

# HAMAMATSU

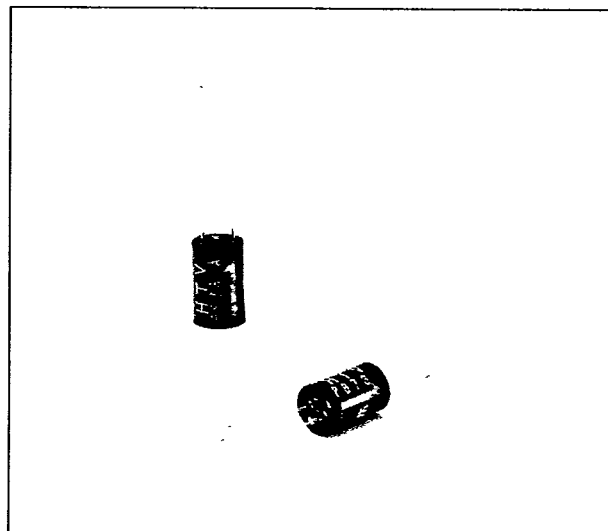
TECHNICAL DATA

## CdS OUTPUT TYPE PHOTOCOUPLERS P873 SERIES

F-41-81

### LED input, CdS cell output, Cylindrical package

The CdS output type photocoupler has a number of features such as a pure resistor with non-polar output on the output side, a simple circuit structure, and a wide output range. Hamamatsu provides various types of CdS output photocouplers. Please select the type best suited to your application. (See the Selection Guide on page 3.)



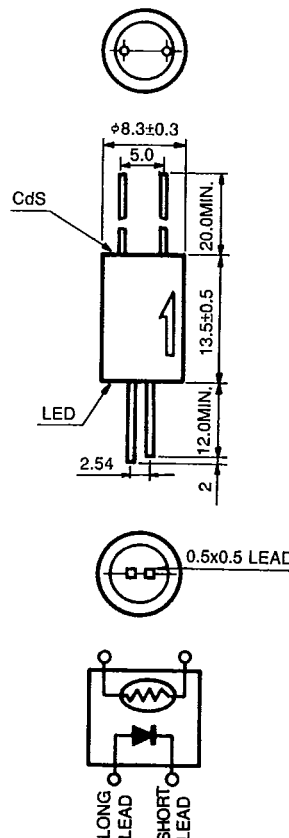
#### FEATURES

- Pure resistor with non-polar output
- Simple circuit structure
- Wide output range
- Cylindrical package
- UL listed : P873-G35-687, P873-24, P873-25 (E75221)

#### APPLICATIONS

- Audio instruments
- Electronic musical instruments
- Electronic measuring devices
- Triac drivers

Figure 1: Dimensional Outline and Pin Connection (Unit:mm)



#### MAXIMUM RATINGS (Ta = 25°C)

Parameters		Symbols	P873-G35-380 P873-G35-201B	P873-G35-687 P873-24, -25	P873-G35-552	Unit
Input	Forward Current	$I_F$	25			mA
	Reverse Voltage	$V_R$	4			Vdc
	Power Dissipation	$P$	70			mW
Output	Supply Voltage	$V_S$	200	400	100	Vdc
	Power Dissipation	$P$	50	100	50	mW
Operating Temperature		$T_{opr}$	-30 ~ +55	-30 ~ +55 (1)	-30 ~ +55	°C
Storage Temperature		$T_{stg}$	-30 ~ +50	-30 ~ +55 (1)	-30 ~ +55	°C

(1) P873-24 and P873-25 are -30°~+60°C

**CdS OUTPUT PHOTOCOUPPLERS P873 SERIES**

**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

Parameters		Symbols	Conditions	P873-G35-380			P873-G35-201B		
				Min.	Typ.	Max.	Min.	Typ.	Max.
Input	Forward Voltage	$V_F$	$I_F = 20\text{mA}$	—	2.1	—	—	2.1	—
	Recommended Forward Current	$I_F$		—	20	—	—	20	—
Output	ON Resistance	$R_{ON}$	$I_F = 20\text{mA}$	0.2	—	1.0	1.0	—	5.0
	OFF Resistance	$R_{OFF}$	10 seconds after $I_F$ goes OFF	1.0	—	—	10	—	—
Transfer Characteristics	Input-Output Isolation Voltage	$V_{ISO}$	RH40 ~ 60% 1, minute	5000	—	—	5000	—	—
	Rise Time (1)	$t_r$	$I_i = 20\text{mA}$	—	8.0	20	—	4.0	10
	Fall Time (1)	$t_f$		—	8.0	20	—	1.0	5.0

