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LNA2402L (LN151L), LNA2403F (LN151F)

GaAs Infrared Light Emitting Diodes

For optical control systems

■ Features

- High-power output, high-efficiency: $P_O = 5.0$ mW (min.)
- Fast response and high-speed modulation capability:
 $t_r, t_f = 1$ μ s (typ.)
- Infrared light emission close to monochromatic light:
 $\lambda_p = 950$ nm (typ.)
- Narrow directivity, suitable for effective use of radiant power (LNA2402L (LN151L))
- Wide directivity, matched for external optical systems (LNA2403F (LN151F))
- TO-18 standard type package

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Reverse voltage	V_R	3	V
Forward current	I_F	100	mA
Pulse forward current *	I_{FP}	2	A
Power dissipation	P_D	160	mW
Operating ambient temperature	T_{opr}	-25 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	-30 to +100	$^\circ\text{C}$

Note) * : $f = 100$ Hz, Duty Cycle = 0.1%

■ Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage		V_F	$I_F = 100$ mA		1.3	1.6	V
Reverse current		I_R	$V_R = 3$ V			10	μA
Radiant power *		P_O	$I_F = 100$ mA	5.0			mW
Peak emission wavelength		λ_p	$I_F = 100$ mA		950		nm
Spectral half band width		$\Delta\lambda$	$I_F = 100$ mA		50		nm
Terminal capacitance		C_t	$V_R = 0$ V, $f = 1$ MHz		60		pF
Rise time		t_r	$I_{FP} = 100$ mA		1		μs
Fall time		t_f			1		μs
Half-power angle	LNA2402L	θ	The Angle when the radiant power is halved		8		$^\circ$
	LNA2403F				32		$^\circ$

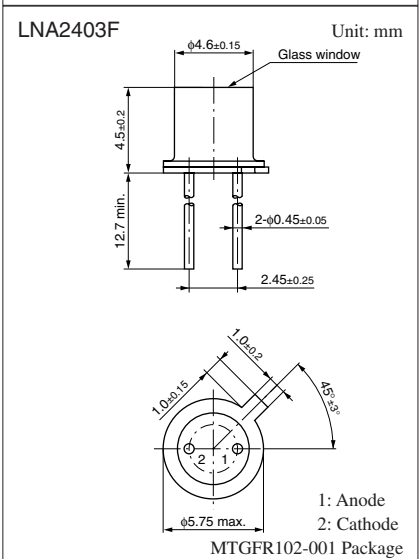
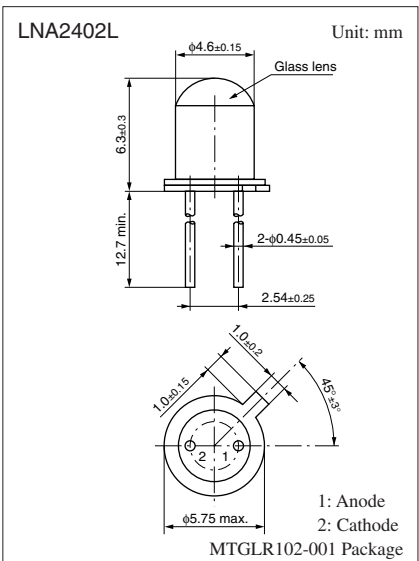
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

