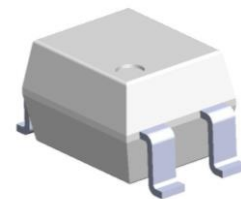


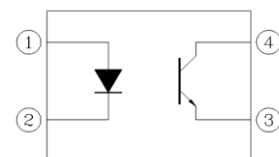
4 PIN DIP VERY HIGH ISOLATION VOLTAGE PHOTOCOUPLER CNY64S Series

Features:

- Compliance Halogens Free
(Br < 900 ppm, Cl < 900 ppm, Br+Cl < 1500 ppm)
- High Voltage , $BV_{CEO}=80V$ (min.)
- Operating temperature up to +85°C
- High isolation voltage between input and output
 $V_{IOTM} = 8200 V$ perk for CNY64
 $V_{IOTM} = 10000 V$ perk for CNY64-V
- Rated recurring peak voltage (repetitive), $V_{IORM} = 2200 V$
- Creepage current resistance according to VDE 0303/IEC 60112
comparative tracking index: $CTI \geq 200$
- Thickness through insulation $\geq 3mm$
- Pb free and RoHS compliant.
- CUL approved (No. E214129)
- VDE approved (No. 40027351)
- FIMKO approved (No. 25464)



Schematic



Pin Configuration

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

Description

The CNY64S series contains an infrared emitting diode optically coupled to a phototransistor.

These devices are packaged in an 4-pin SMD package and providing a distance between input and output for highest safety requirement of >3mm.

Applications

- Switch mode power supply
- Line receiver
- Computer peripheral interface
- Microprocessor system interface
- Circuits for safe protective separation against electrical shock according to safety class II (reinforced isolation):
 - for appl. class I - IV at mains voltage $\leq 300 V$
 - for appl. class I - IV at mains voltage $\leq 600 V$
 - for appl. class I - III at mains voltage $\leq 1000 V$
 according to DIN EN 60747-5-5.

Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I _F	75	mA
	Peak forward current (<10μs)	I _{FM}	1.5	A
	Reverse voltage	V _R	5	V
	Power dissipation	P _D	120	mW
Output	Collector power dissipation	P _C	150	mW
	Collector current	I _C	50	mA
	Collector-Emitter voltage	V _{CEO}	80	V
	Emitter-Collector voltage	V _{ECO}	7	V
Total Power Dissipation		P _{TOT}	250	mW
Isolation Voltage*1		V _{ISO}	8200	V rms
Operating Temperature		T _{OPR}	-55~+85	°C
Storage Temperature		T _{STG}	-55~+100	°C
Soldering Temperature*2		T _{SOL}	260	°C

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 2mm from case, <10 seconds.

Electro-Optical Characteristics (Ta=25°C unless specified otherwise)

Input

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward voltage	V_F	-	1.6	2.0	V	$I_F = 50\text{mA}$
Reverse current	I_R	-	-	10	μA	$V_R = 5\text{V}$
Input capacitance	C_{in}	-	-	100	pF	$V = 0, f = 1\text{MHz}$

Output

Parameter	Symbol	Min	Typ.	Max.	Unit	Condition
Collector-Emitter dark current	I_{CEO}	-	-	200	nA	$V_{CE} = 20\text{V}, I_F = 0\text{mA}$
Collector-Emitter breakdown voltage	BV_{CEO}	80	-	-	V	$I_C = 1\text{mA}$
Emitter-Collector breakdown voltage	BV_{ECO}	7	-	-	V	$I_E = 0.1\text{mA}$
Collector-Emitter capacitance	C_{CE}	-	-	50	pF	$V_{CE} = 0\text{V}, f = 1\text{MHz}$

