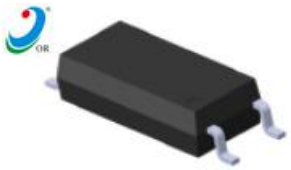
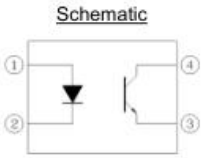
1. Features





Pin Configuration
1. Anode
2. Cathode
3. Emitter
4. Collector

(1) Current transfer ratio
(CTR: 50~600% at IF = 5mA, VCE = 5V)
(CTR: 63~320% at IF = 10mA, VCE = 5V)
(2) High input-output isolation voltage (Viso = 5,000Vrms)
(3) High collector-emitter voltage (VCEO = 70V)
(4) Temperature range -55 ℃ to 110 ℃
(5) Creepage distance > 8mm
(6) Employs double transfer mold technology
(7) Long Mini-flat package : 2.3mm profile :OR-10XX series

2. Description

The OR-10XX series devices consist of an infrared emitting diode, optically coupled to a phototransistor detector.They are packaged in a 4-pin SOP package.

3.Applications

(1) Programmable controllers
(2) System appliances, measuring instruments
(3) Telecommunication equipments
(4) Home appliances, such as fan heaters, etc.
(5) Signal transmission between circuits of different potentials and impedances

4. Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Rated Value	Unit
Input	Forward Current	I_F	60	mA
	Junction Temperature	T_J	125	℃
	Reverse Voltage	V_R	6	V
	Consume Power	P	100	mW
Output	Collector and emitter Voltage	V_{CEO}	80	V
	Emitter and collector Voltage	V_{ECO}	7	
	Collector Current	I_C	50	mA
	Consume Power	P_C	150	mW
Total Consume Power		P_{tot}	250	mW
*1 Insulation Voltage		V_{iso}	5000	Vrms
Working Temperature		Topr	-55 to + 110	℃
Deposit Temperature		T_{stg}	-55 to + 125	
*2 Soldering Temperature		T_{sol}	260	

Notes

*1 AC for 1 minute, R.H.= 40 ~ 60% R.H. In this test, pins 1, 2 are shorted together, and pins 3, 4 are shorted together.

