



| PARTS TABLE     |   |            |
|-----------------|---|------------|
| PART            | COLOR, LUMINOUS INTENSITY                             | TECHNOLOGY |
| VLMS30J1L2-GS08 | Super red, $I_V = (4.5 \text{ to } 18) \text{ mcd}$   | AllnGaP    |
| VLMS30J1L2-GS18 | Super red, $I_V = (4.5 \text{ to } 18) \text{ mcd}$   | AllnGaP    |
| VLMS30J2K2-GS08 | Super red, $I_V = (5.6 \text{ to } 11.2) \text{ mcd}$ | AllnGaP    |
| VLMS30J2K2-GS18 | Super red, $I_V = (5.6 \text{ to } 11.2) \text{ mcd}$ | AllnGaP    |
| VLMS30K2L2-GS08 | Super red, $I_V = (9 \text{ to } 18) \text{ mcd}$     | AllnGaP    |
| VLMO3000-GS08   | Orange, $I_V > 5.6 \text{ mcd}$                       | AllnGaP    |
| VLMO3000-GS18   | Orange, $I_V > 5.6 \text{ mcd}$                       | AllnGaP    |
| VLMO30K1L2-GS08 | Orange, $I_V = (7.1 \text{ to } 18) \text{ mcd}$      | AllnGaP    |
| VLMO30K1L2-GS18 | Orange, $I_V = (7.1 \text{ to } 18) \text{ mcd}$      | AllnGaP    |
| VLMO30L1M2-GS08 | Orange, $I_V = (11.2 \text{ to } 28) \text{ mcd}$     | AllnGaP    |
| VLMO30L1M2-GS18 | Orange, $I_V = (11.2 \text{ to } 28) \text{ mcd}$     | AllnGaP    |
| VLMO30K1M2-GS08 | Orange, $I_V = (7.1 \text{ to } 28) \text{ mcd}$      | AllnGaP    |
| VLMO30K1M2-GS18 | Orange, $I_V = (7.1 \text{ to } 28) \text{ mcd}$      | AllnGaP    |
| VLMY3000-GS08   | Yellow, $I_V > 4.5 \text{ mcd}$                       | AllnGaP    |
| VLMY3000-GS18   | Yellow, $I_V > 4.5 \text{ mcd}$                       | AllnGaP    |
| VLMY3001GS08    | Yellow, $I_V = (7.1 \text{ to } 18) \text{ mcd}$      | AllnGaP    |
| VLMY3001-GS18   | Yellow, $I_V = (7.1 \text{ to } 18) \text{ mcd}$      | AllnGaP    |
| VLMY30J2L1-GS08 | Yellow, $I_V = (5.6 \text{ to } 14) \text{ mcd}$      | AllnGaP    |
| VLMY30J2L1-GS18 | Yellow, $I_V = (5.6 \text{ to } 14) \text{ mcd}$      | AllnGaP    |
| VLMY30K2M1-GS08 | Yellow, $I_V = (9 \text{ to } 22.4) \text{ mcd}$      | AllnGaP    |
| VLMY30K2M1-GS18 | Yellow, $I_V = (9 \text{ to } 22.4) \text{ mcd}$      | AllnGaP    |
| VLMY30J2M1-GS08 | Yellow, $I_V = (5.6 \text{ to } 22.4) \text{ mcd}$    | AllnGaP    |
| VLMY30J2M1-GS18 | Yellow, $I_V = (5.6 \text{ to } 22.4) \text{ mcd}$    | AllnGaP    |

| ABSOLUTE MAXIMUM RATINGS <sup>1)</sup> VLM30.. |  |            |               |      |
|--|--|------------|---------------|------|
| PARAMETER                                      | TEST CONDITION                                       | SYMBOL     | VALUE         | UNIT |
| Reverse voltage <sup>2)</sup>                  |  | $V_R$      | 6             | V    |
| DC forward current                             |  | $I_F$      | 15            | mA   |
| Surge forward current                          | $t_p \leq 10 \mu\text{s}$                            | $I_{FSM}$  | 0.1           | A    |
| Power dissipation                              |  | $P_V$      | 40            | mW   |
| Junction temperature                           |  | $T_j$      | 125           | °C   |
| Operating temperature range                    |  | $T_{amb}$  | - 40 to + 100 | °C   |
| Storage temperature range                      |  | $T_{stg}$  | - 40 to + 100 | °C   |
| Thermal resistance junction/ambient            | Mounted on PC board (pad size > 16 mm <sup>2</sup> ) | $R_{thJA}$ | 400           | K/W  |

