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DATA SHEET

PART NO. : PA-ITRLT2423

REV : A / 0

CUSTOMER'S APPROVAL : _____ DCC : _____

Descriptions

The PA-ITRLT2423 consists of an infrared emitting diode and a silicon phototransistor encased in a black thermo-plastic housing. The advantage of the device is the small package. Phototransistor receives radiation from the IR LED only, and avoids the noise from ambient light.

Features

- Fast response time
- High analytic
- Thin and small package
- Pb free
- This product itself will remain within RoHS compliant version

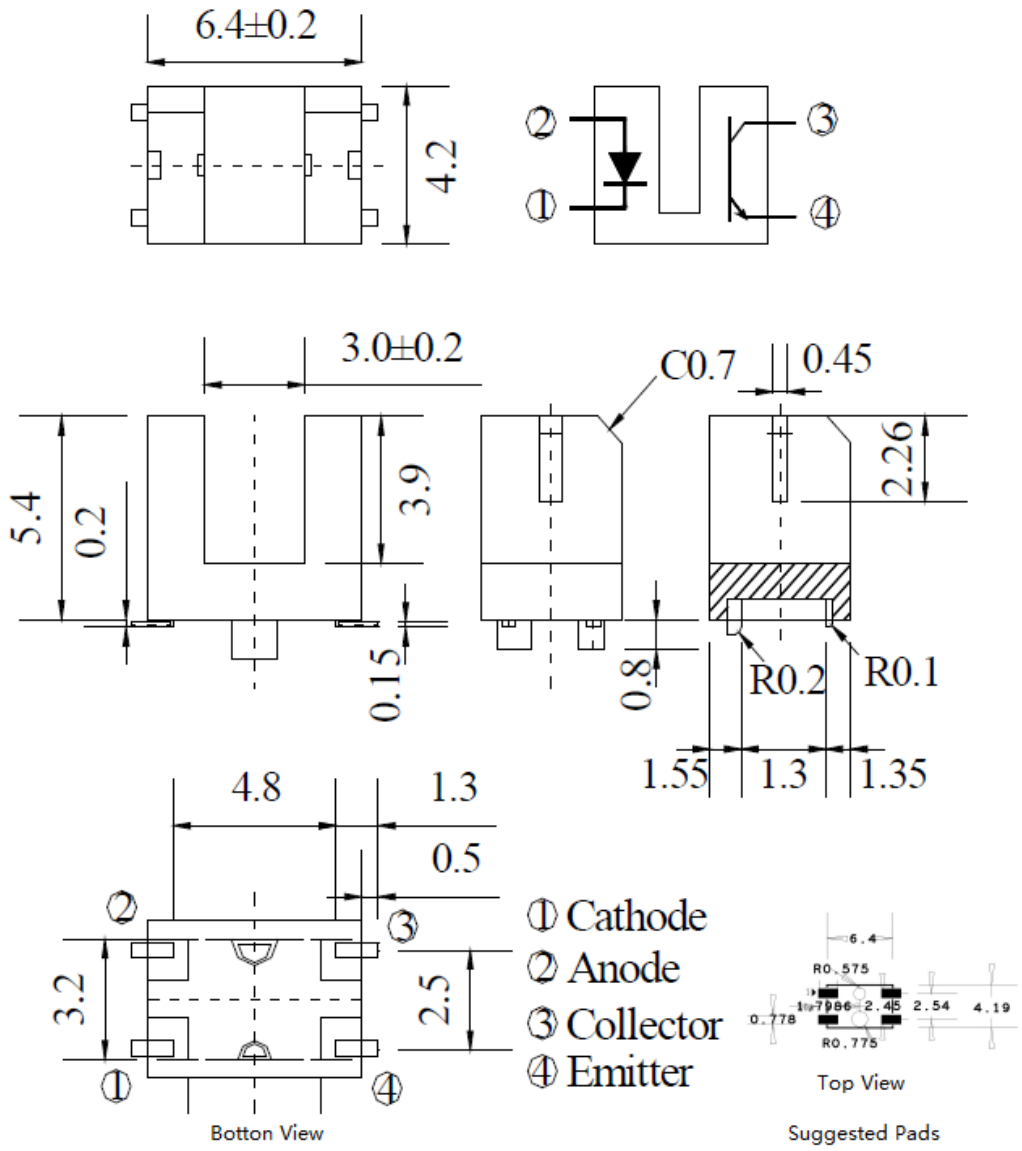
Applications

- Camera
- Copier
- Scanner
- Non-contact Switching

Device Selection Guide

Device No.	Chip Material
IR	GaAlAs
PT	Silicon

Package Dimension



Note:

1.All dimensions are in millimeters.

