



## DP0720LA&amp;DP0720SA&amp;DP0720TA

半导体放电管

版本号  
201603-A

## 产品概述

半导体放电管是一种过压保护器件，是利用晶闸管原理制成的，依靠PN结的击穿电流触发器件导通放电，可以流过很大的浪涌电流或脉冲电流。

## 产品特点

- 双向过电压电路保护
- 抗浪涌能力强
- 快速反应，可恢复
- 漏电小，可靠性高
- 低电容

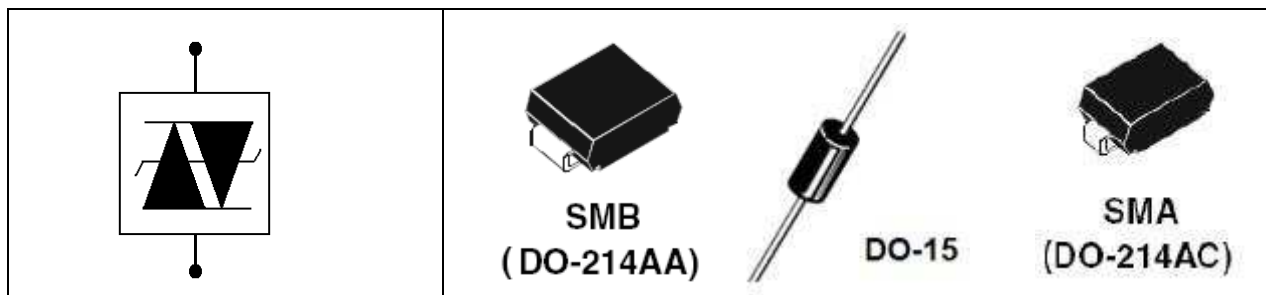
## 特征参数

## 应用领域

| 符号        | 额定值 | 单位 |
|-----------|-----|----|
| $V_{DRM}$ | 65  | V  |
| $V_S$     | 88  | V  |
| $I_H$     | 150 | mA |

DP0720半导体放电管主要应用于通讯设备的过电压防护；家用电器，工控仪器的过电压防护。

封装：SMB (DO-214AA)，DO-15，SMA (DO-214AC)



## 电参数

| 参数名称   | 符号        | 测试条件                 | 规范值 |     |     | 单位      |
|--------|-----------|----------------------|-----|-----|-----|---------|
|        |           |                      | 最小  | 典型  | 最大  |         |
| 不动作电压  | $V_{DRM}$ | $I=5\mu A$           | 65  |     |     | V       |
| 不动作电流  | $I_{DRM}$ | $V=V_{DRM}$ 额定值      |     |     | 5   | $\mu A$ |
| 跃变电压   | $V_S$     | 100KV/s              |     |     | 88  | V       |
| 跃变电流   | $I_S$     | 100KV/s              |     |     | 800 | mA      |
| 维持电流   | $I_H$     | 10A, 10/1000 $\mu s$ | 150 |     |     | mA      |
| 通态电压   | $V_T$     | $I_T=2.2A$           |     |     | 4   | V       |
| 通态电流   | $I_T$     | 额定值                  |     | 2.2 |     | A       |
| 极间电容   | $C_o$     | 1MHz, 2V偏置           |     |     | 60  | pF      |
| 峰值浪涌电流 | $I_{PP}$  | 10/1000 $\mu s$      |     |     | 50  | A       |