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ °C}$ , unless otherwise specified

<sup>2)</sup> Driving the LED in reverse direction is suitable for short term application

**OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>1)</sup> VLMS30..., RED**

| PARAMETER                        | TEST CONDITION         | PART       | SYMBOL      | MIN. | TYP.     | MAX. | UNIT |
|----------------------------------|------------------------|------------|-------------|------|----------|------|------|
| Luminous intensity <sup>2)</sup> | $I_F = 2 \text{ mA}$   | VLMS3000   | $I_V$       | 2.8  |          |      | mcd  |
|                                  | $I_F = 10 \text{ mA}$  | VLMS3000   | $I_V$       |      | 20       |      | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMS30J1K2 | $I_V$       | 4.5  |          | 11.2 | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMS30K1L2 | $I_V$       | 7.1  |          | 18   | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMS30J1L2 | $I_V$       | 4.5  |          | 18   | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMS30J2K2 | $I_V$       | 5.6  |          | 11.2 | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMS30K2L2 | $I_V$       | 9    |          | 18   | mcd  |
| Dominant wavelength              | $I_F = 2 \text{ mA}$   |            | $\lambda_d$ | 624  |          | 636  | nm   |
| Peak wavelength                  | $I_F = 2 \text{ mA}$   |            | $\lambda_p$ |      | 635      |      | nm   |
| Angle of half intensity          | $I_F = 2 \text{ mA}$   |            | $\phi$      |      | $\pm 60$ |      | deg  |
| Forward voltage                  | $I_F = 2 \text{ mA}$   |            | $V_F$       |      | 1.8      | 2.2  | V    |
| Reverse voltage                  | $I_R = 10 \mu\text{A}$ |            | $V_R$       | 6    | 15       |      | V    |

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified<sup>2)</sup> In one packing unit  $I_{Vmax}/I_{Vmin} \leq 1.6$ **OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>1)</sup> VLMO30..., ORANGE**

| PARAMETER                        | TEST CONDITION         | PART       | SYMBOL      | MIN. | TYP.     | MAX. | UNIT |
|----------------------------------|------------------------|------------|-------------|------|----------|------|------|
| Luminous intensity <sup>2)</sup> | $I_F = 2 \text{ mA}$   | VLMO3000   | $I_V$       | 5.6  |          |      | mcd  |
|                                  | $I_F = 10 \text{ mA}$  | VLMO3000   | $I_V$       |      | 50       |      | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMO30K1L2 | $I_V$       | 7.1  |          | 18   | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMO30L1M2 | $I_V$       | 11.2 |          | 28   | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMO30K1M2 | $I_V$       | 7.1  |          | 28   | mcd  |
| Dominant wavelength              | $I_F = 2 \text{ mA}$   |            | $\lambda_d$ | 600  |          | 609  | nm   |
| Peak wavelength                  | $I_F = 2 \text{ mA}$   |            | $\lambda_p$ |      | 610      |      | nm   |
| Angle of half intensity          | $I_F = 2 \text{ mA}$   |            | $\phi$      |      | $\pm 60$ |      | deg  |
| Forward voltage                  | $I_F = 2 \text{ mA}$   |            | $V_F$       |      | 1.8      | 2.2  | V    |
| Reverse voltage                  | $I_R = 10 \mu\text{A}$ |            | $V_R$       | 6    | 15       |      | V    |