2.Tolerances unless dimensions ±0.3mm.

3.Lead spacing is measured where the lead emerge from the package

Absolute Maximum Ratings

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current (*1) Pulse width ≦100μs, Duty cycle=1%	IFP	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+85	℃
Lead Soldering Temperature (*2)		Tsol	260	℃

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

Electro-Optical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	----	1.2	1.6	V	I_F=20mA
	Reverse Current	I_R	----	----	10	μA	V_R=5V
	Peak Wavelength	λ_P	----	940	----	nm	I_F=20mA
Output	Dark Current	I_{CEO}	----	1	100	nA	V_{CE}=10V
	C-E Saturation Voltage	V_{CE}(sat)	----	----	0.4	V	I_C=2mA,Ee=1mW/cm^2
Transfer Characteristics	Collect Current	I_C(ON)	0.2	---	5	mA	V_{CE}=5V ,I_F=20mA
	Leakage Current	I_{CEOD}	---	---	1	μ A	
	Rise time	t_r	----	15	----	μsec	V_{CE}=2V I_C=1mA R_L=1KΩ
	Fall time	t_f	----	15	----	μsec	

Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs. Ambient Temperature

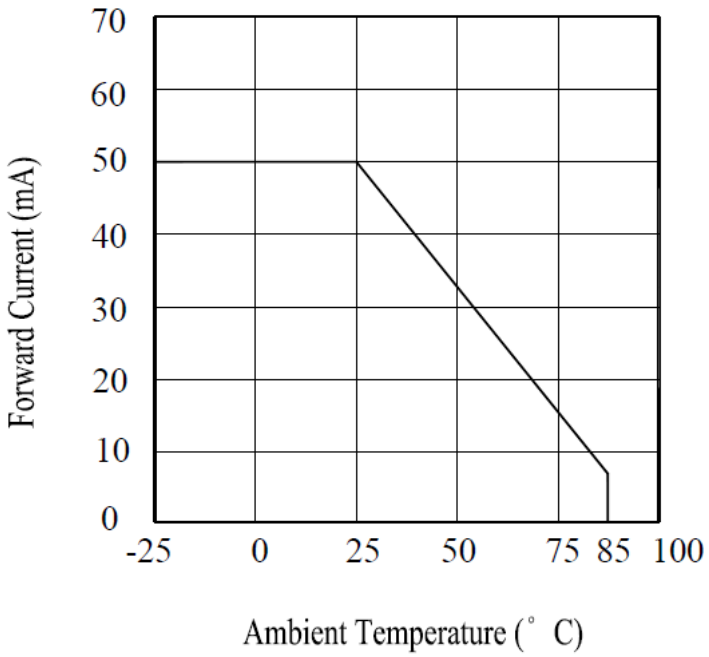


Fig.2 Spectral Distribution

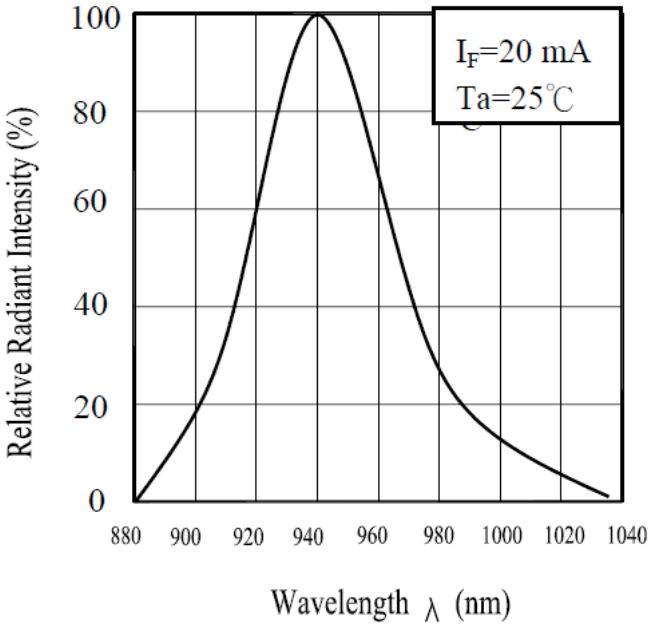


Fig.3 Peak Emission Wavelength Ambient Temperature

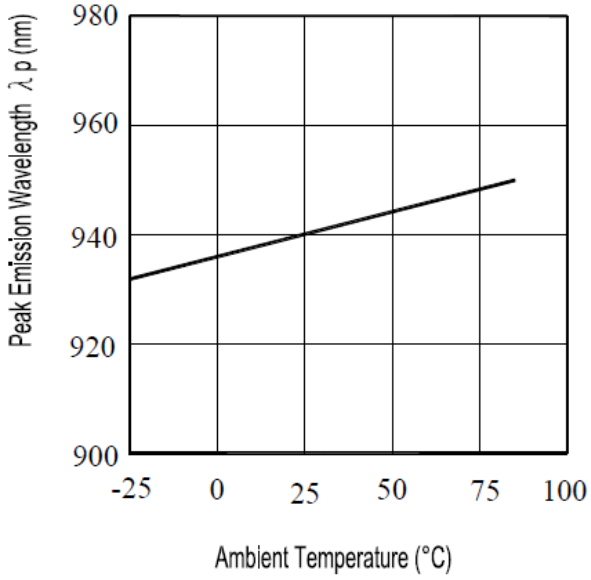
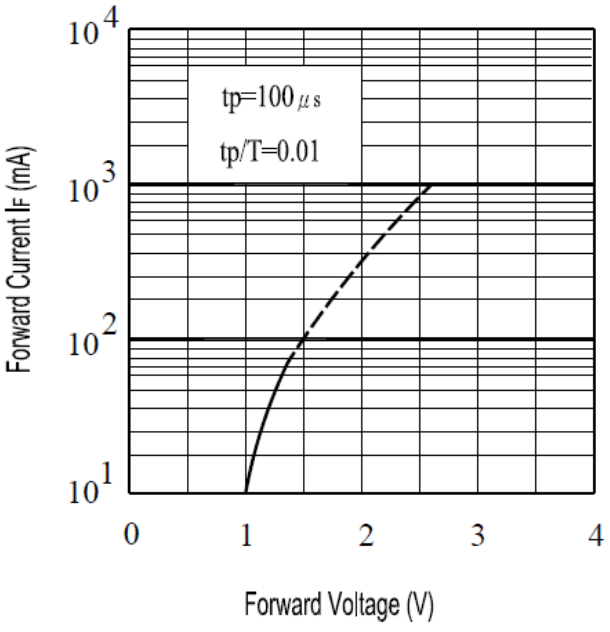


Fig.4 Forward Current vs. Forward Voltage



. Fig.5 Forward Voltage vs.
Ambient Temperature(°C)