Transfer Characteristics

Parameter	Symbol	Min	Typ.	Max.	Unit	Condition
Current Transfer ratio	CNY64	50	-	300	%	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$
	CNY64A	63	-	125		
	CNY64B	100	-	200		
Collector-Emitter saturation voltage	$V_{CE(sat)}$	-	-	0.3	V	$I_F = 10\text{mA}, I_C = 1\text{mA}$
Isolation resistance	R_{IO}	10^{11}	-	-	Ω	$V_{IO} = 500\text{Vdc},$
Coupling capacitance	C_{IO}	-	0.3	-	pF	$f = 1\text{MHz}$
Turn-on time	T_{on}	-	6	18	μs	$V_{CC} = 5\text{V},$ $I_C = 5\text{mA}, R_L = 100\Omega$
Turn-off time	T_{off}	-	7	18		
Rise time	t_r	-	3	18		
Fall time	t_f	-	5	18		

* Typical values at $T_a = 25^\circ\text{C}$

Typical Electro-Optical Characteristics Curves

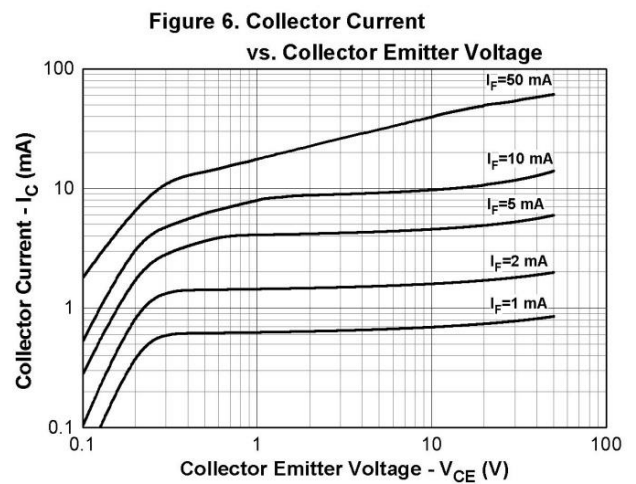
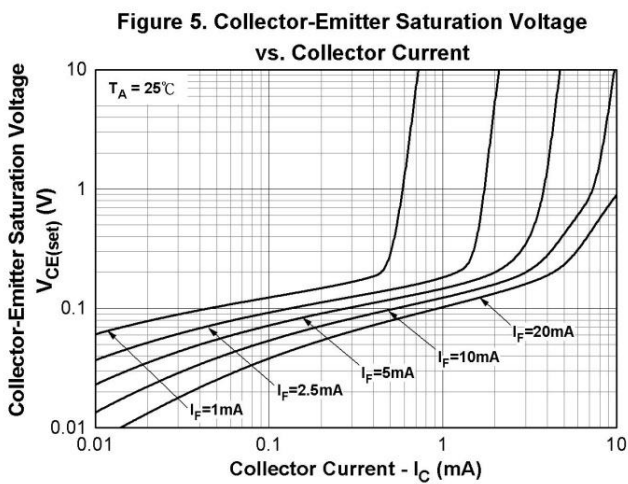
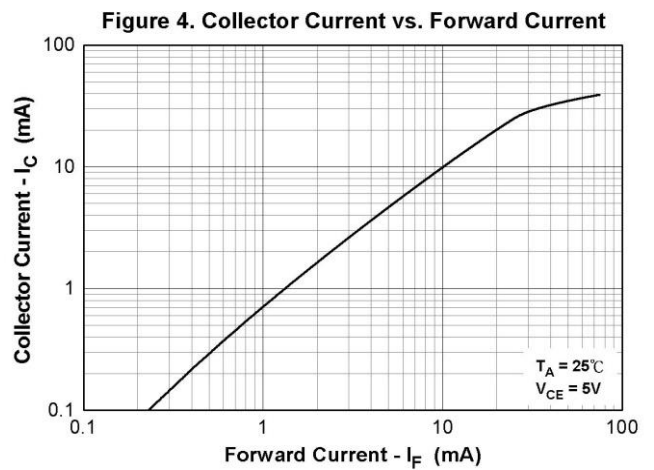
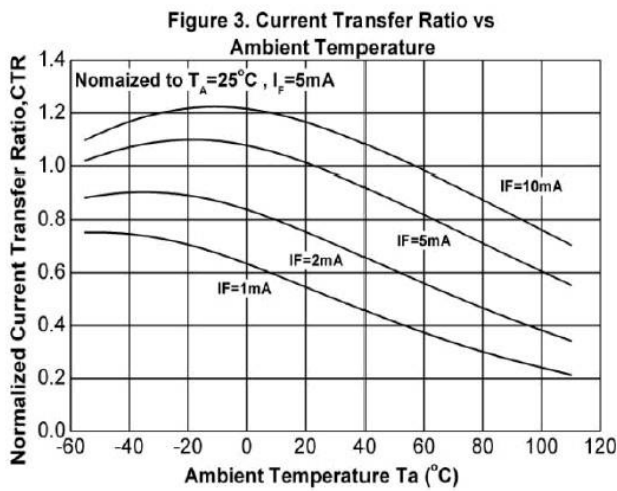
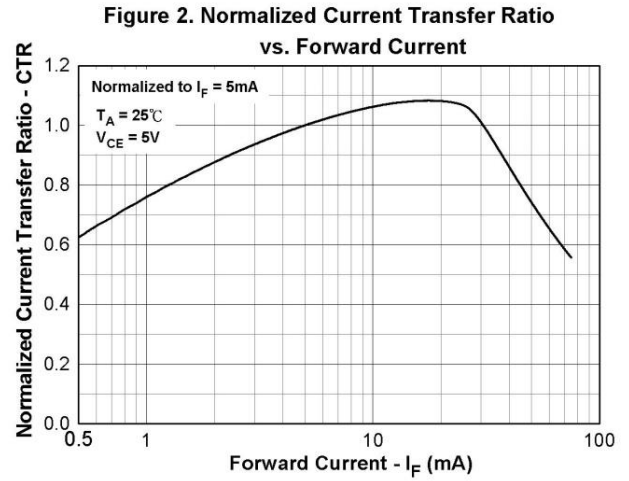
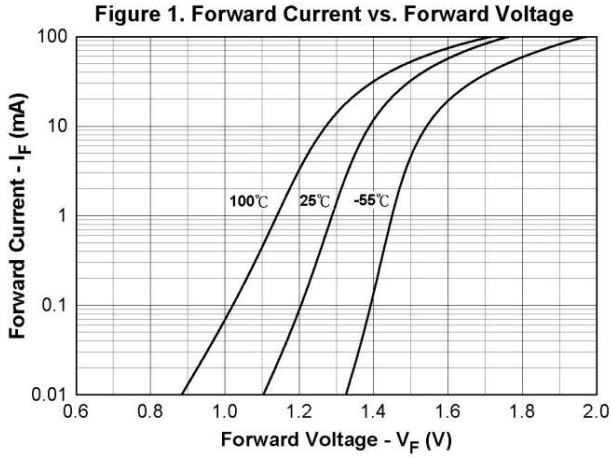


