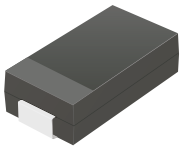
# TV15C5V0-G Thru. TV15C441-G

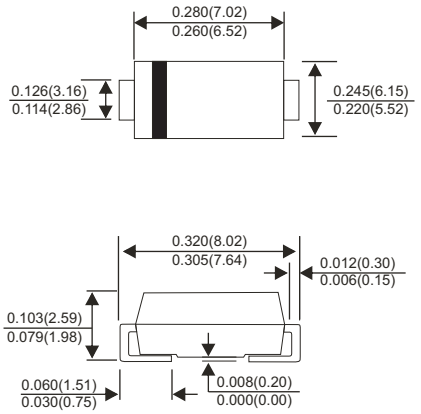
## Working Peak Reverse Voltage: 5.0 to 440 Volts
## Power Dissipation: 1500Watts
## RoHS Device



## Features

- Glass passivated chip.
- 1500W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle):0.01%
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- UL recognized file # E349157
  Range: TV15C5V0J(B) thru. TV15C101J(B)

**SMC/DO-214AB**

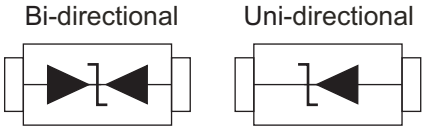



Dimensions in inches and (millimeter)

## Mechanical Data

- Case: DO-214AB/SMC molded plastic.
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denoted cathode end except bipolar.
- Weight: 0.230 gram (approx.)

## Circuit Diagram




## Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristics | Symbol | Value | Units |
|---|---|---|---|
| Peak power dissipation at 10/1000μS waveform (Notes.1) | $P_{PPM}$ | 1500 | W |
| Peak pulse current at 10/1000μS waveform (Notes.1) | $I_{PPM}$ | See table 1 | A |
| Steady state power dissipation at $T_L$=75°C | $P_D$ | 6.5 | W |
| Peak forward surge current, 8.3mS single half sine-wave superimposed on rated load, uni-directional only (Notes.2) | $I_{FSM}$ | 200 | A |
| Maximum instantaneous forward voltage at 100A for uni-directional only (Note.3) | $V_F$ | 3.5/5.0 | V |
| Operation junction temperature range | $T_J$ | -55 to +150 | °C |
| Storage temperature range | $T_{STG}$ | -55 to +150 | °C |

Notes:

1. Non-repetitive current pulse, per Fig. 5 and derated above $T_A$=25 °C, per Fig. 1
2. Measured on 8.3 ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
3. $V_F$<3.5V for devices of $V_{BR}$<200V and $V_F$<5.0V for devices of $V_{BR}$>201V

Company reserves the right to improve product design , functions and reliability without notice.