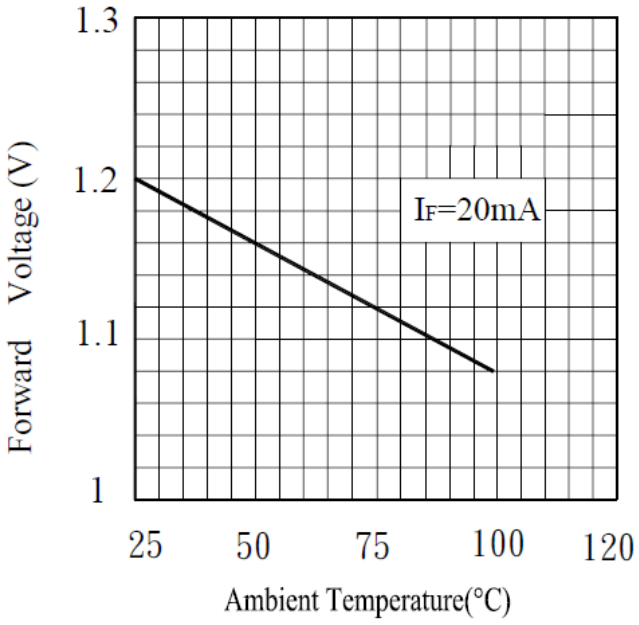
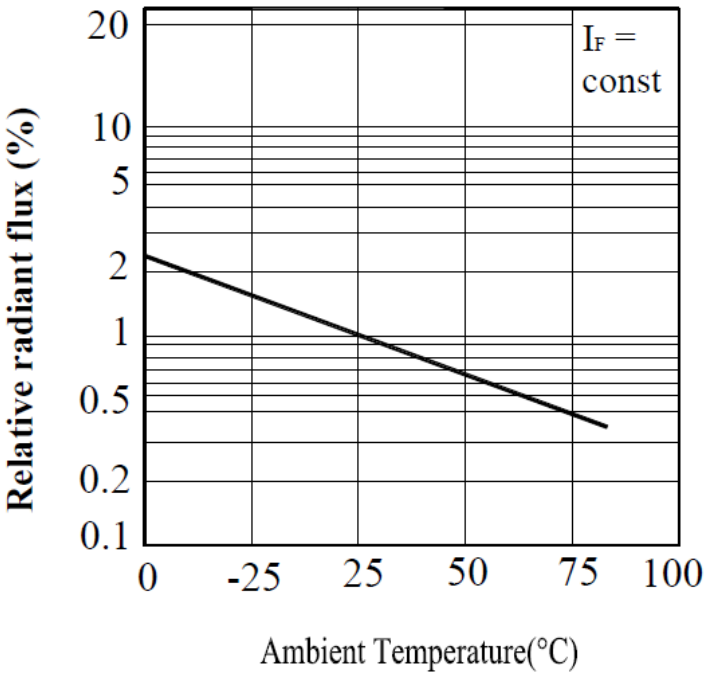


Fig.6 Relative Radiant Flux vs.
Ambient Temperature(°C)