Figure.7 Collector Dark Current vs. Ambient Temperature

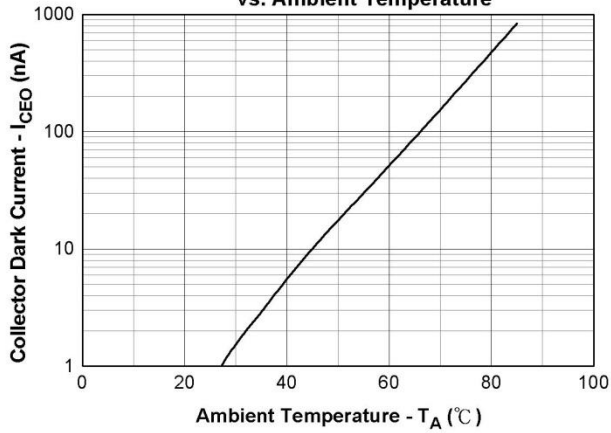


Figure 8. Turn on/off Time vs. Forward Current

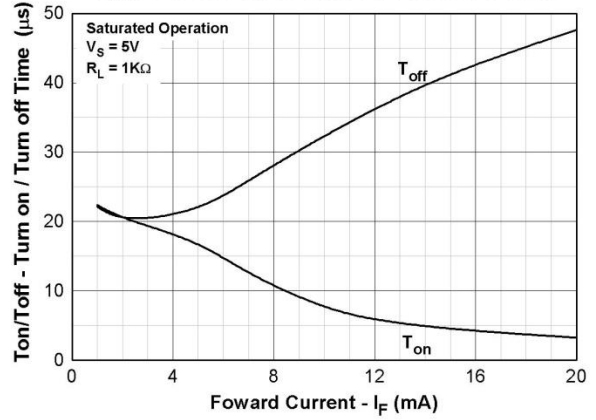


Figure 9. Turn on/off Time vs. Collector Current

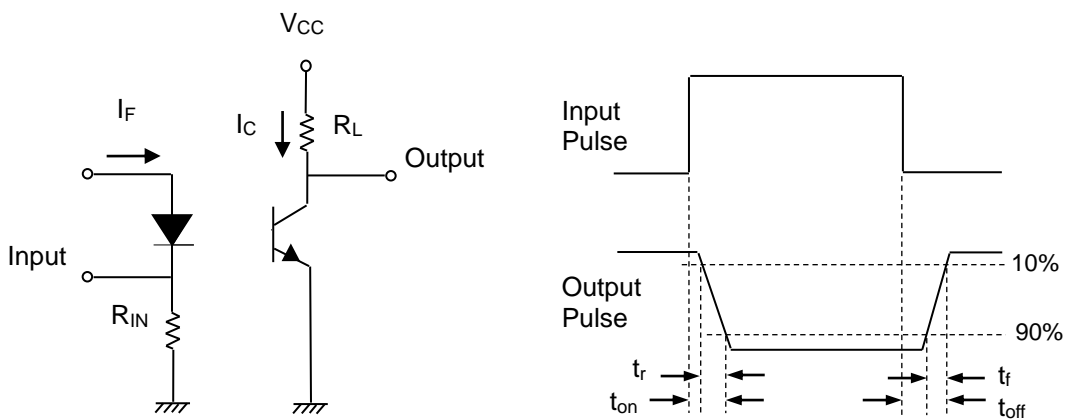
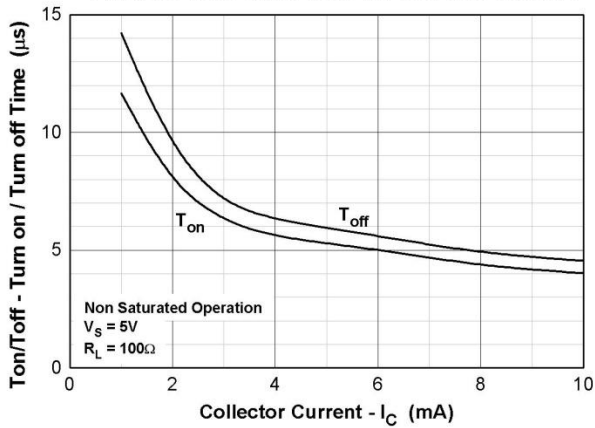


