

TOSHIBA PHOTOCOUPLER GaAs IRED & PHOTO-TRANSISTOR

CNY17-2, CNY17-3, CNY17-4

AC LINE /DIGITAL LOGIC ISOLATOR

DIGITAL LOGIC /DIGITAL LOGIC ISOLATOR

TELEPHONE LINE RECEIVER

TWISTED PAIR LINE RECEIVER

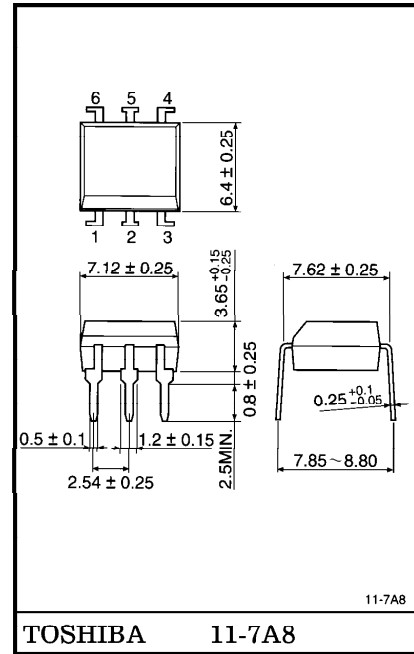
HIGH FREQUENCY POWER SUPPLY FEEDBACK CONTROL

RELAY CONTACT MONITOR

The TOSHIBA Corporation CNY17 consist of a gallium arsenide infrared emitting diode coupled with a silicon photo transistor in a dual in-line package.

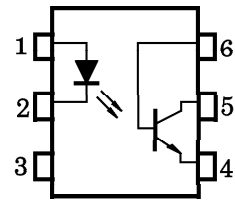
- Small Package Size and Low Cost
- Fast Switching Speeds : $5\mu s$ (TYP.)
- High DC Current Transfer Ratio : CTR ($I_F = 10mA, V_{CE} = 5V$)
 CNY17-2 : 63~125%
 CNY17-3 : 100~200%
 CNY17-4 : 160~320%
- High Isolation Resistance : $10^{11}\Omega$ (TYP.)
- High Isolation Voltage : 4400V (MIN.)

Unit in mm



Weight : 0.4g

PIN CONFIGURATION



- 1 : ANODE
- 2 : CATHODE
- 3 : N.C.
- 4 : EMITTER
- 5 : COLLECTOR
- 6 : BASE

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● Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.

● The products described in this document are subject to foreign exchange and foreign trade control laws.

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● The information contained herein is subject to change without notice.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I _F	60	mA
	Forward Current Derating	ΔI _F /°C	0.8*	mA/°C
	Peak Forward Current (Note)	I _{PF}	3	A
	Power Dissipation	P _D	100	mW
	Power Dissipation Derating	ΔP _D /°C	1.33*	mW/°C
	Reverse Voltage	V _R	6	V
PHOTO-TRANSISTOR	Collector-Emitter Voltage	BV _{CEO}	70	V
	Collector-Base Voltage	BV _{CBO}	70	V
	Emitter-Collector Voltage	BV _{ECO}	7	V
	Collector Current	I _C	100	mA
	Power Dissipation	P _C	150	mW
	Power Dissipation Derating	ΔP _C /°C	2.0*	mW/°C
COUPLED	Storage Temperature	T _{stg}	-55~150	°C
	Operating Temperature	T _{opr}	-55~100	°C
	Lead Soldering Temperature (10s)	T _{sol}	260	°C
	Total Package Dissipation	P _T	200	mW
	Total Package Power Dissipation Derating	ΔP _T /°C	2.6*	mW/°C

(Note) Pulse Width 1μs, 300pps.

* Above 25°C ambient.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
LED	Forward Voltage	V_F	$I_F = 60\text{mA}$	—	1.35	1.65	V	
	Reverse Current	I_R	$V_R = 3\text{V}$	—	—	10	μA	
	Capacitance	C_D	$V = 0, f = 1\text{MHz}$	—	30	—	pF	
PHOTO-TRANSISTOR	DC Forward Current Gain	h_{FE}	$V_{CE} = 5, I_C = 500\mu\text{A}$	100	200	—		
	Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_F = 0$	70	—	—	V	
	Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_F = 0$	70	—	—	V	
	Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	$I_E = 100\mu\text{A}, I_F = 0$	7	—	—	V	
	Collector Dark Current	I_{CEO}	$V_{CE} = 10\text{V}, I_F = 0$	—	1	50	nA	
	Collector Dark Current	I_{CBO}	$V_{CB} = 10\text{V}, I_F = 0$	—	0.1	20	nA	
	Collector-Emitter Capacitance	C_{CE}	$V = 0, f = 1\text{MHz}$	—	10	—	pF	
COUPLED	Current Transfer Ratio	CNY17-2	$I_F = 10\text{mA}, V_{CE} = 5\text{V}$	CTR	63	—	125	%
		CNY17-3			100	—	200	
		CNY17-4			160	—	320	
	Saturation Voltage	$V_{CE(sat)}$	$I_F = 10\text{mA}, I_C = 2.5\text{mA}$	—	—	0.4	V	
	Capacitance Input to Output	C_S	$V = 0, f = 1\text{MHz}$	—	0.8	—	pF	
	Isolation Resistance	R_S	$V = 500\text{V}$	—	10^{11}	—	Ω	
	DC Isolation Voltage	BV_S	DC 1 minute	4400	—	—	V	
	Rise Fall Time	t_r / t_f	$V_{CE} = 10\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega$	—	5	10	μs	
Rise / Fall Time Photo Diode	t_r / t_f	$V_{CB} = 10\text{V}, I_{CB} = 50\mu\text{A}$ $R_L = 100\Omega$	—	200	—	ns		