(1) Response Time Measuring Circuit

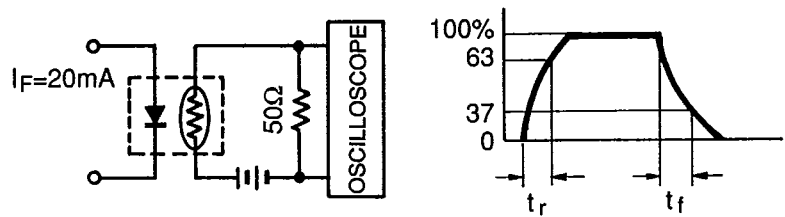


Figure 2: LED Allowable Forward Current vs. Temperature

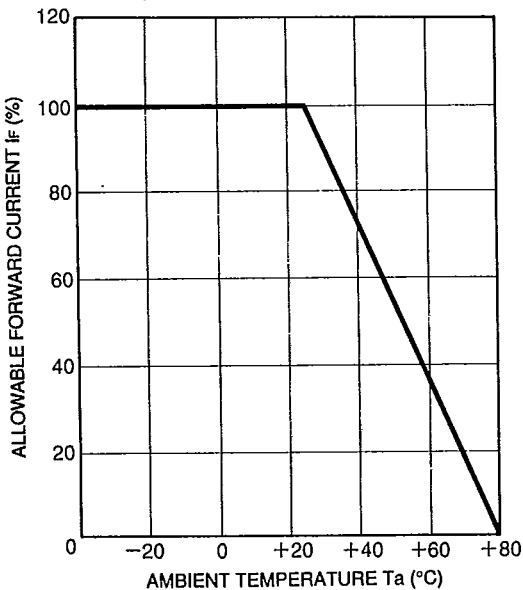
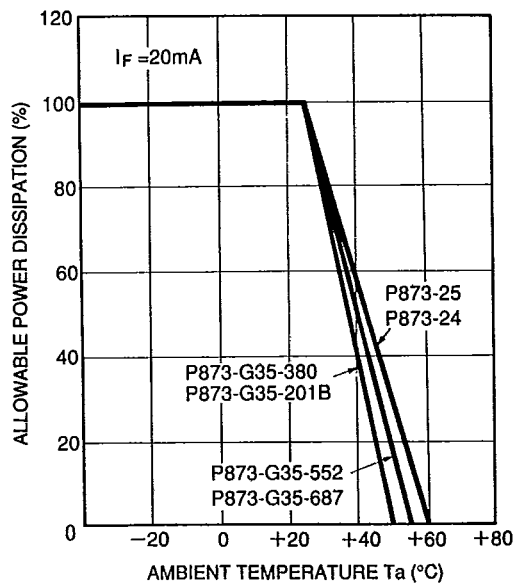


Figure 3: CdS Cell Allowable Power Dissipation vs. Temperature



P873-G35-552			P873-G35-687			P873-24			P873-25			Unit
Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
-	2.1	-	-	2.1	-	-	2.1	-	-	2.1	-	Vdc
-	20	-	-	20	-	-	20	-	-	20	-	mA
0.05	-	0.2	0.2	-	1.0	1.0	-	3.5	0.2	-	2.5	kΩ
1.0	-	-	1.0	-	-	10	-	-	10	-	-	-
5000	-	-	5000	-	-	5000	-	-	5000	-	-	Vrms
-	4.0	20	-	5.0	20	-	5.0	15	-	5.0	15	ms
-	10	30	-	7.0	30	-	5.0	20	-	5.0	20	ms

Figure 4: LED Forward Current vs. Forward Voltage

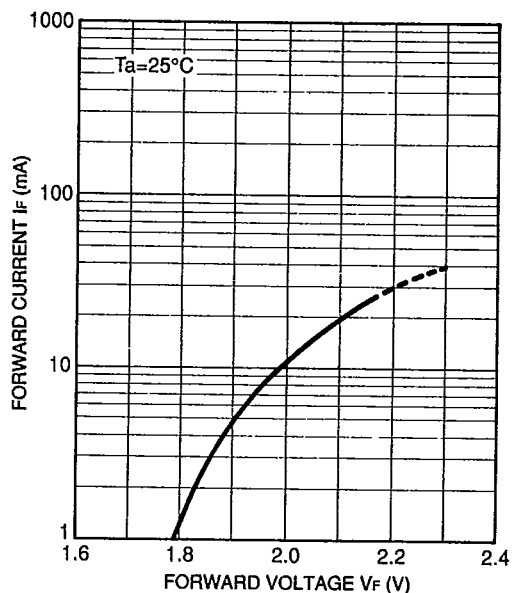


Figure 5: Output Resistance vs. Forward Current

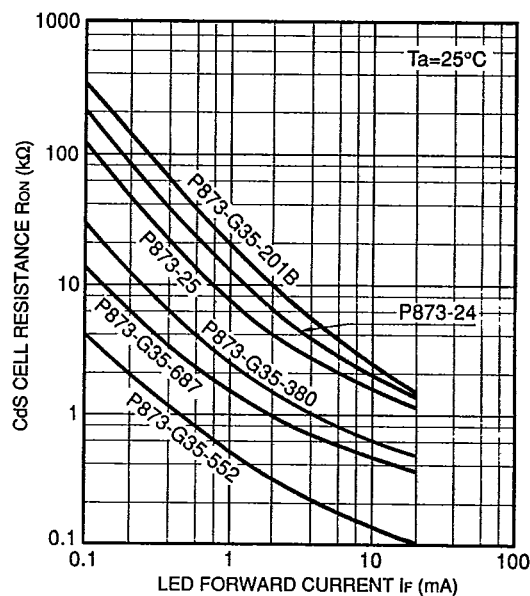


Figure 6: Rise/Fall Time vs. Load Resistance (P873-G35-380)

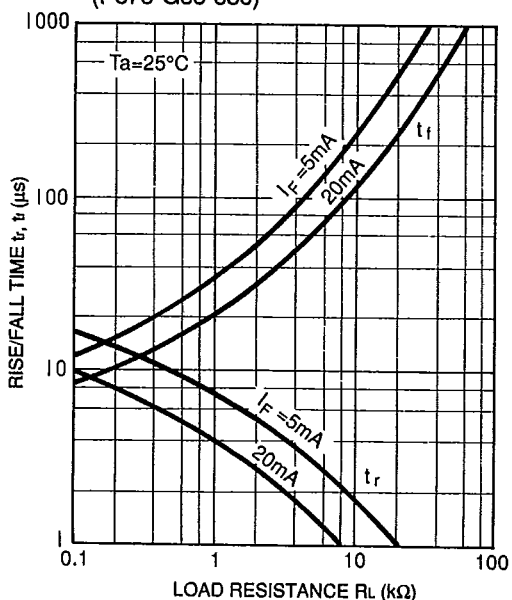


Figure 7: Output Resistance vs. Temperature (P873-G35-380)