Figure 10. Switching Time Test Circuit & Waveforms

Order Information

Part Number

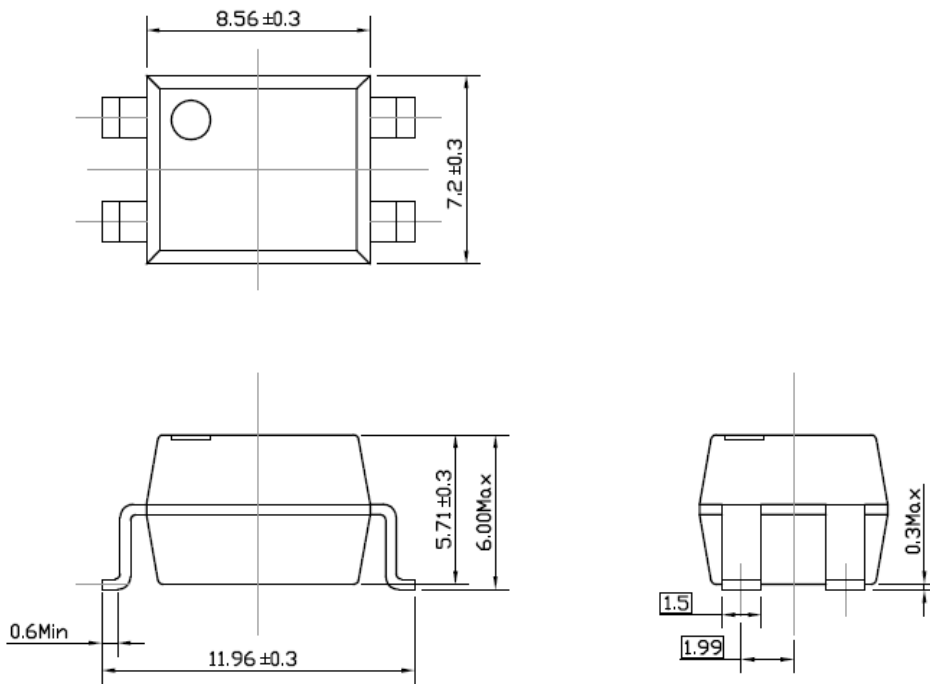
CNY64SX-V

Note

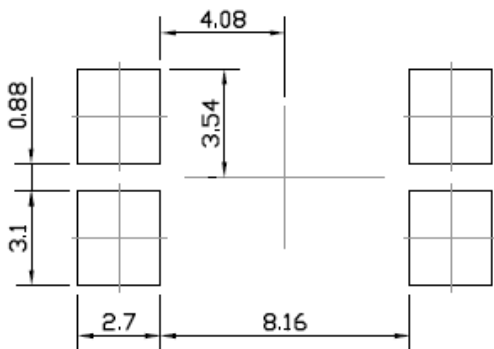
- X = CTR rank option (A, B or none)
- V = VDE safety (optional)

Option	Description	Packing quantity
CNY64S	Standard	60 units per tube
CNY64S-V	Standard + VDE	60 units per tube
CNY64S(TA)	Standard	500 units per tube

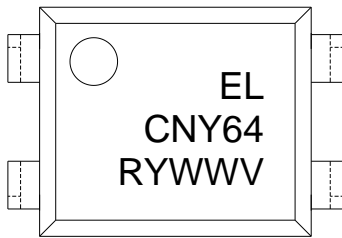
Package Drawings (Dimensions in mm)



Recommended pad layout for surface mount leadform



Device Marking

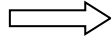
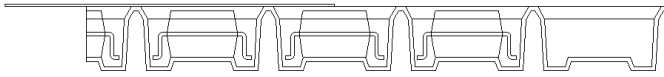
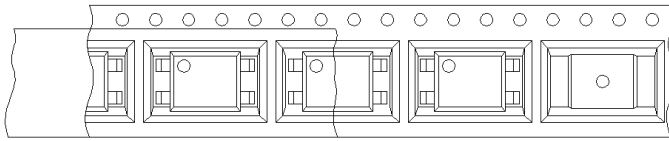


Notes

EL	denotes Everlight
CNY64	denotes Part no.
R	denotes CTR rank (A or B)
Y	denotes 1 digit Year code
WW	denotes 2 digit Week code
V	denotes VDE safety (optional)