## Ratings and Characteristics Curve (TV15C5V0-G Thru. TV15C441-G)

Fig.1 - Pulse Derating Curve

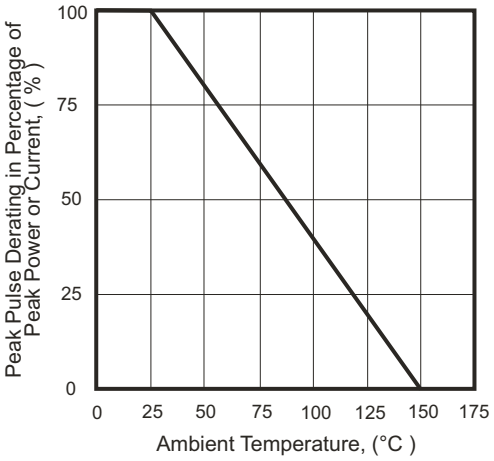



Fig.2 - Max. Non-Repetitive Surge Current

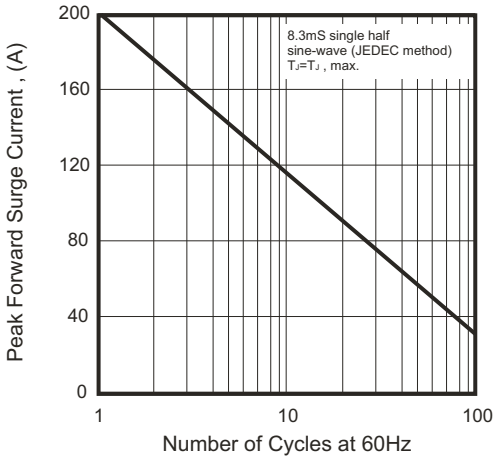



Fig.3 - Steady State Power Derating Curve

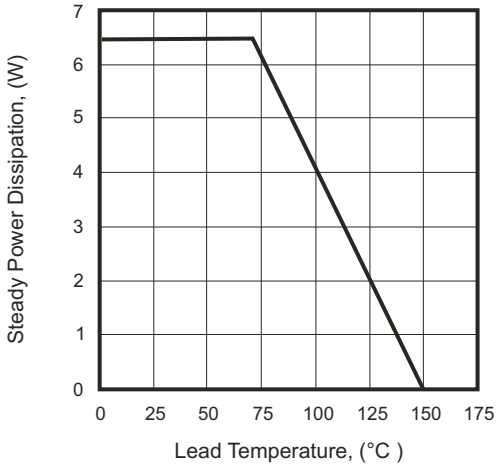



Fig.4 - Peak Pulse Power Rating Curve

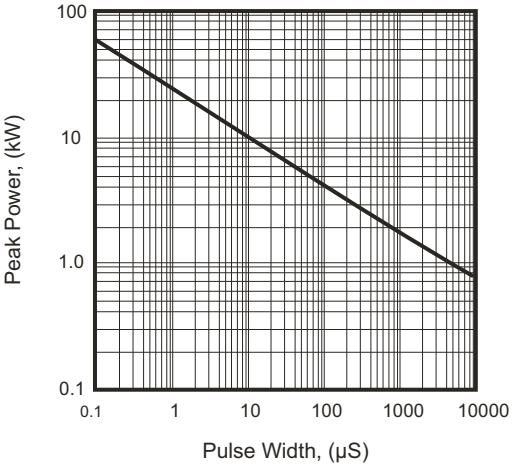



Fig.5 - Pulse Waveforem

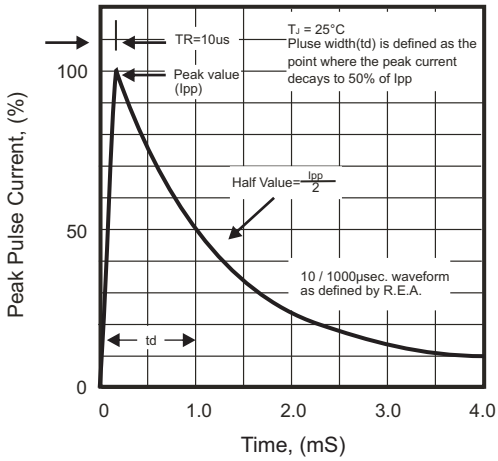
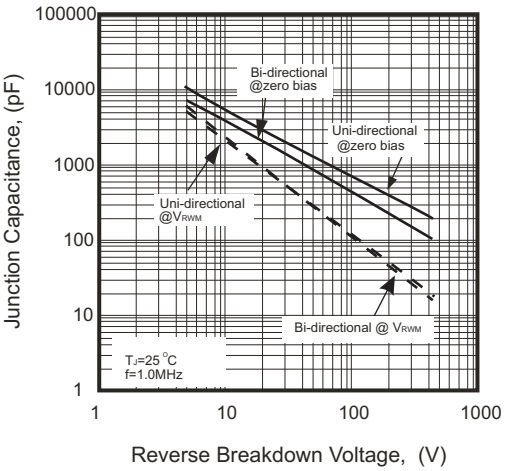



