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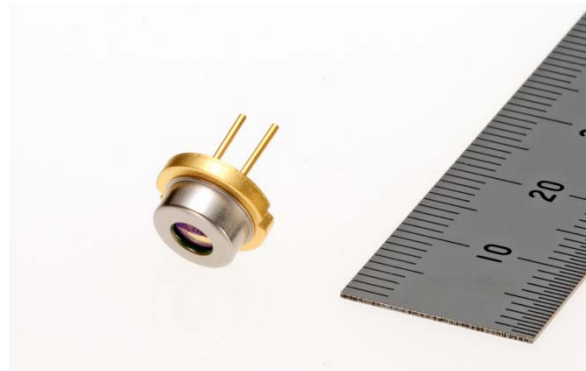
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## **Mitsubishi Electric to Launch Red Laser Diode for Projectors**

*Emits industry-leading output power*

**TOKYO, June 24, 2015** – [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today that it will launch a 638-nanometer-(nm)-wavelength red laser diode (LD) offering pulse operation output power of 2.5 W, the world's highest level among 638-nm LDs used as light sources for projectors. Sales will begin this September 1. The 638-nm red laser light and highly efficient operation of the LD contributes to the laser projectors with the wide color expression range and low power consumption.



ML562G84 638-nm-wavelength high power red laser diode

### **Product Features**

- 1) ***Unprecedented output power of 2.5 W at 638 nm under pulse operation due to improved LD structure***
  - High output power despite small package due to optimized layer structure and emitting-region size
  - Pulse output power of 2.5 W is currently the world's highest in the 638-nm band
  - Pulse operation of up to 40% duty ratio (ratio of light ON time to whole time)
  - Luminosity in red color from single light source exceeds 120 lumens due to lasing at short wavelength
  - World's recorded electrical conversion efficiency of 39% at 2.5 W at 25 degrees Celsius, helping to reduce power consumption

2) **Wide operational temperature range thanks to new package**

- Good heat dissipation due to use of a new transistor-outline can (TO-CAN) package with a diameter of 9.0 mm
- Emits 2.5 W under pulse operation within an operating range of 0 to 45 degrees Celsius

**Main Specifications**

	Specification
Model number	ML562G84
Lasing mode	Lateral multi-mode
Threshold current	780 mA ( $T_C^* = 25^\circ\text{C}$ , Pulse duty ratio = 30%)
Pulse peak output power	2.5 W ( $T_C = 25^\circ\text{C}$ , $I_{op}^{**} = 2.8$ A, Pulse duty ratio = 30%)
Operating voltage	2.4 V ( $T_C = 25^\circ\text{C}$ , $I_{op} = 2.8$ A, Pulse duty ratio = 30%)
Wavelength	638 nm ( $T_C = 25^\circ\text{C}$ , $I_{op} = 2.8$ A, Pulse duty ratio = 30%)
Operating case temperature	$T_C = 0^\circ\text{C} - 45^\circ\text{C}$ ( $Po^{***} = 2.5$ W, Pulse duty ratio = 30%)
Package	Diameter 9.0 mm TO-CAN

\* $T_C$ : case temperature

\*\* $I_{op}$ : pulse peak current

\*\*\* $Po$ : pulse peak output power

The light sources for projectors, conventionally mercury and xenon lamps, are being replaced with solid-state light sources that offer higher energy efficiency, wider color expression range and longer life. Especially, LDs deliver high output power while consuming low power because of their high power-conversion efficiency, widest color gamut due to the narrow spectrum, and superior picture quality with high contrast ratio.

Previously, the output power of red LDs with wavelengths shorter than 640 nm was not sufficient for high-brightness projector applications at high temperatures. As a first step toward overcoming this limitation, Mitsubishi Electric applied specialized window-mirror structures and epitaxial growth technology to develop an LD capable of 1.0-W power output under pulse operation, which was packaged in a 5.6-mm-diameter TO-CAN. The new LD structure was applied in a 9.0-mm TO-CAN package to achieve industry-leading output power of 2.5 W with a 638-nm lasing wavelength, which meets the demands for bright projector systems.

There are two types of laser projection system with spatial light modulators (SLMs). One is a single SLM type, which uses red, green, and blue (RGB) laser sources under sequential pulse to express RGB pictures to get real color pictures. The other has three SLM devices, which uses the light sources under CW. Projectors using a pulse light source can be expected to be brought to the market relatively quickly. The newly released red LD is suitable for the red light source of the single SLM projectors.

**Environmental Awareness**

The product is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU.

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### **About Mitsubishi Electric Corporation**

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,323.0 billion yen (US\$ 36.0 billion\*) in the fiscal year ended March 31, 2015. For more information visit:

<http://www.MitsubishiElectric.com>

\*At an exchange rate of 120 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2015