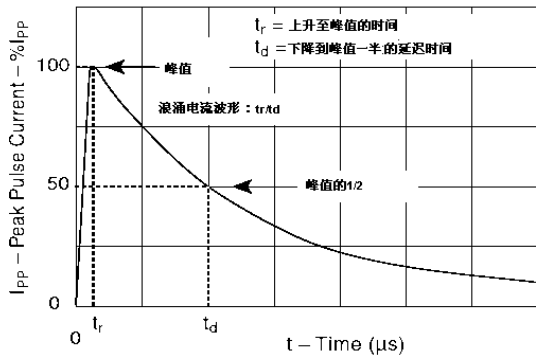
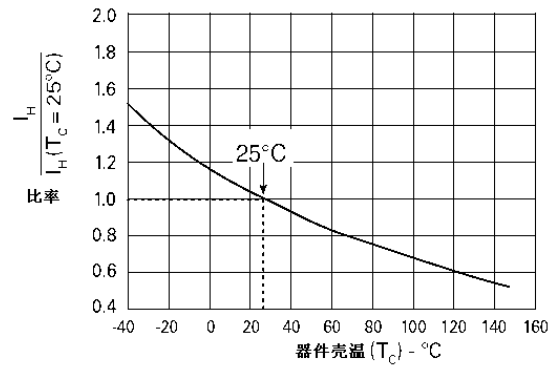
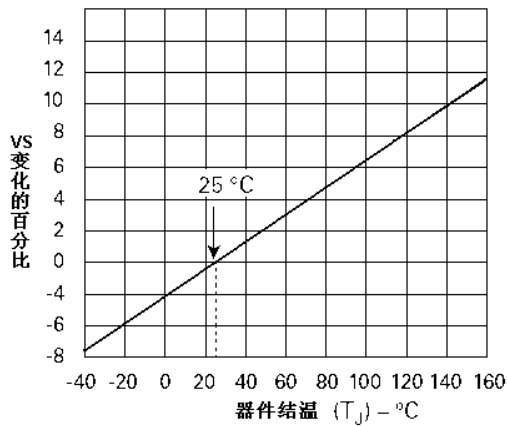
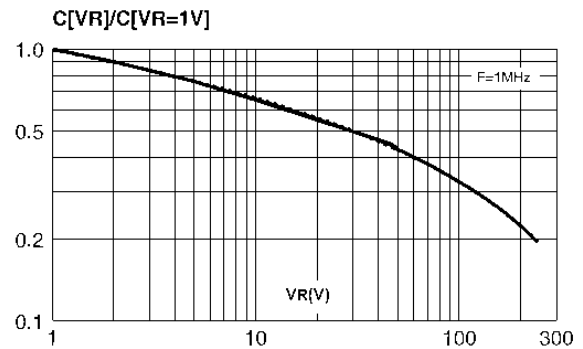


## ■ 热特性

| 符号    | 参数     | 数值       | 单位 |
|-------|--------|----------|----|
| $T_J$ | 工作结温范围 | -40~+150 | °C |
| $T_S$ | 贮存温度范围 | -65~+150 | °C |

## ■ 典型特性曲线

浪涌电流波形

 $I_H$  随温度变化率 $V_S$  随结温变化率 $C_o$  随偏置电压的变化率 (相对于  $V_R=1V$ )

## 封装尺寸

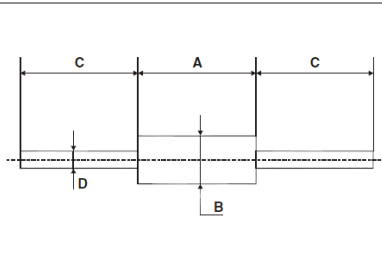
SMB  
(DO-214AA)

| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A1   | 1.90        | 2.45 | 0.075  | 0.096 |
| A2   | 0.05        | 0.20 | 0.002  | 0.008 |
| b    | 1.95        | 2.20 | 0.077  | 0.087 |
| c    | 0.15        | 0.40 | 0.006  | 0.016 |
| E    | 5.10        | 5.60 | 0.201  | 0.220 |
| E1   | 4.05        | 4.60 | 0.159  | 0.181 |
| D    | 3.30        | 3.95 | 0.130  | 0.156 |
| L    | 0.75        | 1.50 | 0.030  | 0.059 |