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified<sup>2)</sup> In one packing unit  $I_{Vmax}/I_{Vmin} \leq 1.6$ **OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>1)</sup> VLMY30..., YELLOW**

| PARAMETER                        | TEST CONDITION         | PART       | SYMBOL      | MIN. | TYP.     | MAX. | UNIT |
|----------------------------------|------------------------|------------|-------------|------|----------|------|------|
| Luminous intensity <sup>2)</sup> | $I_F = 2 \text{ mA}$   | VLMY3000   | $I_V$       | 4.5  |          |      | mcd  |
|                                  | $I_F = 10 \text{ mA}$  | VLMY3000   | $I_V$       |      | 50       |      | mcd  |
|                                  | $I_F = 10 \text{ mA}$  | VLMY3001   | $I_V$       | 7.1  |          | 18   | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMY30J2L1 | $I_V$       | 5.6  |          | 14   | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMY30K2M1 | $I_V$       | 9    |          | 22.4 | mcd  |
|                                  | $I_F = 2 \text{ mA}$   | VLMY30J2M1 | $I_V$       | 5.6  |          | 22.4 | mcd  |
| Dominant wavelength              | $I_F = 2 \text{ mA}$   |            | $\lambda_d$ | 581  |          | 594  | nm   |
| Peak wavelength                  | $I_F = 2 \text{ mA}$   |            | $\lambda_p$ |      | 585      |      | nm   |
| Angle of half intensity          | $I_F = 2 \text{ mA}$   |            | $\phi$      |      | $\pm 60$ |      | deg  |
| Forward voltage                  | $I_F = 2 \text{ mA}$   |            | $V_F$       |      | 1.8      | 2.2  | V    |
| Reverse voltage                  | $I_R = 10 \mu\text{A}$ |            | $V_R$       | 6    | 15       |      | V    |

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified<sup>2)</sup> In one packing unit  $I_{Vmax}/I_{Vmin} \leq 1.6$



| LUMINOUS INTENSITY CLASSIFICATION |                       |      |      |
|-----------------------------------|-----------------------|------|------|
| GROUP                             | LIGHT INTENSITY (mcd) |      |      |
| STANDARD                          | OPTIONAL              | MIN. | MAX. |
| H                                 | 1                     | 2.8  | 3.55 |
|                                   | 2                     | 3.55 | 4.5  |
| J                                 | 1                     | 4.5  | 5.6  |
|                                   | 2                     | 5.6  | 7.1  |
| K                                 | 1                     | 7.1  | 9.0  |
|                                   | 2                     | 9.0  | 11.2 |
| L                                 | 1                     | 11.2 | 14.0 |
|                                   | 2                     | 14.0 | 18.0 |
| M                                 | 1                     | 18.0 | 22.4 |
|                                   | 2                     | 22.4 | 28.0 |

Note:

Luminous Intensity is tested at a current pulse duration of 25 ms and an accuracy of  $\pm 11\%$ . The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped in one reel (there will be no mixing of two groups on each reel). In order to ensure availability, single brightness groups will not be orderable. In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped in any one reel. In order to ensure availability, single wavelength groups will not be orderable.

| COLOR CLASSIFICATION |                      |      |        |      |
|----------------------|----------------------|------|--------|------|
| GROUP                | YELLOW               |      | ORANGE |      |
|                      | DOM. WAVELENGTH (nm) |      |        |      |
|                      | MIN.                 | MAX. | MIN.   | MAX. |
| 1                    | 581                  | 584  |        |      |
| 2                    | 583                  | 586  | 600    | 603  |
| 3                    | 585                  | 588  | 602    | 605  |
| 4                    | 587                  | 590  | 604    | 607  |
| 5                    | 589                  | 592  | 606    | 609  |
| 6                    | 591                  | 594  |        |      |

Note:

Wavelengths are tested at a current pulse duration of 25 ms and an accuracy of  $\pm 1$  nm.

| CROSSING TABLE |             |
|----------------|-------------|
| VISHAY         | OSRAM       |
| VLMO30K1L2     | LOT67K-K1L2 |
| VLMO30K1M2     | LOT67K-K1M2 |
| VLMO30L1M2     | LOT67K-L1M2 |
| VLMS30J1K2     | LST67K-J1K2 |
| VLMS30J1L2     | LST67K-J1L2 |
| VLMS30K1L2     | LST67K-K1L2 |
| VLMY30J2L1     | LYT67K-J2L1 |
| VLMY30J2M1     | LYT67K-J2M1 |
| VLMY30K2M1     | LYT67K-K2M1 |