Fig.6 - Typical Junction Capacitance



## Electrical Characteristics (TV15C5V0-G Thru. TV15C441-G)

| Part No. | Breakdown voltage $V_{BR}$ @ $I_T$ | | | Maximum Reverse Leakage @$V_{RWM}$ | Working Peak Reverse Voltage | Maximum Reverse Surge Current | Maximum Clamping Voltage @$I_{PP}$ | Device Marking Code | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. (V) | Max. (V) | $I_T$ (mA) | $I_R$ (uA) | $V_{RWM}$ (V) | $I_{PP}$ (A) | $V_C$ (V) | UNI | BI |
| TV15C5V0J(B)-G | 6.40 | 7.00 | 10 | 800 | 5.0 | 163.04 | 9.2 | GDE | BDE |
| TV15C6V0J(B)-G | 6.67 | 7.37 | 10 | 800 | 6.0 | 145.63 | 10.3 | GDG | BDG |
| TV15C6V5J(B)-G | 7.22 | 7.98 | 10 | 500 | 6.5 | 133.93 | 11.2 | GDK | BDK |
| TV15C7V0J(B)-G | 7.78 | 8.60 | 10 | 200 | 7.0 | 125.00 | 12.0 | GDM | BDM |
| TV15C7V5J(B)-G | 8.33 | 9.21 | 1 | 100 | 7.5 | 116.28 | 12.9 | GDP | BDP |
| TV15C8V0J(B)-G | 8.89 | 9.83 | 1 | 50 | 8.0 | 110.29 | 13.6 | GDR | BDR |
| TV15C8V5J(B)-G | 9.44 | 10.40 | 1 | 20 | 8.5 | 104.17 | 14.4 | GDT | BDT |
| TV15C9V0J(B)-G | 10.00 | 11.10 | 1 | 10 | 9.0 | 97.40 | 15.4 | GDV | BDV |
| TV15C100J(B)-G | 11.10 | 12.30 | 1 | 5.0 | 10.0 | 88.24 | 17.0 | GDX | BDX |
| TV15C110J(B)-G | 12.20 | 13.50 | 1 | 1.0 | 11.0 | 82.42 | 18.2 | GDZ | BDZ |
| TV15C120J(B)-G | 13.30 | 14.70 | 1 | 1.0 | 12.0 | 75.38 | 19.9 | GEE | BEE |
| TV15C130J(B)-G | 14.40 | 15.90 | 1 | 1.0 | 13.0 | 69.77 | 21.5 | GEG | BEG |
| TV15C140J(B)-G | 15.60 | 17.20 | 1 | 1.0 | 14.0 | 64.66 | 23.2 | GEK | BEK |
| TV15C150J(B)-G | 16.70 | 18.50 | 1 | 1.0 | 15.0 | 61.48 | 24.4 | GEM | BEM |
| TV15C160J(B)-G | 17.80 | 19.70 | 1 | 1.0 | 16.0 | 57.69 | 26.0 | GEP | BEP |
| TV15C170J(B)-G | 18.90 | 20.90 | 1 | 1.0 | 17.0 | 54.35 | 27.6 | GER | BER |
| TV15C180J(B)-G | 20.00 | 22.10 | 1 | 1.0 | 18.0 | 51.37 | 29.2 | GET | BET |
| TV15C190J(B)-G | 21.10 | 23.30 | 1 | 1.0 | 19.0 | 48.73 | 30.8 | GEB | BEB |
| TV15C200J(B)-G | 22.20 | 24.50 | 1 | 1.0 | 20.0 | 46.30 | 32.4 | GEV | BEV |