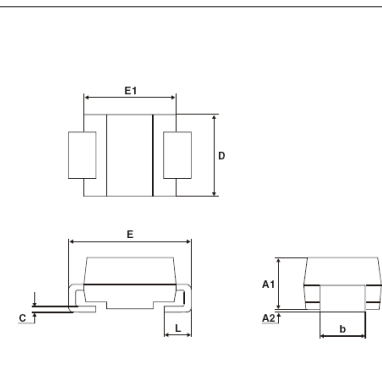


DO-15



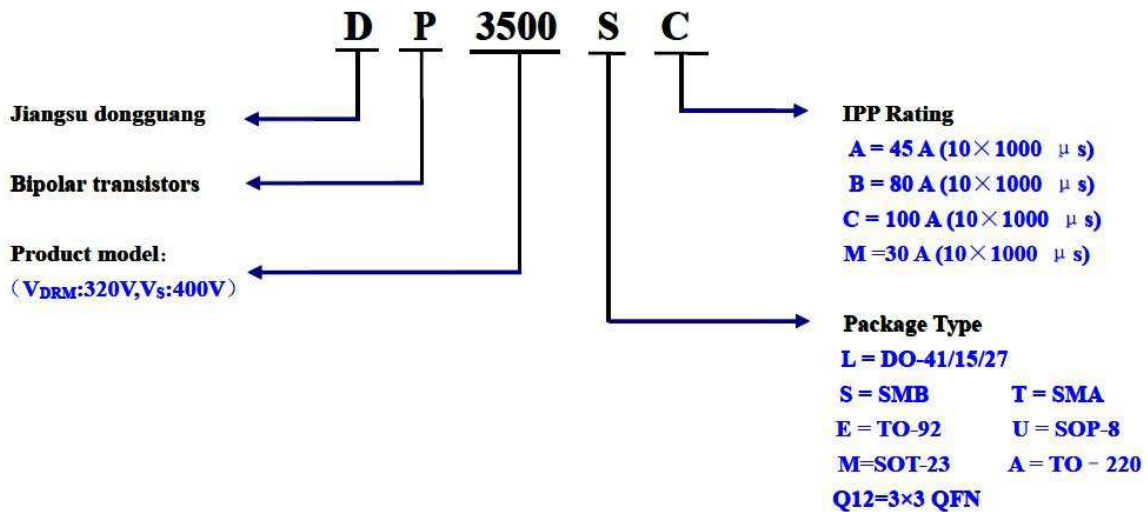
| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A    | 6.05        | 6.75 | 0.238  | 0.266 |
| B    | 2.95        | 3.53 | 0.116  | 0.139 |
| C    | 26          | 31   | 1.024  | 1.220 |
| D    | 0.71        | 0.88 | 0.028  | 0.035 |

SMA  
(DO-214AC)



| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A1   | 1.90        | 2.45 | 0.075  | 0.094 |
| A2   | 0.05        | 0.20 | 0.002  | 0.008 |
| b    | 1.25        | 1.65 | 0.049  | 0.065 |
| c    | 0.15        | 0.40 | 0.006  | 0.016 |
| D    | 2.25        | 2.90 | 0.089  | 0.114 |
| E    | 4.80        | 5.35 | 0.189  | 0.211 |
| E1   | 3.95        | 4.60 | 0.156  | 0.181 |
| L    | 0.75        | 1.50 | 0.030  | 0.059 |

命名规则





## DP0720LA&amp;DP0720SA&amp;DP0720TA



半导体放电管

版本号  
201603-A

## Description

The SDT is a kind of overvoltage protection device. It is designed at the PNP structure. High pulse current can cross SDT.

## Features and Benefits

- Low voltage and overshoot
- Low on-state voltage
- Does not degrade with use
- Fails short circuit when surged in excess of ratings
- Low capacitance

