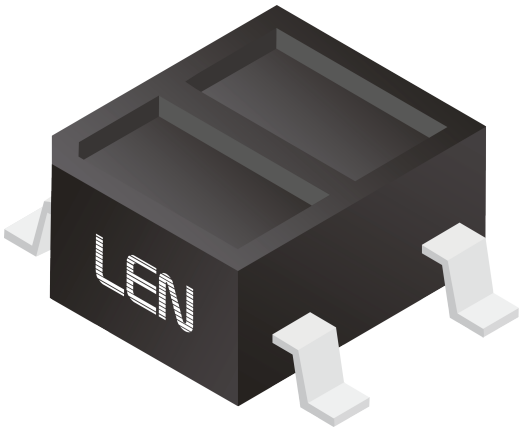
QRE1113GR
Opto Interrupter

Descriptions

QRE1113GR is a light reflection switch which includes a GaAs IR-LED transmitter and a NPN photo-transistor with a high photosensitive receiver for short distance, operating in the infrared range. Both components are mounted side- by- side in a plastic package.

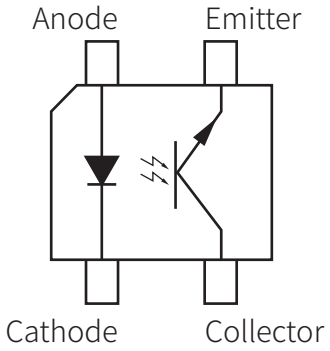


SMD-4

Features

- Micro packaging
- Lead form: Gull Wing
- Phototransistor output
- Tape and roll packaging
- No contact surface induction

Schematic Diagram



Applications

- VCR
- Camera
- Floppy disk driver
- Cassette type recorder
- Various microcomputer control equipment

Ordering Information

Part Number	Package	Shipping Quantity
QRE1113GR	SMD-4	1000 pcs / Tape

Absolute Maximum Ratings (T_A=25°C)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	P_D	75	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current (*1) Pulse Width ≤100μs,Duty Cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	50	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		T_{OPR}	-20~+70	°C
Storage Temperature		T_{STG}	-30~+80	°C
Lead Soldering Temperature (*2)		T_{SOL}	260	°C

Notes:(*1) tw=100 μsec., T=10 msec. (*2) t=5 sec

Electro-Optical Characteristics (T_A=25°C)

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Input	Forward Voltage	V_F	I_F=20mA		1.2	1.6	V
	Reverse Current	I_R	V_R=5V			10	uA
	Peak Wavelength	λ_P			940		nm
Output	Dark Current	I_{CEO}	V_{CE}=10V			100	nA
	C-E Saturation Voltage	$V_{CE(sat)}$	I_C=2mA,E_E=1mW/cm^2			0.4	V
Transfer Characteristics	Light Current	$I_{C(ON)}$	V_{CE}=5V,I_F=10mA	180		440	uA
	Leakage Current	I_{CEOD}				1	uA
	Rise Time	T_R	V_{CE}=2V,I_C=100μA R_L=1KΩ		20		usec
	Fall Time	T_F			20		usec

Typical Electro-Optical Characteristics Curves

Fig.1 Relative Collector Current vs. Distance between Sensor and AL Evaporation Galss