| TV15C220J(B)-G | 24.40 | 26.90 | 1 | 1.0 | 22.0 | 42.25 | 35.5 | GEX | BEX |
| TV15C240J(B)-G | 26.70 | 29.50 | 1 | 1.0 | 24.0 | 38.56 | 38.9 | GEZ | BEZ |
| TV15C260J(B)-G | 28.90 | 31.90 | 1 | 1.0 | 26.0 | 35.63 | 42.1 | GFE | BFE |
| TV15C280J(B)-G | 31.10 | 34.40 | 1 | 1.0 | 28.0 | 33.04 | 45.4 | GFG | BFG |
| TV15C300J(B)-G | 33.30 | 36.80 | 1 | 1.0 | 30.0 | 30.99 | 48.4 | GFK | BFK |
| TV15C330J(B)-G | 36.70 | 40.60 | 1 | 1.0 | 33.0 | 28.14 | 53.3 | GFM | BFM |
| TV15C360J(B)-G | 40.00 | 44.20 | 1 | 1.0 | 36.0 | 25.82 | 58.1 | GFP | BFP |
| TV15C400J(B)-G | 44.40 | 49.10 | 1 | 1.0 | 40.0 | 23.26 | 64.5 | GFR | BFR |
| TV15C430J(B)-G | 47.80 | 52.80 | 1 | 1.0 | 43.0 | 21.61 | 69.4 | GFT | BFT |
| TV15C450J(B)-G | 50.00 | 55.30 | 1 | 1.0 | 45.0 | 20.63 | 72.7 | GFV | BFV |
| TV15C480J(B)-G | 53.30 | 58.90 | 1 | 1.0 | 48.0 | 19.38 | 77.4 | GFX | BFX |
| TV15C510J(B)-G | 56.70 | 62.70 | 1 | 1.0 | 51.0 | 18.20 | 82.4 | GFZ | BFZ |
| TV15C540J(B)-G | 60.00 | 66.30 | 1 | 1.0 | 54.0 | 17.22 | 87.1 | GGE | BGE |
| TV15C580J(B)-G | 64.40 | 71.20 | 1 | 1.0 | 58.0 | 16.03 | 93.6 | GGG | BGG |
| TV15C600J(B)-G | 66.70 | 73.70 | 1 | 1.0 | 60.0 | 15.50 | 96.8 | GGK | BGK |
| TV15C640J(B)-G | 71.10 | 78.60 | 1 | 1.0 | 64.0 | 14.56 | 103.0 | GGM | BGM |
| TV15C700J(B)-G | 77.80 | 86.00 | 1 | 1.0 | 70.0 | 13.27 | 113.0 | GGP | BGP |
| TV15C750J(B)-G | 83.30 | 92.10 | 1 | 1.0 | 75.0 | 12.40 | 121.0 | GGR | BGR |
| TV15C780J(B)-G | 86.70 | 95.80 | 1 | 1.0 | 78.0 | 11.90 | 126.0 | GGT | BGT |
| TV15C800J(B)-G | 88.80 | 97.60 | 1 | 1.0 | 80.0 | 11.57 | 129.6 | GGB | BGB |
| TV15C850J(B)-G | 94.40 | 104.00 | 1 | 1.0 | 85.0 | 10.95 | 137.0 | GGV | BGV |
| TV15C900J(B)-G | 100.00 | 111.00 | 1 | 1.0 | 90.0 | 10.27 | 146.0 | GGX | BGX |
| TV15C101J(B)-G | 111.00 | 123.00 | 1 | 1.0 | 100.0 | 9.26 | 162.0 | GGZ | BGZ |
| TV15C111J(B)-G | 122.00 | 135.00 | 1 | 1.0 | 110.0 | 8.47 | 177.0 | GHE | BHE |
| TV15C121J(B)-G | 133.00 | 147.00 | 1 | 1.0 | 120.0 | 7.77 | 193.0 | GHG | BHG |