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

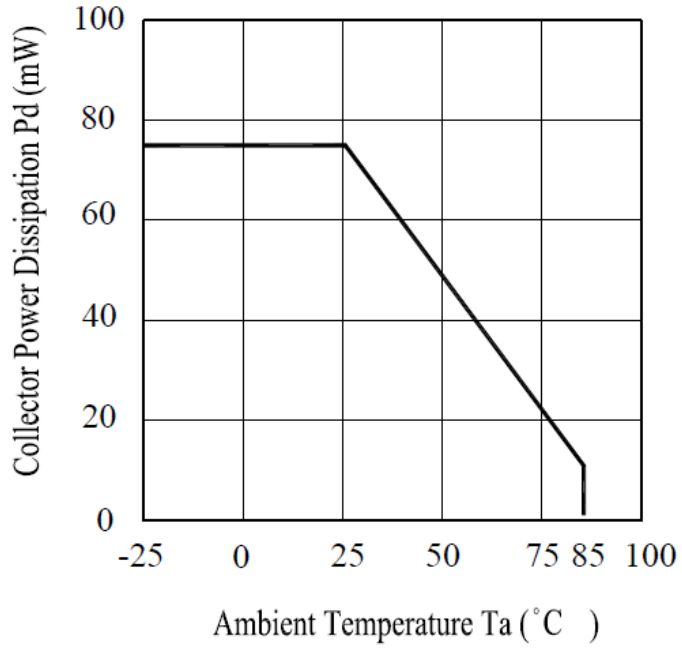


Fig.2 Spectral Sensitivity

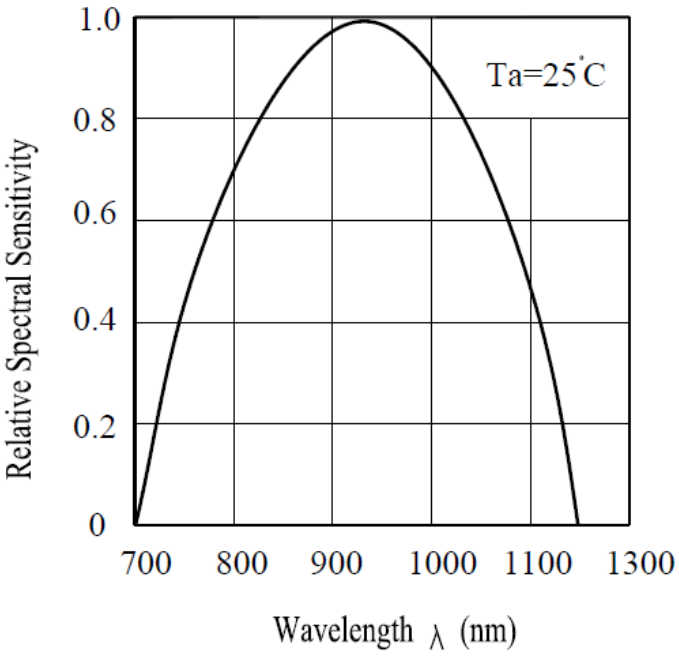


Fig.3. Collector Dark Current vs. Ambient Temperature

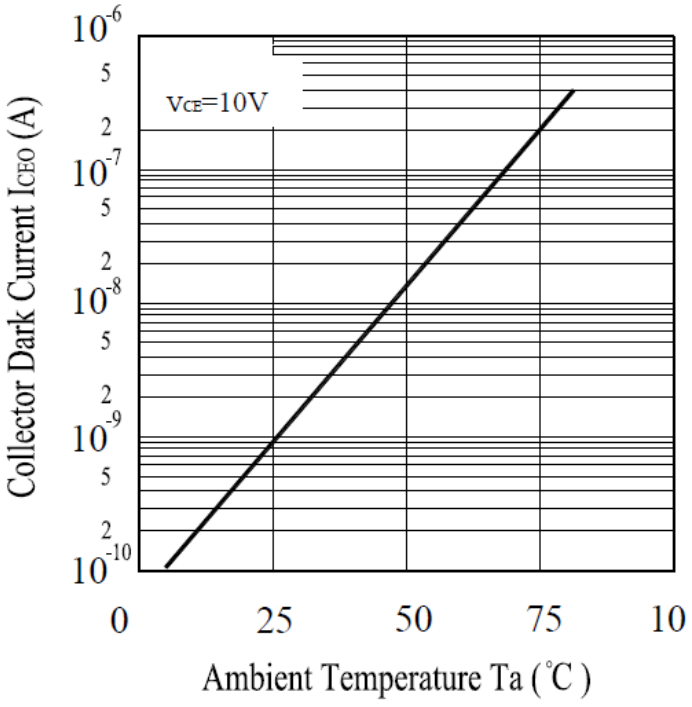
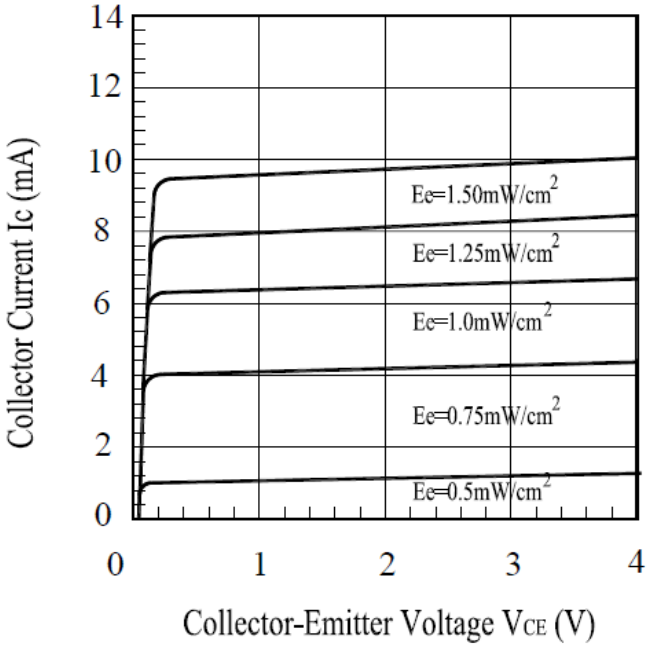