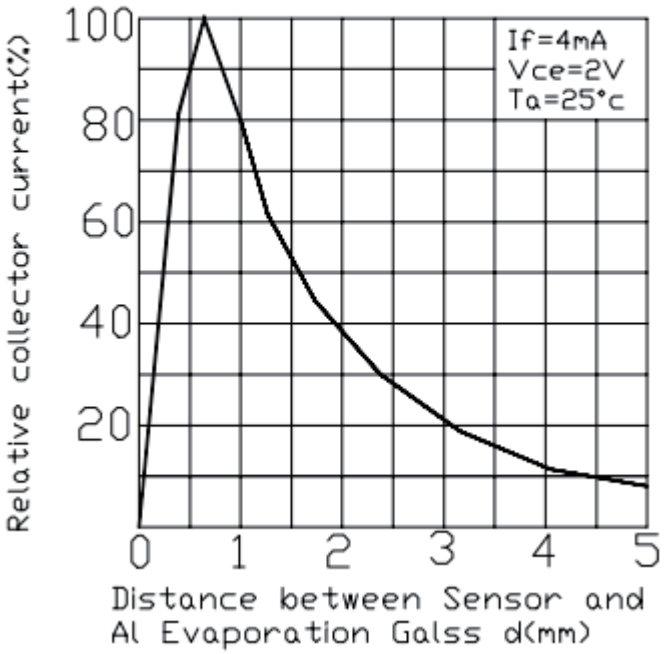


Fig.2 Collector Current vs. Collector-emitter Voltage

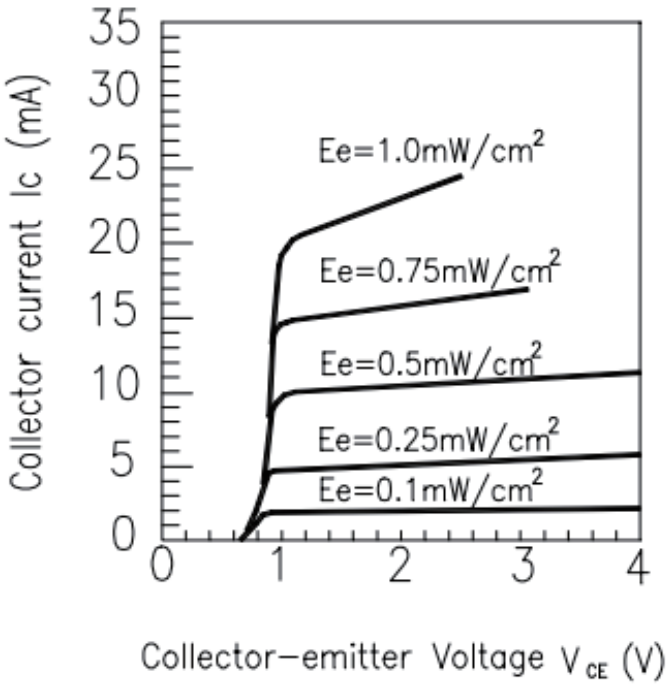


Fig.3 Collector Dark Current vs. Ambient Temperature

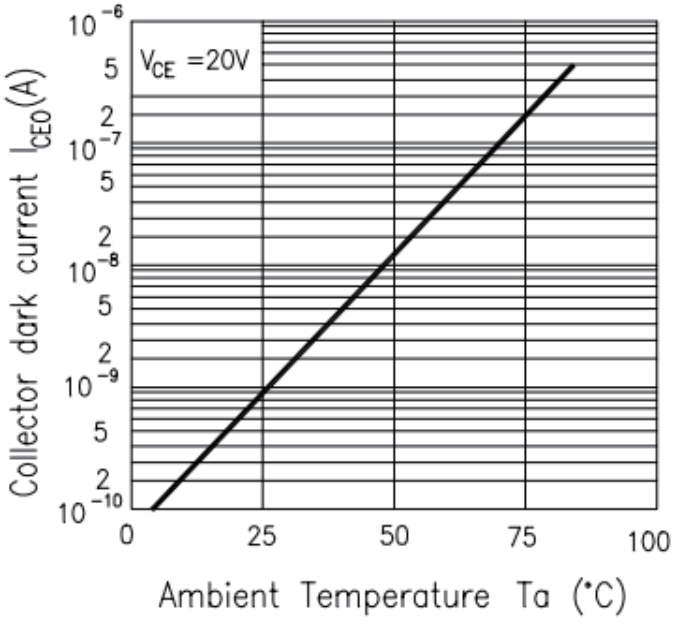
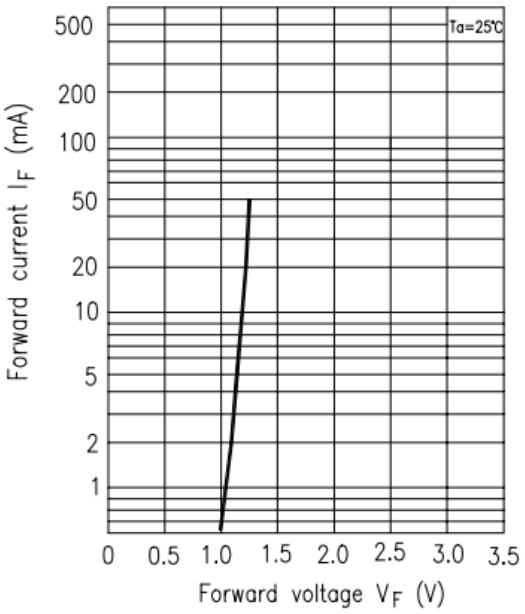