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## Electrical Characteristics (TV15C5V0-G Thru. TV15C441-G)

| Part No. | Breakdown voltage $V_{BR}$ @ $I_T$ | | | Maximum Reverse Leakage @$V_{RWM}$ | Working Peak Reverse Voltage | Maximum Reverse Surge Current | Maximum Clamping Voltage @$I_{PP}$ | Device Marking Code | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. (V) | Max. (V) | $I_T$ (mA) | $I_R$ (uA) | $V_{RWM}$ (V) | $I_{PP}$ (A) | $V_C$ (V) | UNI | BI |
| TV15C131J(B)-G | 144.0 | 159.0 | 1 | 1.0 | 130.0 | 7.18 | 209.0 | GHK | BHK |
| TV15C141J(B)-G | 155.0 | 171.0 | 1 | 1.0 | 140.0 | 6.61 | 226.8 | GHB | BHB |
| TV15C151J(B)-G | 167.0 | 185.0 | 1 | 1.0 | 150.0 | 6.17 | 243.0 | GHM | BHM |
| TV15C161J(B)-G | 178.0 | 197.0 | 1 | 1.0 | 160.0 | 5.79 | 259.0 | GHP | BHP |
| TV15C171J(B)-G | 189.0 | 209.0 | 1 | 1.0 | 170.0 | 5.45 | 275.0 | GHR | BHR |
| TV15C181J(B)-G | 200.0 | 220.0 | 1 | 1.0 | 180.0 | 5.14 | 291.6 | GHT | BHT |
| TV15C191J(B)-G | 211.0 | 232.0 | 1 | 1.0 | 190.0 | 4.87 | 307.8 | GHV | BHV |
| TV15C201J(B)-G | 224.0 | 247.0 | 1 | 1.0 | 200.0 | 4.60 | 324.0 | GHW | BHW |
| TV15C221J(B)-G | 246.0 | 272.0 | 1 | 1.0 | 220.0 | 4.20 | 356.0 | GHX | BHX |
| TV15C251J(B)-G | 279.0 | 309.0 | 1 | 1.0 | 250.0 | 3.70 | 405.0 | GHZ | BHZ |
| TV15C301J(B)-G | 335.0 | 371.0 | 1 | 1.0 | 300.0 | 3.10 | 486.0 | GJE | BJE |
| TV15C351J(B)-G | 391.0 | 432.0 | 1 | 1.0 | 350.0 | 2.60 | 567.0 | GJG | BJG |
| TV15C401J(B)-G | 447.0 | 494.0 | 1 | 1.0 | 400.0 | 2.30 | 648.0 | GJK | BJK |
| TV15C441J(B)-G | 492.0 | 543.0 | 1 | 1.0 | 440.0 | 2.10 | 713.0 | GJM | BJM |

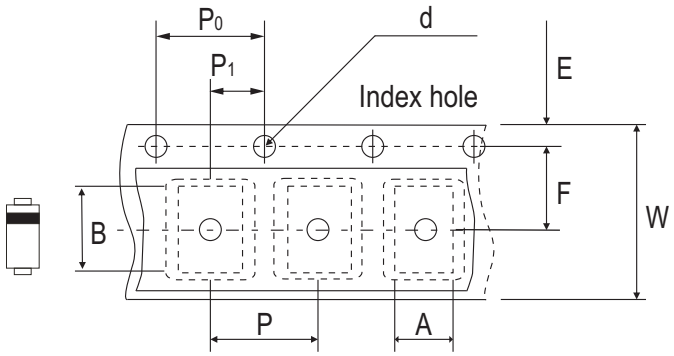
Note:

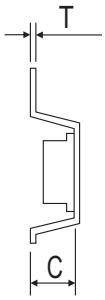
1) Suffix J denotes 5% tolerance devices.

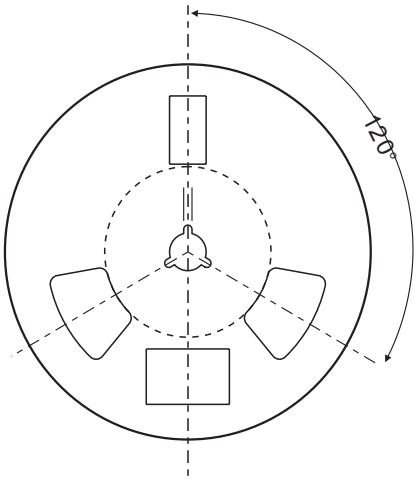
2) Suffix B after part number to specify Bi-directional devices.

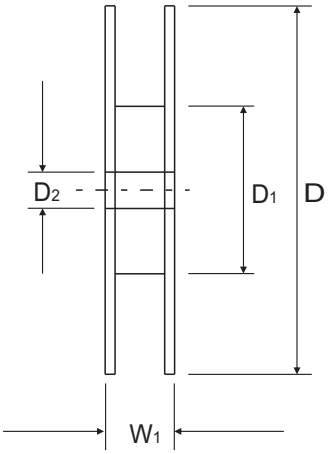
3) For Bi-Directional devices having $V_R$ of 10 volts and under, the $I_R$ limit is double.