* 2 For 10 seconds

5. Electrical Optical Characteristics at Ta=25°C

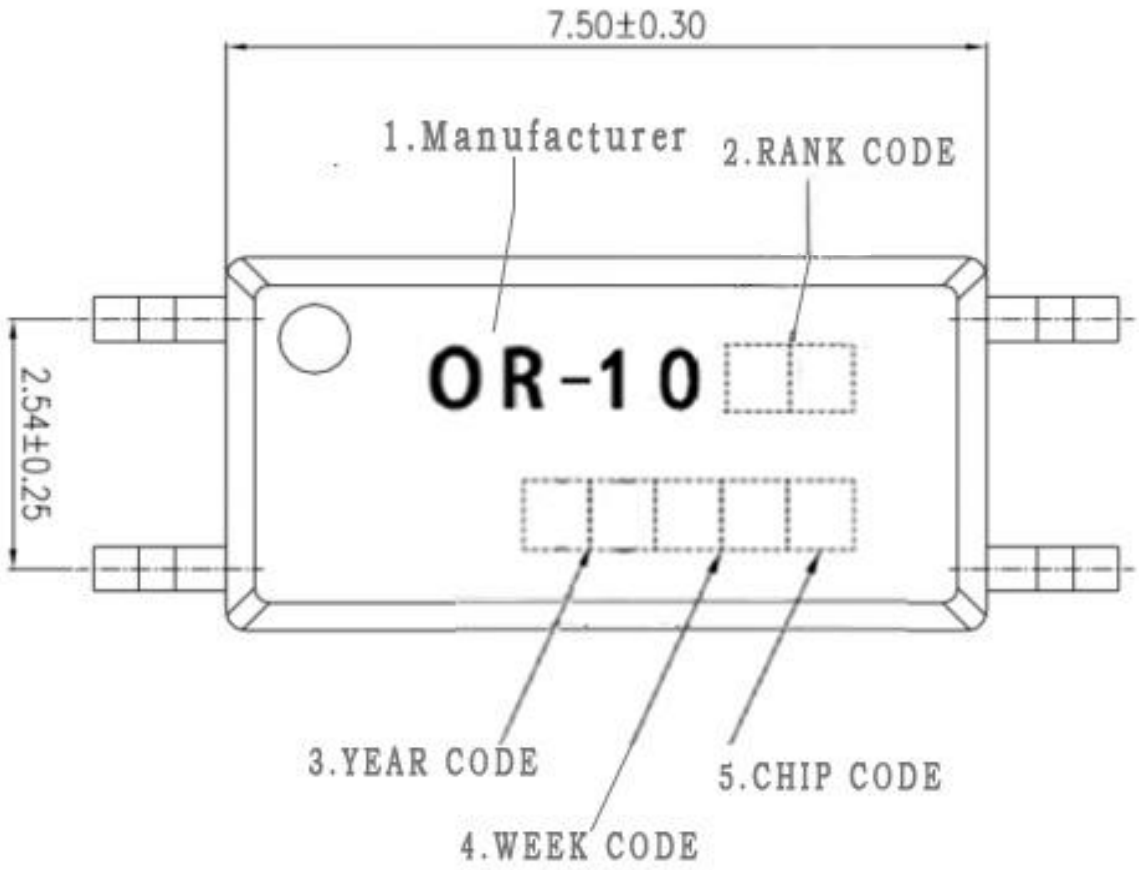
Parameter		Symbol	Condition	Min	Typ.*	Max	Unit
Input	Forward Current	V_F	I_F=50mA	---	1.25	1.6	V
	Reverse Voltage	I_R	V_R=4V	---	---	10	μA
	Collector capacitance	C_t	V=0, f=1MHz	---	50	---	pF
Output	Collector to emitter Current	I_{CEO}	V_{CE}=20V, I_F=0mA	---	10	100	nA
	Collector and Emitter attenuation Voltage	BV_{CEO}	I_C=1mA I_F=0mA	80	---	---	V
	Emitter and Collector attenuation Voltage	BV_{ECO}	I_E=0.1mA I_F=0mA	7	---	---	V
Transforming Characteristics	*1 Current conversion ratio	CTR	IF=5mA VCE=5V	50	---	600	%
	Collector Current	I_C		2.5	---	30	mA
	Collector and Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=10mA I_C= 1mA	---	---	0.3	V
	Insulation Impedance	R_{iso}	DC500V 40~60%R.H.	10^{12}	---	---	Ω
	Floating Capacitance	C_f	V=0, f=1MHz	---	0.3	---	pF
	Response Time	t_r	V_{CC}=5V, I_C=2mA R_L=100Ω	---	3	18	μs
	Descend Time	t_f		---	4.7	18	μs

*1 Current Conversion Ratio = I_C / I_F × 100%, CTR Tolerance:±3%.

6. Rank Table of Current Transfer Ratio

CTR Rank	Min.	Typ.	Max.	Unit	Condition
OR-1000	50	—	600	%	IF=5mA, V_{CE}=5V, Ta=25℃
OR-1001	100	—	160		
OR-1004	100	—	200		
OR-1005	50	—	150		
OR-1006	100	—	300		
OR-1007	80	—	160		
OR-1008	130	—	260		
OR-1009	200	—	400		
OR-1010	150	—	300		
OR-1019	250	—	500		
OR-1020	300	—	450		
OR-1002	22	—	—	%	IF=1mA, V_{CE}=5V, Ta=25℃
OR-1003	34	—	—		
OR-1014	56	—	—		
OR-1015	63	—	125		
OR-1018	100	—	200		
OR-1002	63	—	125	%	IF=10mA, V_{CE}=5V, Ta=25℃
OR-1003	100	—	200		
OR-1014	160	—	320		

7.Naming Rule



注：

(1)OR denotes Shenzhen Orient Tech Ltd . Co ., Ltd.

(2) ⬚⬚ denotes Rank Code.

(3) ⬚⬚ denotes Year code.