### TYPICAL CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$ , unless otherwise specified

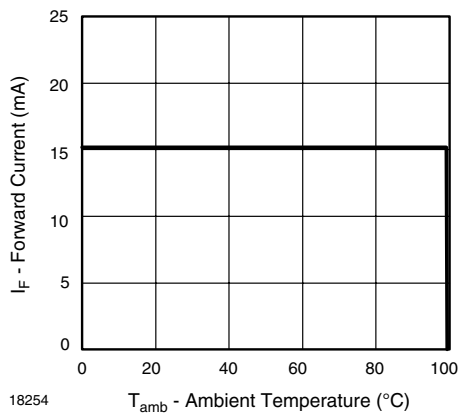


Figure 1. Forward Current vs. Ambient Temperature

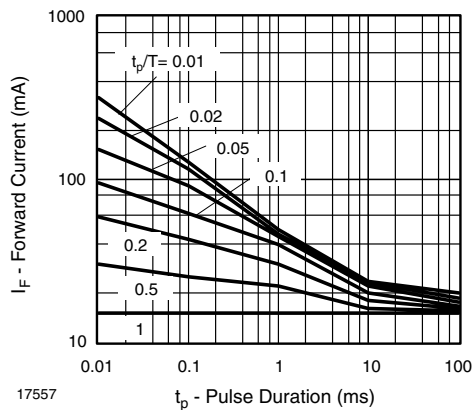


Figure 2. Forward Current vs. Pulse Length



Figure 3. Rel. Luminous Intensity vs. Angular Displacement



Figure 6. Rel. Luminous Intensity vs. Ambient Temperature



Figure 4. Relative Intensity vs. Wavelength

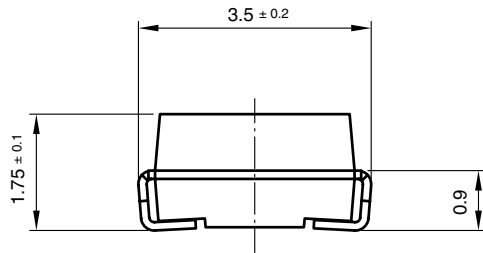


Figure 7. Forward Voltage vs. Ambient Temperature

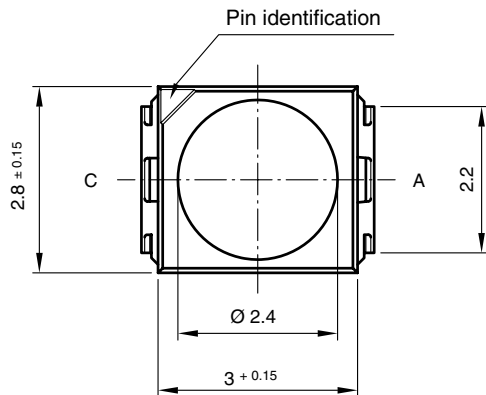


Figure 5. Forward Current vs. Forward Voltage

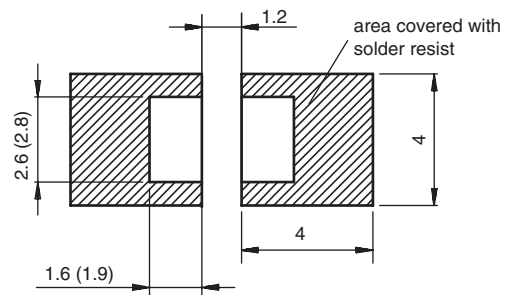
### PACKAGE DIMENSIONS in millimeters



technical drawings  
according to DIN  
specifications



### Mounting Pad Layout



Drawing-No.: 6.541-5067.01-4  
Issue: 5; 04.11.08  
20541

**METHOD OF TAPING/POLARITY AND TAPE AND REEL**

**SMD LED (VLM.3 - SERIES)**

Vishay's LEDs in SMD packages are available in an antistatic 8 mm blister tape (in accordance with DIN IEC 40 (CO) 564) for automatic component insertion. The blister tape is a plastic strip with impressed component cavities, covered by a top tape.