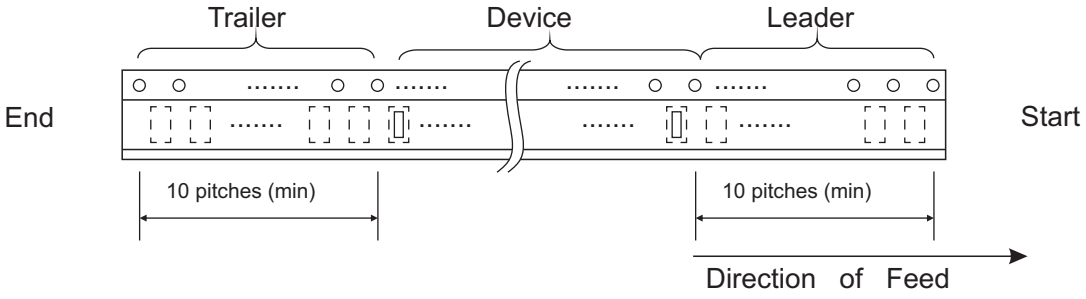
# Reel Taping Specification




| DO-214AB (SMC) | SYMBOL | A | B | C | d | D | $D_1$ | $D_2$ |
|---|---|---|---|---|---|---|---|---|
| | (mm) | 6.05 ± 0.10 | 8.31 ± 0.10 | 3.29 (max) | 1.55 ± 0.10 | 330.00 | 50.00 (min) | 13.00 ± 0.20 |
| | (inch) | 0.238 ± 0.004 | 0.327 ± 0.004 | 0.130 (max) | 0.061 ± 0.004 | 13.000 | 1.969 (min) | 0.512 ± 0.008 |

| DO-214AB (SMC) | SYMBOL | E | F | P | $P_0$ | $P_1$ | W | $W_1$ |
|---|---|---|---|---|---|---|---|---|
| | (mm) | 1.75 ± 0.10 | 7.50 ± 0.10 | 8.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 16.00 ± 0.30 | 22.40 (max) |
| | (inch) | 0.069 ± 0.004 | 0.295 ± 0.004 | 0.315 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.630 ± 0.012 | 0.882 (max) |

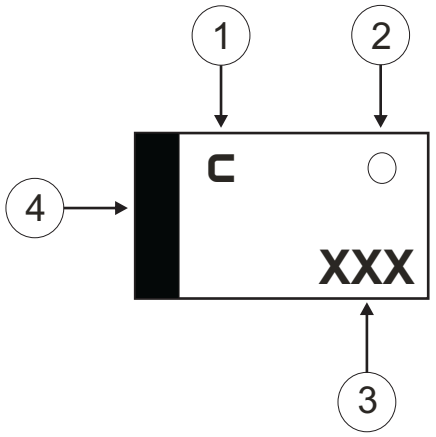
Company reserves the right to improve product design , functions and reliability without notice.

## Marking Code

1. ⊏: COMCHIP

2. ○: Package

| ○ | PKG |
|---|---|
| A | SMA |
| B | SMB |
| C | SMC |

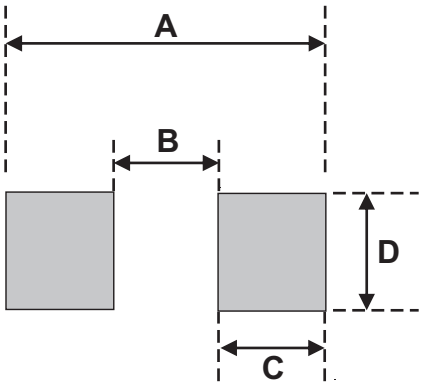



3. XXX: Marking code (see Page. 3~4)

4. ▮ : Cathod Band

## Suggested PAD Layout

| SIZE | DO-214AB(SMC) | |
|---|---|---|
| | (mm) | (inch) |
| A | 8.13 | 0.320 |
| B | 4.69 MAX | 0.185 MAX |
| C | 1.52 MIN | 0.06 MIN |
| D | 3.20 MIN | 0.126 MIN |




## Standard Packaging

| Case Type | REEL PACK | |
|---|---|---|
| | REEL ( pcs ) | Reel Size (inch) |
| DO-214AB (SMC) | 3,000 | 13 |

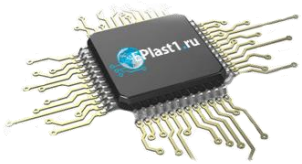
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.