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Response Time vs.
Load Resistance

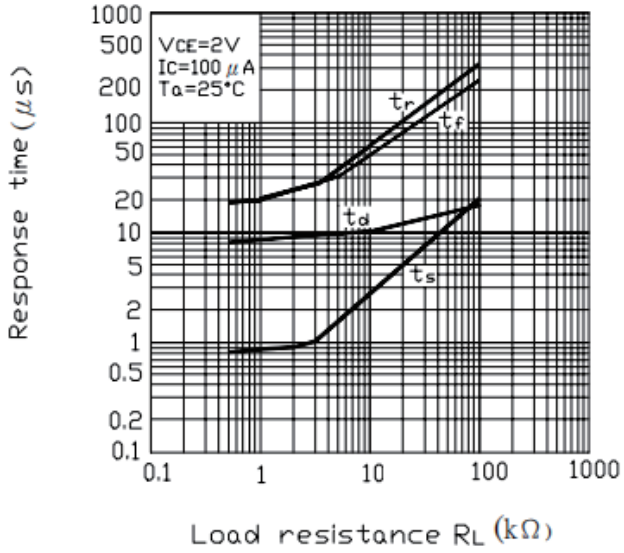


Fig.6 Forward Voltage vs.
Ambient Temperature

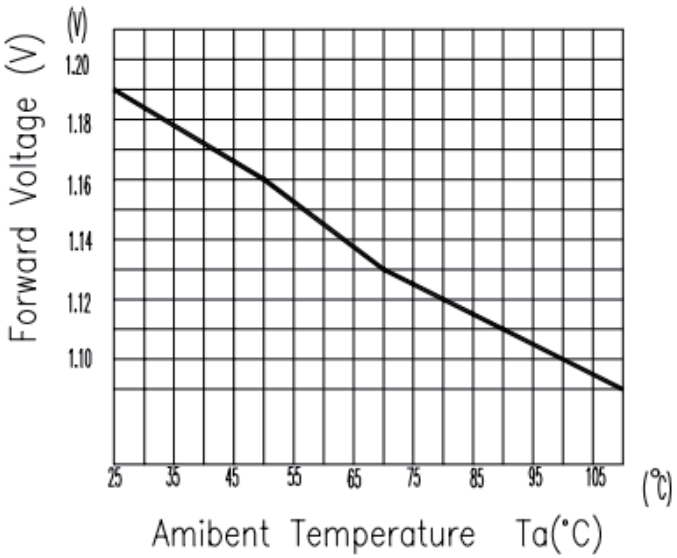
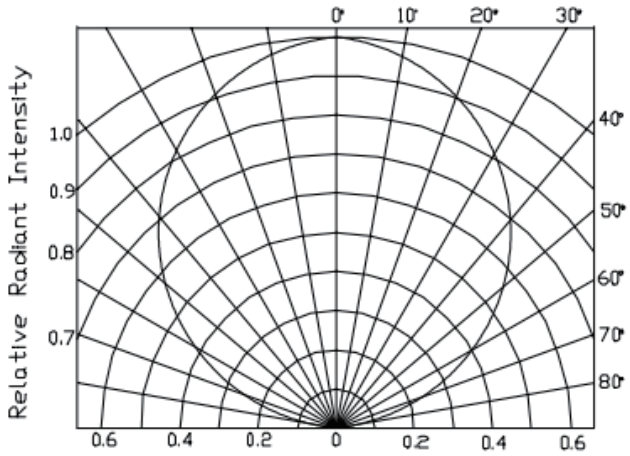
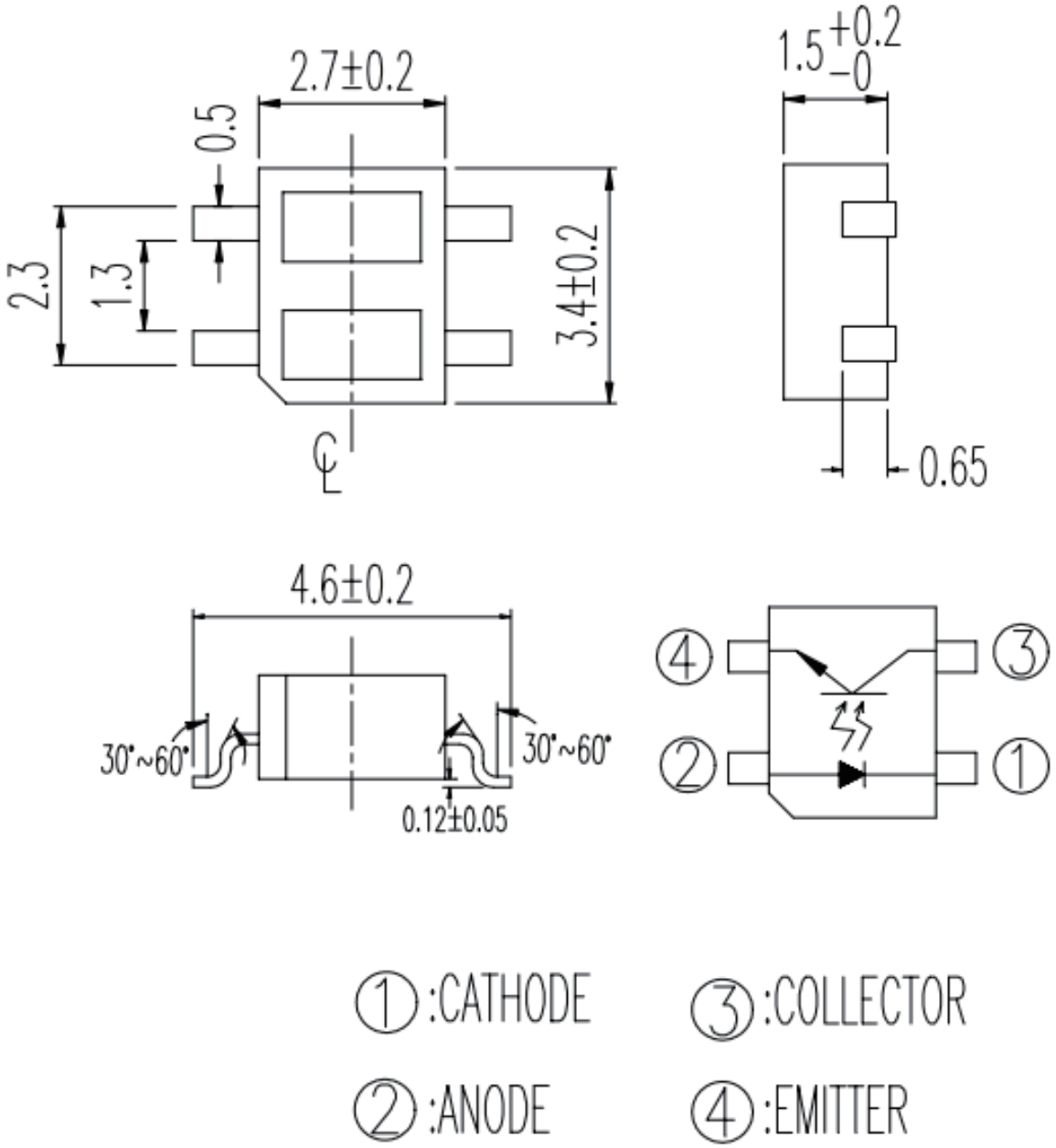


