

Remote control photosensitive IC

RPM-600CBR Series

The RPM-600CBR Series consists of single-chip remote control photosensitive units in a compact, lightweight package made from a resin mold.

●Applications

VTRs

TVs

Air Conditioners

Audio equipment

Others

●Features

- 1) Resin mold package enables compact size and light weight.
- 2) Built-in magnetic shield.

●Series models

Model	Center frequency
RPM - 640CBR - S	40kHz
RPM - 640CBR - L	
RPM - 638CBR - S	38kHz
RPM - 638CBR - L	
RPM - 637CBR - S	36.7kHz
RPM - 637CBR - L	

●Absolute maximum ratings (Ta=25°C)

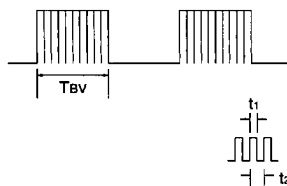
Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	6.3	V
Operating temperature	T _{opr}	-10~+75	°C
Storage temperature	T _{stg}	-30~+100	°C
Solder temperature	T _{sol} *	260	°C

* Within 5 seconds, 3 mm from base of lead

●Recommended input conditions

Remote control transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit
Burst width	T _{av}	550	600	650	μsec
Carrier duty ratio	F _{du}	45	50	50	%

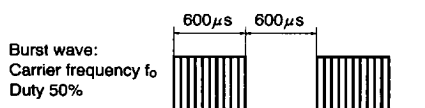


$$F_{du} = t_1 / t_2 \times 100 \text{ [%]}$$

●Electrical and optical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Operating voltage	V _{CC}	4.5	5.0	5.5	V	
Current consumption	I _{CC}	—	—	3.0	mA	No external light, no input
Direction length	L	8	15	—	m	
"H" voltage	V _H	4.5	—	—	V	Burst wave shown in illustration below transmitted using standard Rohm transmitter
"L" voltage	V _L	—	—	0.5	V	
ON pulse width	T _{ON}	400	600	800	μs	
OFF pulse width	T _{OFF}	400	600	800	μs	
Center frequency	f ₀	—	*	—	kHz	
Directional characteristics	θ 80%	—	33	—	deg	Horizontal direction
	θ 80%	—	14	—	deg	Perpendicular direction

* Three types: 40, 38, 36.7; satisfies ON/OFF pulse width within 20 cm to direction length.



●Electrical and optical characteristics curves

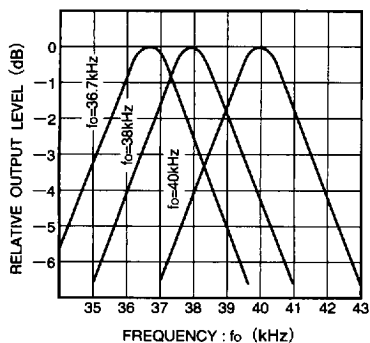


Fig. 1 B.P.F. characteristic

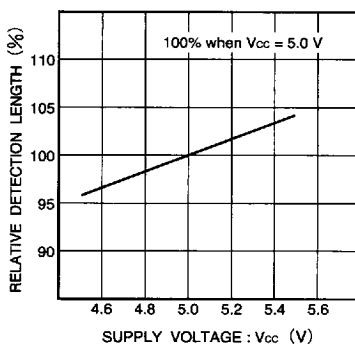


Fig. 2 Supply voltage vs. relative direction length characteristic

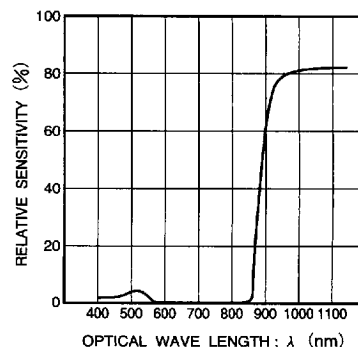


Fig. 3 Package transmittance (measured on flat board at t = 3.5 mm)

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● Directional characteristics