Fig.4 Collector Current vs. Collector-Emitter Voltage



Reliability Test Item And Condition

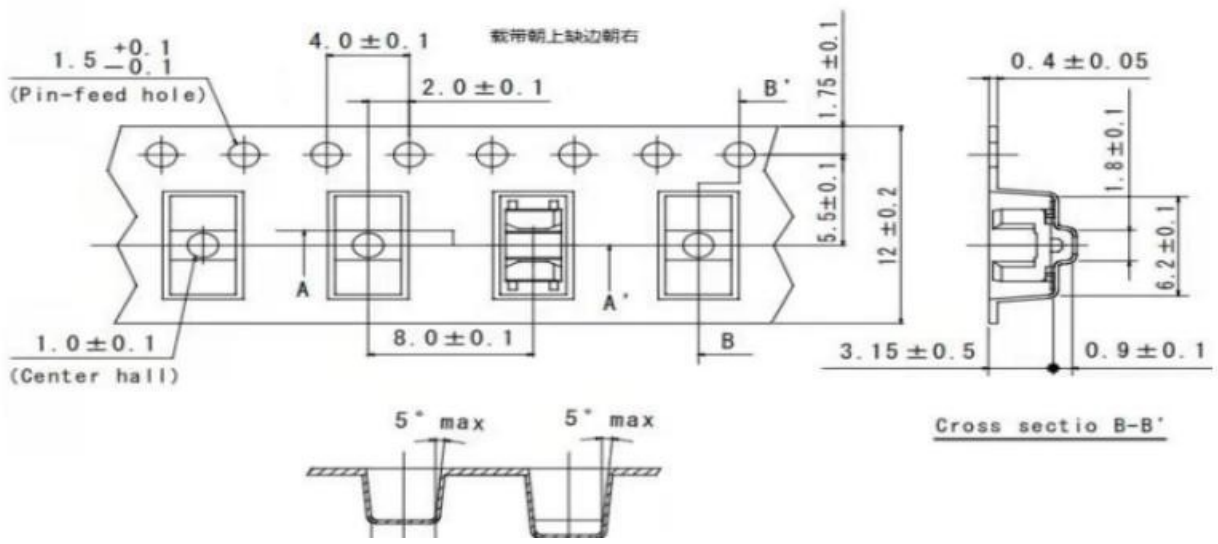
The reliability of products shall be satisfied with item listed below:

Confidence level :90%

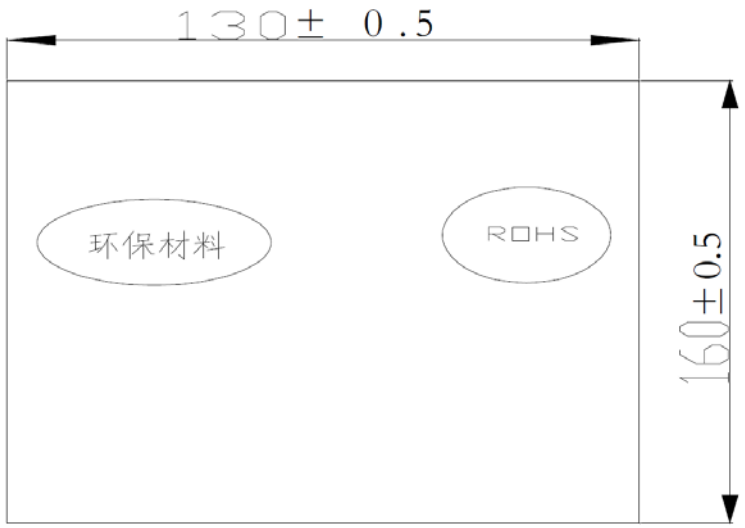
LTPD:10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgment Criteria	Ac/Re
1	Solder Resistance	Ta = 260 ±5°C	10 sec	22pcs		0/1
2	Temperature Cycle	H : +100℃ 15mins ↕ 5mins L : -40℃ 15mins	300Cycles	22pcs	$I_R \geqq U \times 2$ $Ee \leqq L \times 0.8$ $V_F \geqq U \times 1.2$	0/1
3	Thermal Shock	H :+100℃ 5mins ↕ 10secs L :-10℃ 5mins	300Cycles	22pcs	U：Upper Specification Limit L：Lower Specification Limit	0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-40℃	1000hrs	22pcs		0/1
6	DC Operating Life	V_{CE}=5V	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

Packing Quantity Specification



Packaging Bag Dimensions



Packaging Box Dimensions