Fig.7 Relative Radiant Intensity vs.
Angular Displacement



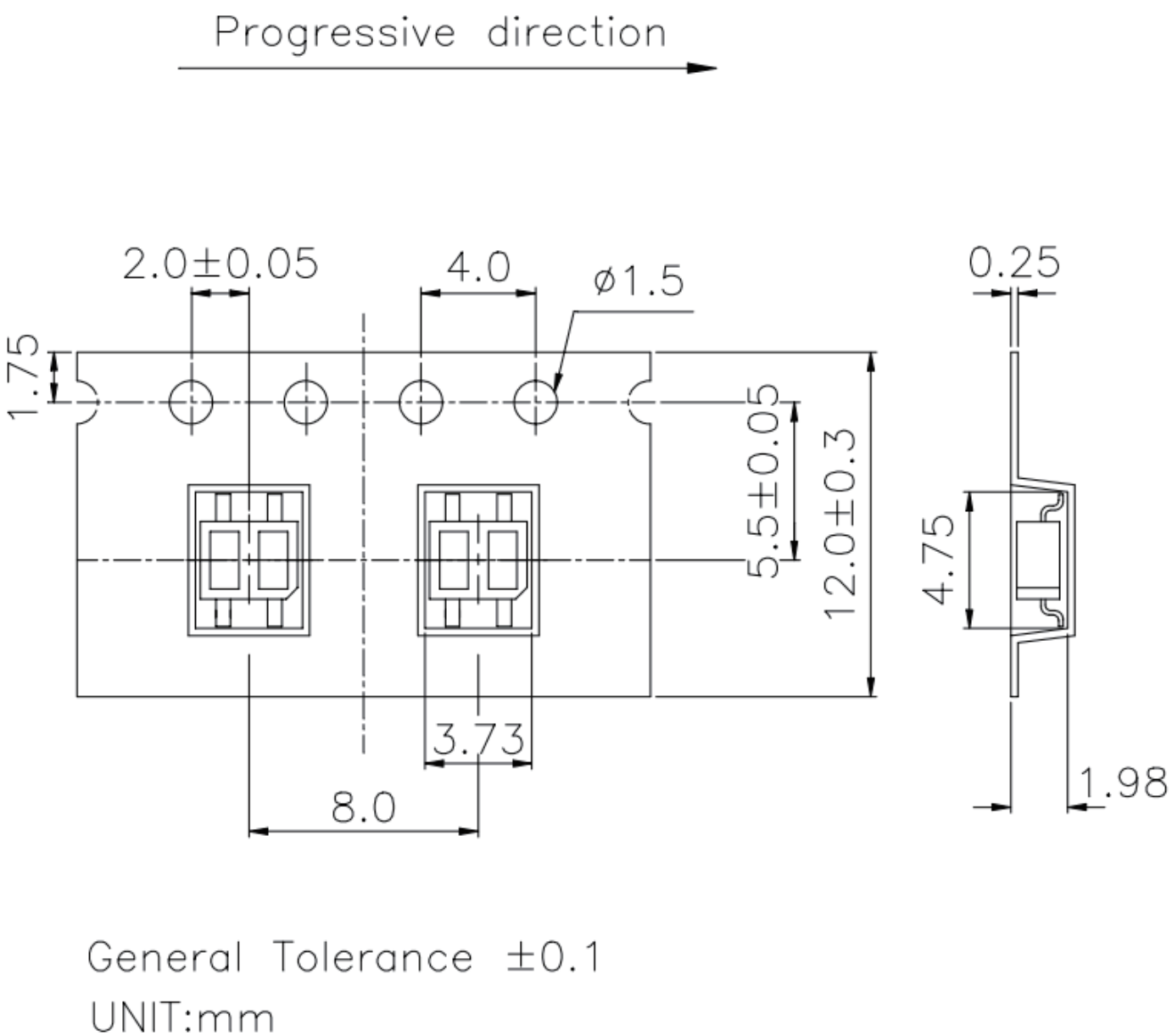
Package Dimensions

SMD-4



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.15mm

Taping Dimensions



General Tolerance ±0.1
UNIT:mm

DISCLAIMER

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVERELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

LONEON Technology Co., Ltd, agents, and employees, and all persons acting on its or their behalf (collectively,"LEN"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

LEN makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, LEN disclaims (1) any and all liability arising out of the application or use of any product, (2) any and all liability, including without limitation special,consequential or incidental damages, and (3) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on LEN' s knowledge of typical requirements that are often placed on LEN products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer' s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer' s technical experts. Product specifications do not expand or otherwise modify LEN' s terms and conditions of purchase,including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, LEN products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the LEN product could result in personal injury or death.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of LEN. Product names and markings noted herein may be trademarks of their respective owners.