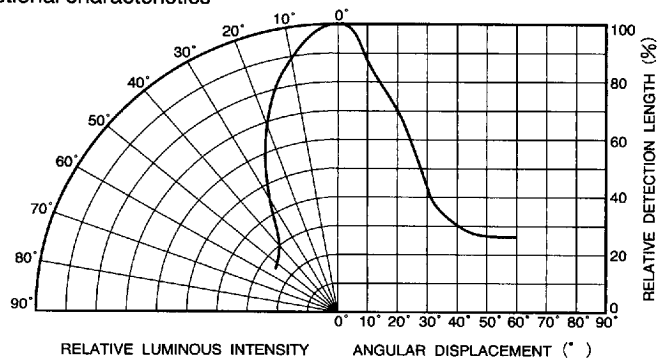


Fig. 4 Directional characteristic in vertical direction

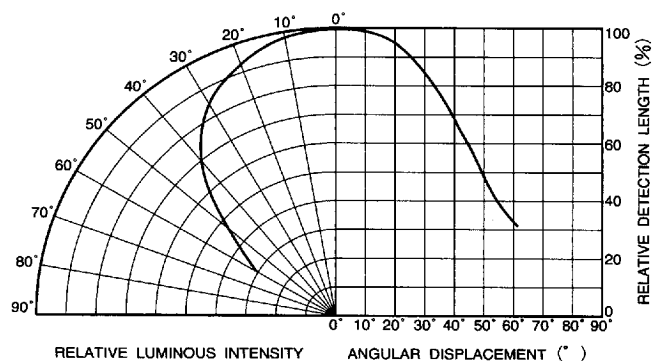
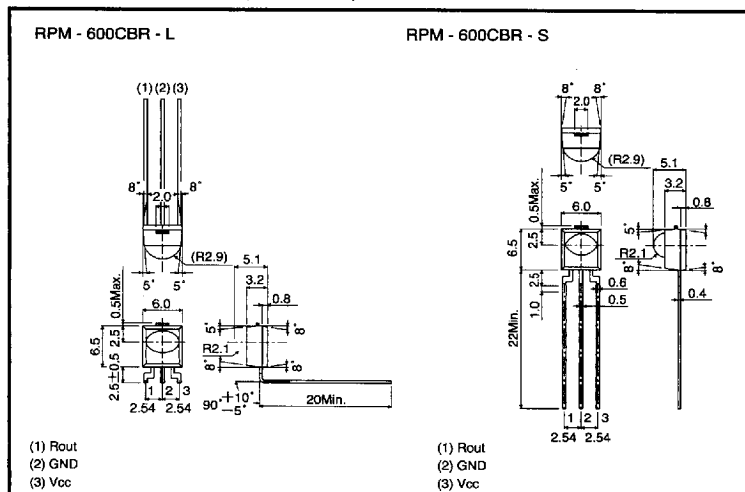


Fig. 5 Directional characteristic in horizontal direction

● External dimensions (Units: mm)



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ROHM

Remote control photosensitive IC

RPM-670CBR Series

The RPM-670CBR Series consists of single-chip remote control photosensitive units in a compact, lightweight package made from a resin mold.

●Applications

VTRs

TVs

Audio equipment

●Features

- 1) Resin mold package enables compact size and light weight.
- 2) Built-in electromagnetic shield.

●Series models

Model	Center frequency
RPM - 678CBR - S	40kHz
RPM - 678CBR - L	
RPM - 676CBR - S	38kHz
RPM - 676CBR - L	

●Absolute maximum ratings (Ta=25°C)

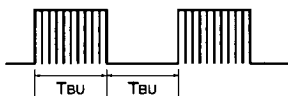
Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	6.3	V
Operating temperature	T _{opr}	-10~+75	°C
Storage temperature	T _{stg}	-30~+100	°C
Solder temperature	T _{sol} *	260	°C