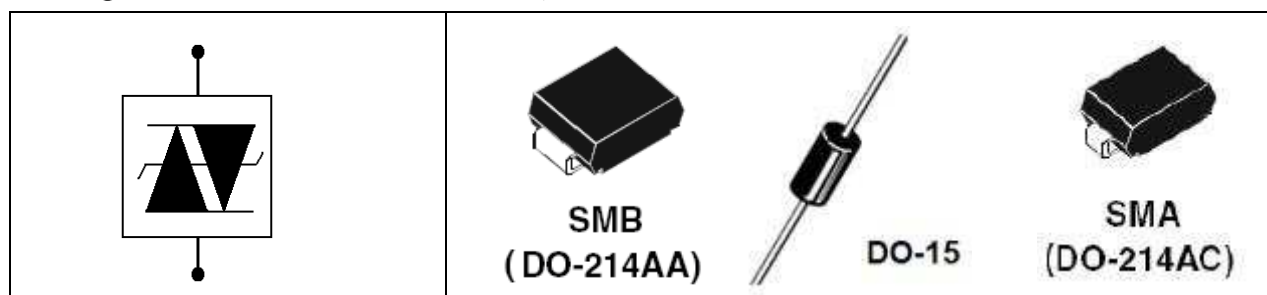
## Characteristic parameters

## 应用领域

| symbol    | Rated value | unit |
|-----------|-------------|------|
| $V_{DRM}$ | 65          | V    |
| $V_S$     | 88          | V    |
| $I_H$     | 150         | mA   |

DP0720 are designed to protect communication equipment, appliances and Industrial And Control Instrumentation Equipment from damaging overvoltage transients.

Package : SMB (DO-214AA), DO-15, SMA (DO-214AC)



## Electrical Parameters

| Parameter             | symbol    | Test conditions      | Value |      |      | unit    |
|-----------------------|-----------|----------------------|-------|------|------|---------|
|                       |           |                      | Min.  | Typ. | Max. |         |
| Leakage Voltage       | $V_{DRM}$ | $I=5\mu A$           | 65    |      |      | V       |
| Leakage Current       | $I_{DRM}$ | $V=V_{DRM}$          |       |      | 5    | $\mu A$ |
| Switching Voltage     | $V_S$     | 100KV/s              |       |      | 88   | V       |
| Switching Current     | $I_S$     | 100KV/s              |       |      | 800  | mA      |
| Holding Current       | $I_H$     | 10A, 10/1000 $\mu s$ | 150   |      |      | mA      |
| On-state Voltage      | $V_T$     | $I_T=2.2A$           |       |      | 4    | V       |
| On-state Current      | $I_T$     | Rating value         |       | 2.2  |      | A       |
| Off-state Capacitance | $C_o$     | 1MHz, 2V offset      |       |      | 60   | pF      |
| Peak Pulse Current    | $I_{PP}$  | 10/1000 $\mu s$      |       |      | 50   | A       |

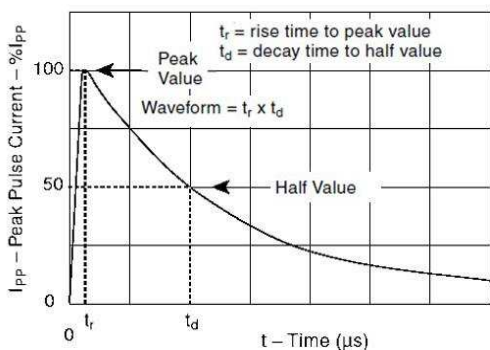


■ 热特性

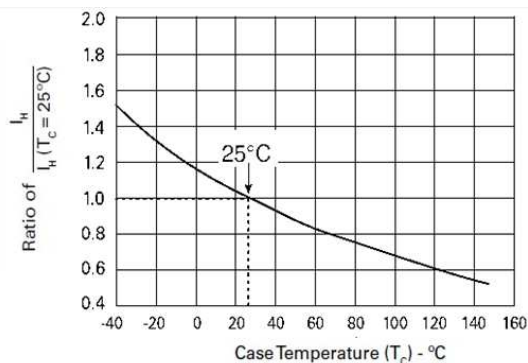
| Symbol | Parameter                      | Value    | Unit |
|--------|--------------------------------|----------|------|
| $T_J$  | Operating Junction Temperature | -40~+150 | °C   |
| $T_S$  | Storage Temperature Range      | -65~+150 | °C   |