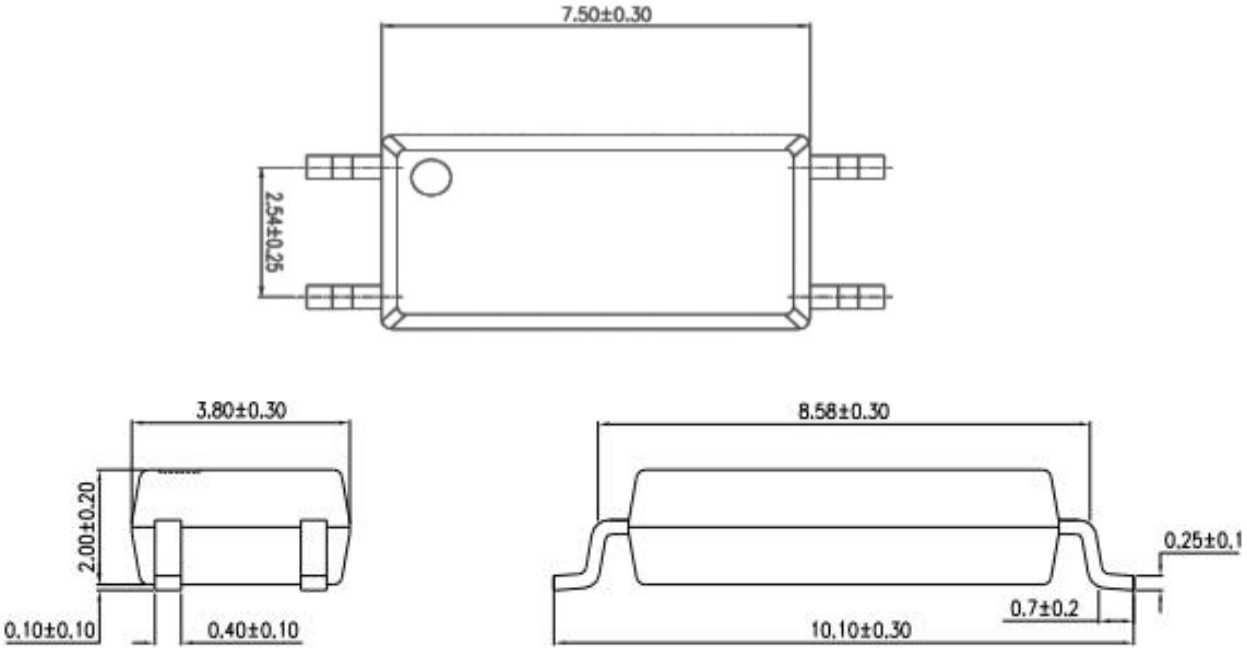
(4) ⬚⬚ denotes Week code.

(5) ⬚ denotes Chip Code

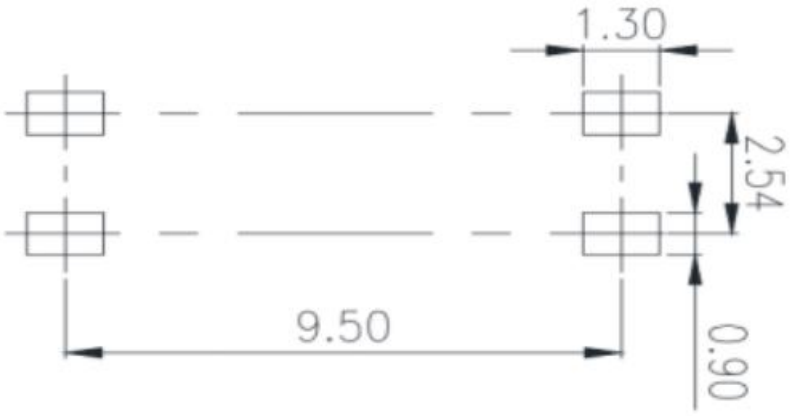
(6) OR-10 denotes Device Part Number.

(7) Unit:mm

8. Package Dimension



9.RRECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)



Unit:mm