* Within 5 seconds, 3 mm from base of lead

●Recommended input conditions

Remote control transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit
Burst width	T _{BU}	550	600	650	μsec
Carrier duty ratio	F _{DU}	45	50	55	%



$$F_{DU} = t_1 / t_2 \times 100 [\%]$$

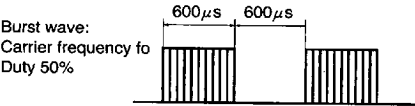


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●Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Operating voltage	V _{CC}	4.5	5.0	5.5	V	
Current consumption	I _{CC}	—	—	3.0	mA	No external light, no input
Direction length	L	8	12	—	m	
"H" voltage	V _H	4.5	—	—	V	Burst wave shown in illustration below transmitted using standard Rohm transmitter
"L" voltage	V _L	—	—	0.5	V	
ON pulse width	T _{ON}	400	600	800	μS	
OFF pulse width	T _{OFF}	400	600	800	μS	
Center frequency	f _o	—	*	—	kHz	
Directional characteristics	θ 80%	—	42	—	deg	Horizontal direction
	θ 80%	—	37	—	deg	Perpendicular direction

* Two types: 40, 38; satisfies ON/OFF pulse width within 20 cm to direction length.



●Electrical and optical characteristics curves

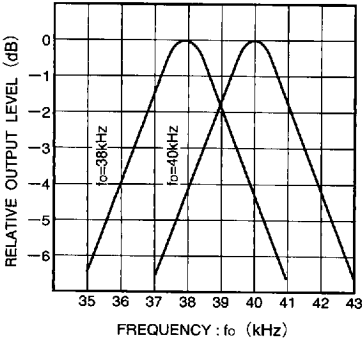


Fig. 1 B.P.F. characteristic

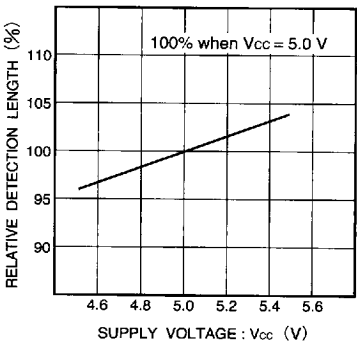


Fig. 2 Supply voltage vs.relative direction length characteristic

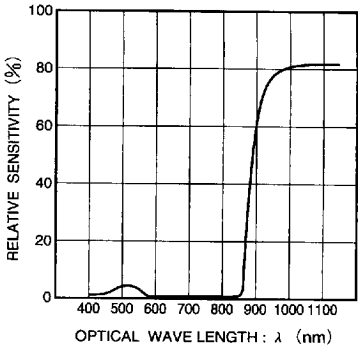


Fig. 3 Package transmittance (measured on flat board at t = 3.5 mm)

PRM670 series
Remote controll photosensitive ICs

● Directional characteristics

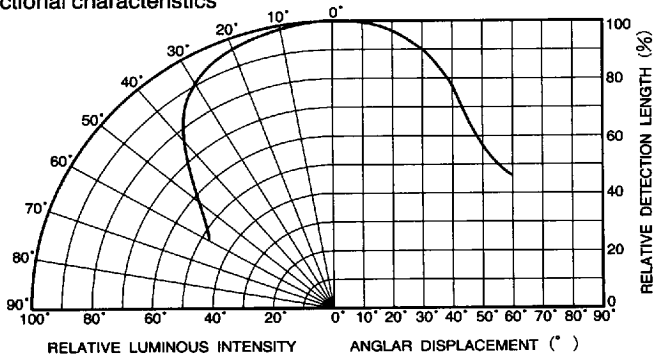


Fig. 4 Directional characteristic in vertical direction

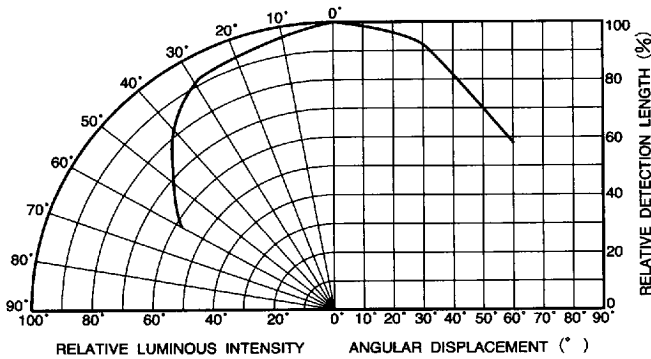


Fig. 5 Directional characteristic in horizontal direction

● External dimensions (Unit: mm)