**REEL PACKAGE DIMENSION IN MILLIMETERS FOR SMD LEDs, TAPE OPTION GS08 (= 1500 PCS.)**

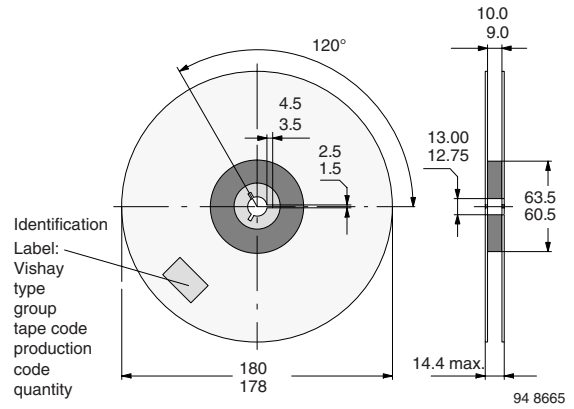


Figure 9. Reel Dimensions - GS08

**TAPING OF VLM.3...**



Figure 8. Tape Dimensions in mm for PLCC-2

**REEL PACKAGE DIMENSION IN MILLIMETERS FOR SMD LEDs, TAPE OPTION GS18 (= 8000 PCS.) PREFERRED**

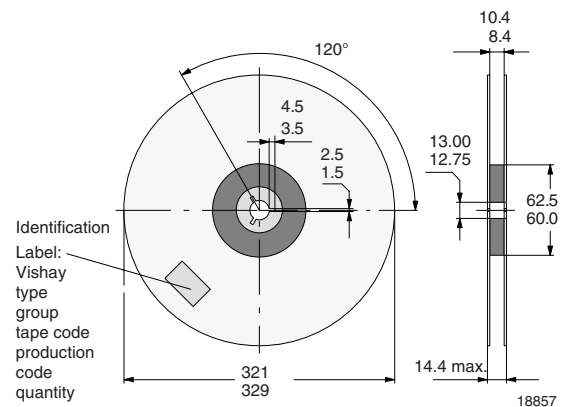


Figure 10. Reel Dimensions - GS18

### SOLDERING PROFILE

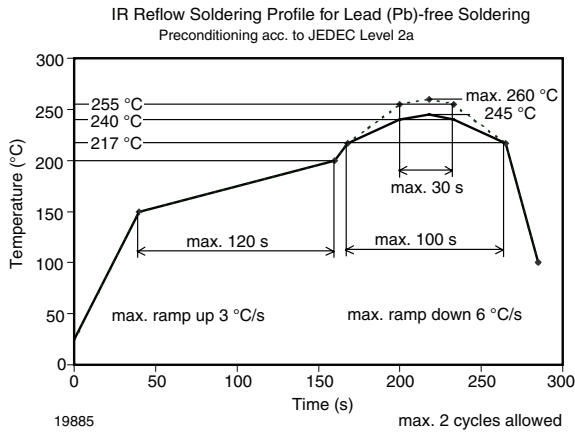


Figure 11. Vishay Lead (Pb)-free Reflow Soldering Profile (acc. to J-STD-020)

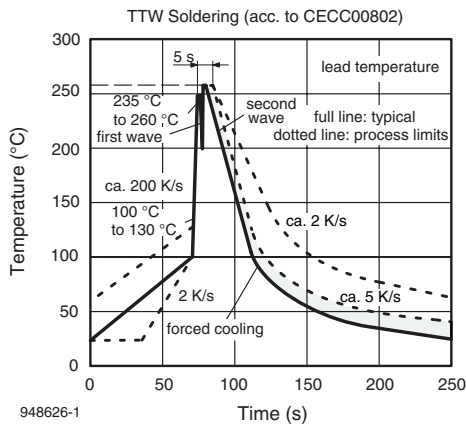
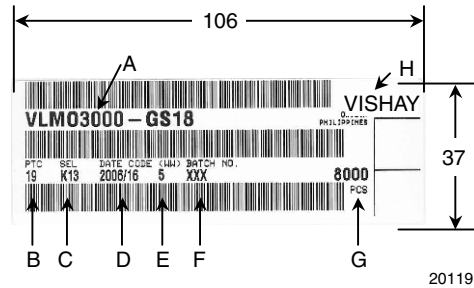


Figure 12. Double Wave Soldering of Opto Devices (all Packages)

### BAR CODE PRODUCT LABEL EXAMPLE:



- A) Type of component
- B) Manufacturing plant
- C) SEL - selection code (bin):  
e.g.: K1 = code for luminous intensity group  
3 = code for color group
- D) Date code year/week
- E) Day code (e.g. 5: Friday)
- F) Batch no.
- G) Total quantity
- H) Company code





## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А