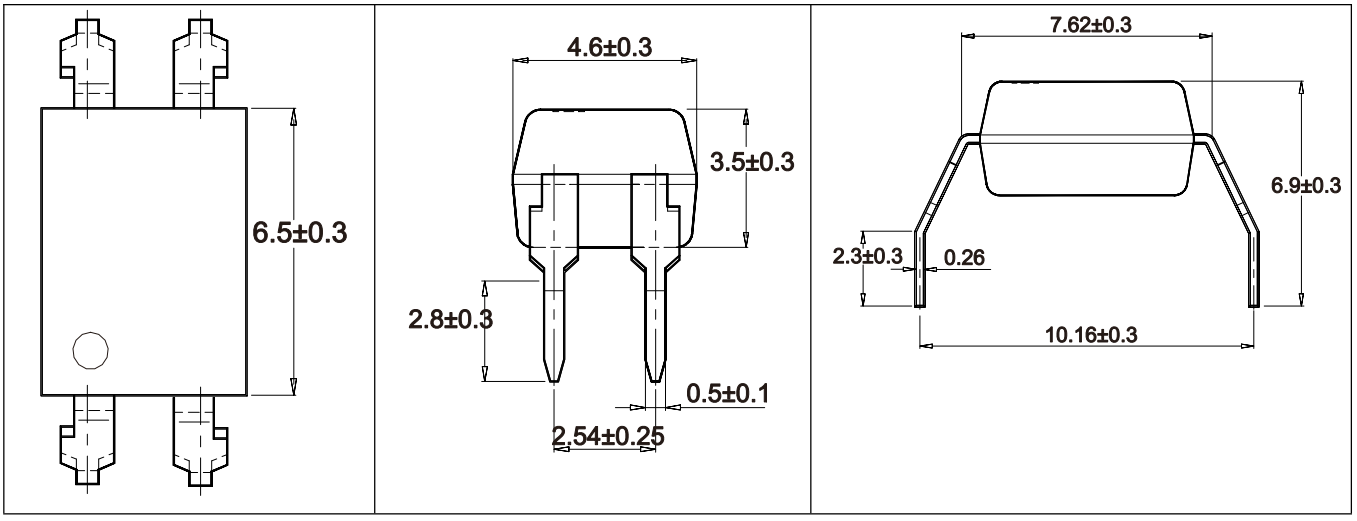
Unit: mm



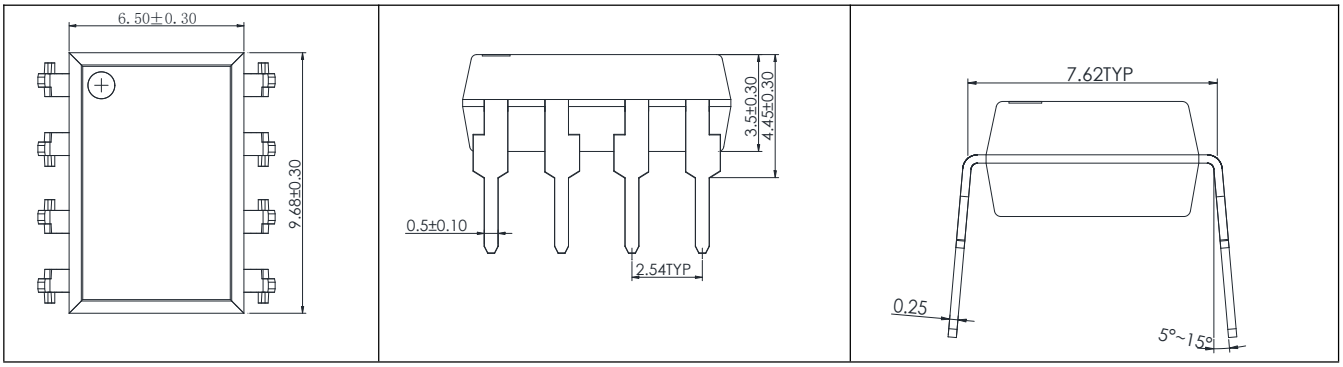
4-pin DIP



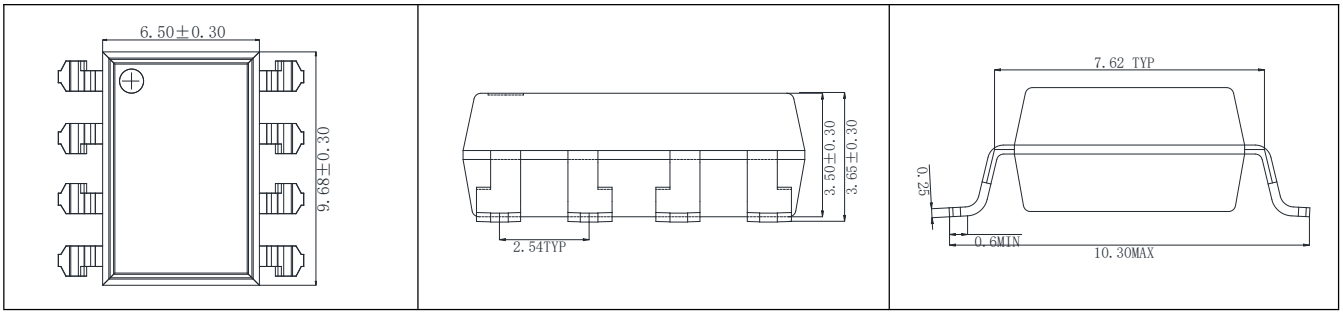
4-pin SMD



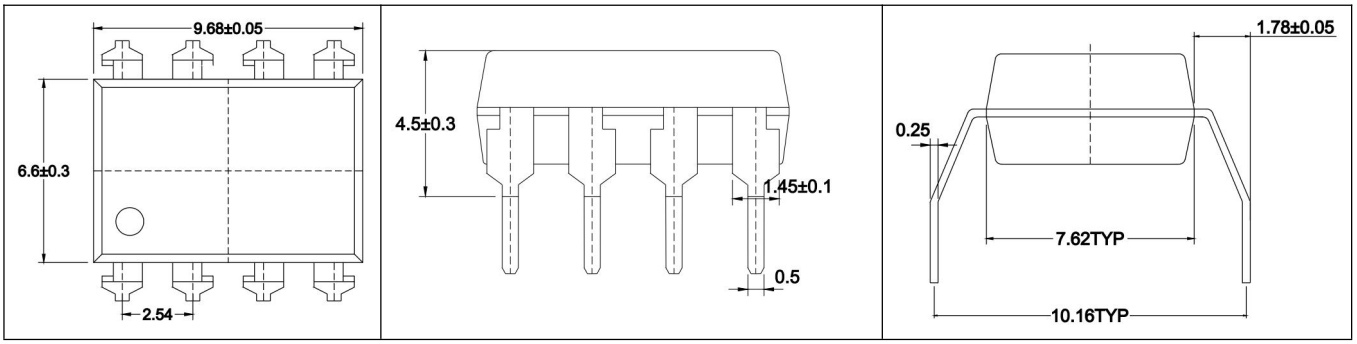
4-pin DIP (M)



8-pin DIP



8pin SMD



8-pin DIP (M)

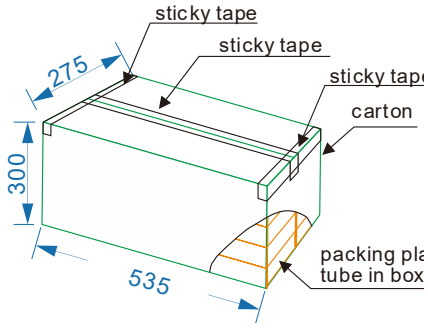
Packing

■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)	100 pcs /tube	50 tubes/box	10 boxes /ctn	NA	525*128*56 mm	535*275*300 mm	
DIP-4 (M)	Tube (500*13*11mm)	100 pcs/tube	50tubes/box	10 boxes/ctn	NA	525*136*58 mm	535*295* 310mm	