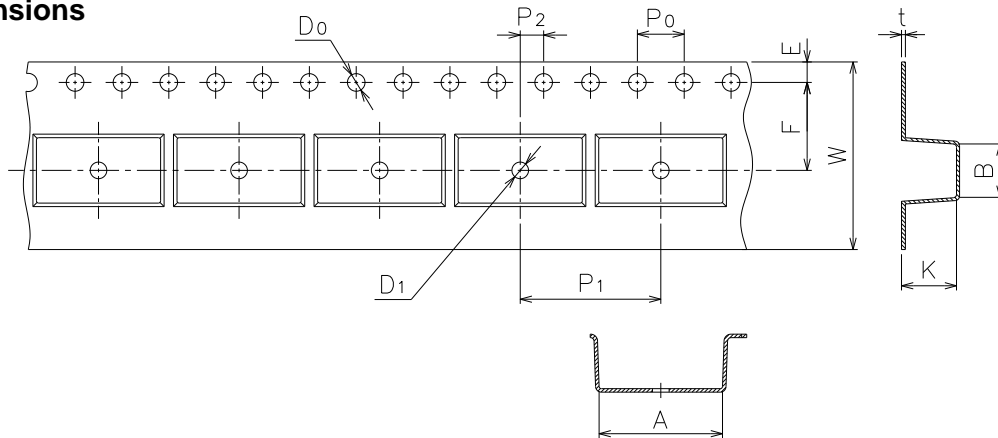
Tape & Reel Packing Specifications

Option TA



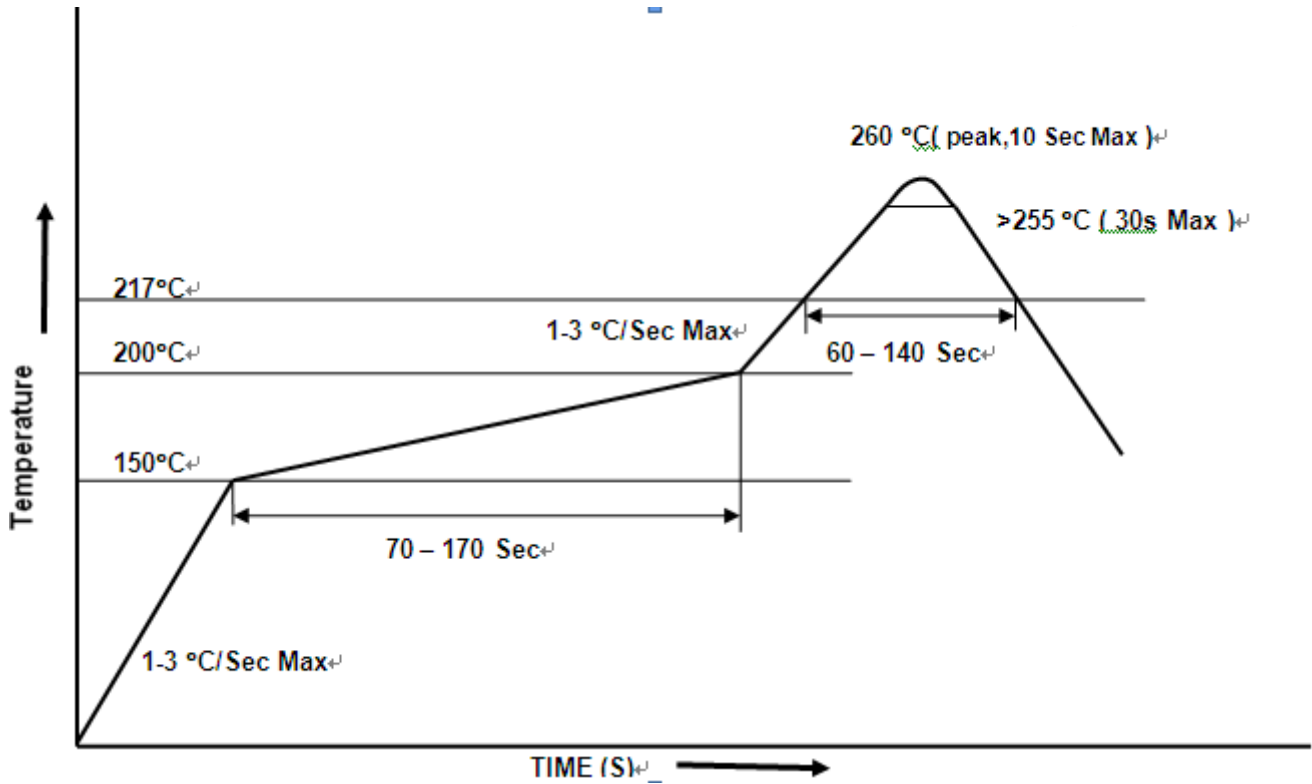
Direction of feed from reel

Tape dimensions



Dimension No.	A	B	Do	D1	E	F
Dimension(mm)	12.6±0.1	6.6±0.1	1.5+0.1/-0	1.5±0.1	1.75±0.1	7.5±0.1
Dimension No.	Po	P1	P2	t	W	K
Dimension(mm)	4.0±0.1	16.0±0.1	2.0±0.1	0.5±0.05	16.0±0.3	7.31±0.1

Solder Reflow Temperature Profile



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