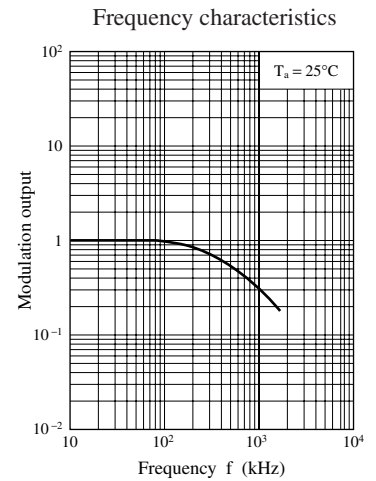
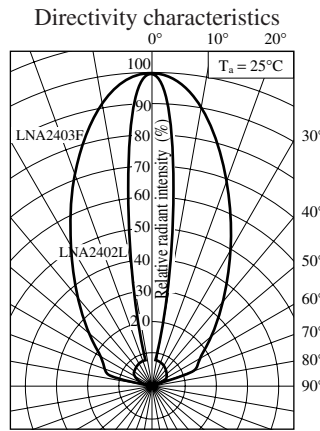
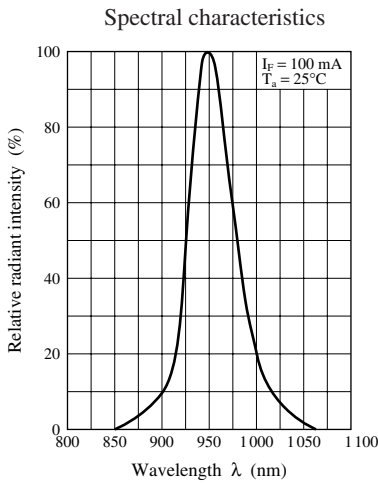
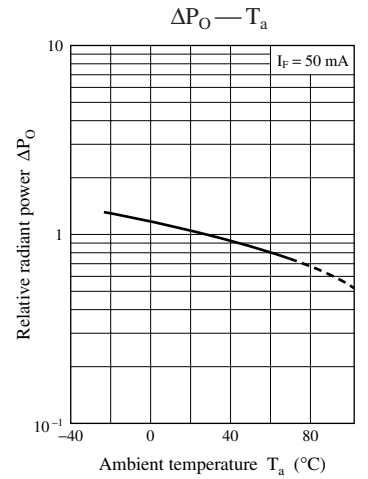
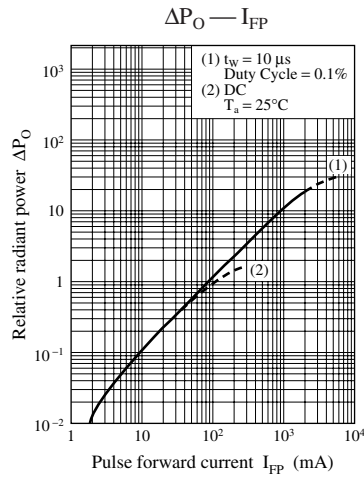
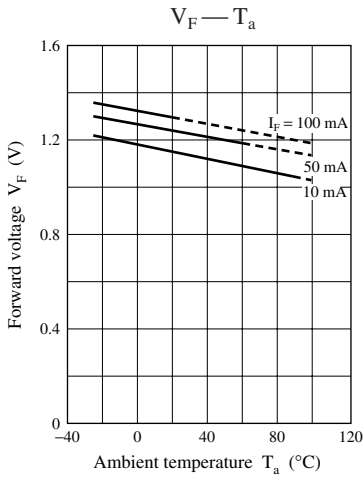
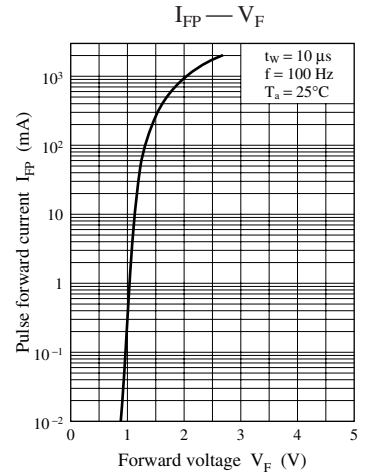
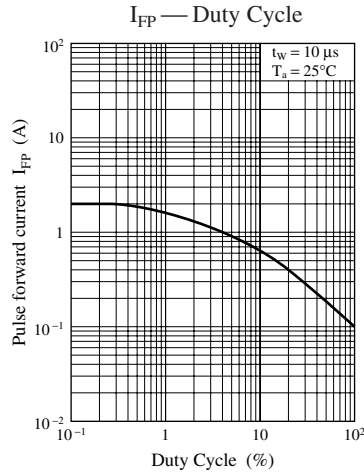
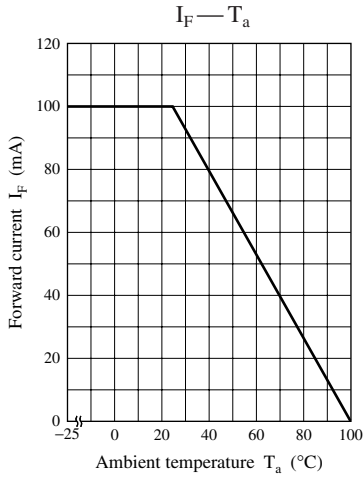
2. Cutoff frequency: 1 MHz

$$f_c: 10 \times \log \frac{P_O \text{ at } f = f_c}{P_O \text{ at } f = 50 \text{ kHz}} = -3$$

3. *: A light detection element uses a silicon diode have proofread a load with a standard device.

Note) The part numbers in the parenthesis show conventional part number.





Caution for Safety

 **DANGER**

■ This product contains Gallium Arsenide (GaAs).

GaAs powder and vapor are hazardous to human health if inhaled or ingested. Do not burn, destroy, cut, cleave off, or chemically dissolve the product. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.

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