DIP-8 (M)	Tube (500*13*11mm)	45 pcs/tube	50tubes/box	10 boxes/ctn	NA	525*136*58 mm	535*295*310 mm	

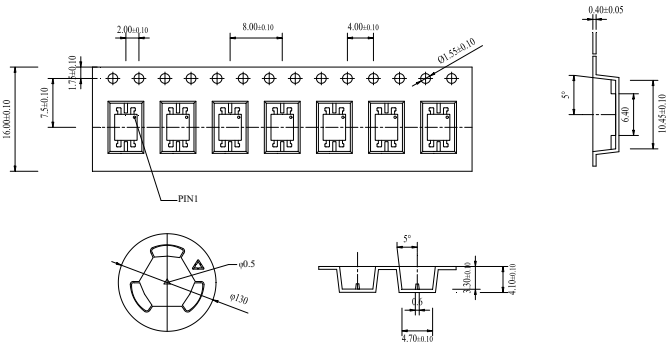
■DIP-4(tube)

1) Qty/ctn：50000pcs
2) Qty/tube：100pcs
3) Qty/box：50tubes
4) Schematic：



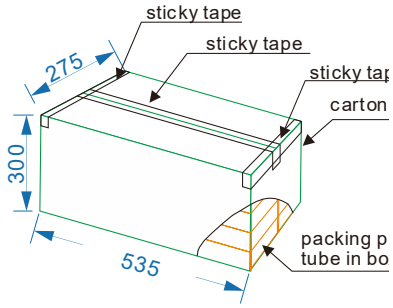
■ SMD-4(Reel)

1) Qty/ctn：40000pcs
2) Qty/Reel：2000pcs
3) Inner packing：2reels/box
4) Schematic：



■ DIP-8(tube)

1) Qty/ctn：22500pcs
2) Inner packing：
   i. 45pcs/tube
   ii. 50 tubes/box.
3) Schematic：



■ SMD-8(Reel)

1) Qty/ctn：20000pcs
2) Qty/Reel：1000pcs
3) Inner packing：2reels/box
4) Schematic：