■ Typical characteristic curve

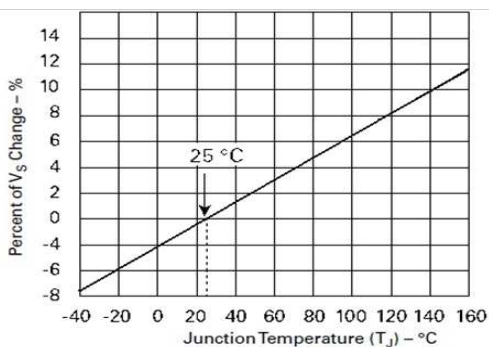
Tr x Td Pulse waveform



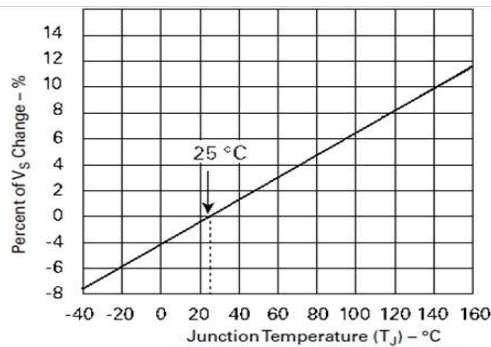
Normalized DC holding current vs. case temperature



Vs change vs. junction temperature



Co change vs. bias voltage (VR=1V)



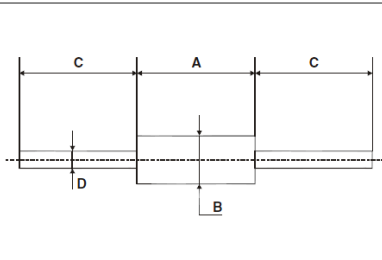
Package size

SMB  
(DO-214AA)

| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A1   | 1.90        | 2.45 | 0.075  | 0.096 |
| A2   | 0.05        | 0.20 | 0.002  | 0.008 |
| b    | 1.95        | 2.20 | 0.077  | 0.087 |
| c    | 0.15        | 0.40 | 0.006  | 0.016 |
| E    | 5.10        | 5.60 | 0.201  | 0.220 |
| E1   | 4.05        | 4.60 | 0.159  | 0.181 |
| D    | 3.30        | 3.95 | 0.130  | 0.156 |
| L    | 0.75        | 1.50 | 0.030  | 0.059 |

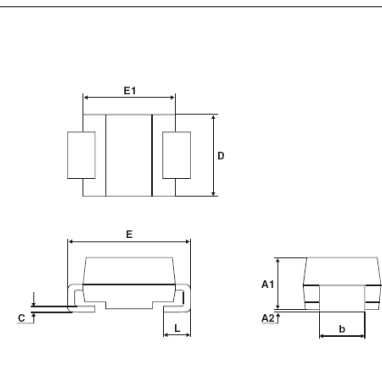


DO-15



| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A    | 6.05        | 6.75 | 0.238  | 0.266 |
| B    | 2.95        | 3.53 | 0.116  | 0.139 |
| C    | 26          | 31   | 1.024  | 1.220 |
| D    | 0.71        | 0.88 | 0.028  | 0.035 |

SMA  
(DO-214AC)



| Ref. | Dimensions  |      |        |       |
|------|-------------|------|--------|-------|
|      | Millimeters |      | Inches |       |
|      | Min.        | Max. | Min.   | Max.  |
| A1   | 1.90        | 2.45 | 0.075  | 0.094 |
| A2   | 0.05        | 0.20 | 0.002  | 0.008 |
| b    | 1.25        | 1.65 | 0.049  | 0.065 |
| c    | 0.15        | 0.40 | 0.006  | 0.016 |
| D    | 2.25        | 2.90 | 0.089  | 0.114 |
| E    | 4.80        | 5.35 | 0.189  | 0.211 |
| E1   | 3.95        | 4.60 | 0.156  | 0.181 |
| L    | 0.75        | 1.50 | 0.030  | 0.059 |

Naming Rule

