

**Panasonic**

DB2L32400L1

For rectification

## ■ Features

- Average Forward Current  $I_F(AV) \leq 0.5$  A rectification is possible
- Low Forward Voltage
- High power capability due to Chip Size Package  
RoHS compliant (EU RoHS / MSL:Level 1 compliant)

## ■ Marking Symbol: A3

## ■ Packaging

Embossed type (Thermo-compression sealing) : 1 000 pcs / reel (standard)

## ■ Absolute Maximum Ratings

| Parameter                                                 | Symbol    | Min | Max  | Unit |
|-----------------------------------------------------------|-----------|-----|------|------|
| Reverse Voltage <sup>*1</sup>                             | VR        | -   | 30   | V    |
| Maximum Peak Reverse Voltage <sup>*1</sup>                | VRM       | -   | 30   | V    |
| Average Forward Current <sup>*2,3</sup>                   | $I_F(AV)$ | -   | 0.5  | A    |
| Average Forward Current <sup>*2,4</sup>                   | $I_F(AV)$ | -   | 0.5  | A    |
| Non-repetitive Peak Surge Forward Current <sup>*1,5</sup> | IFSM      | -   | 5    | A    |
| Operating Junction Temperature <sup>*6</sup>              | Tj        | -   | 150  | °C   |
| Ambient Temperature                                       | Ta        | -40 | +150 | °C   |
| Storage Temperature                                       | Tstg      | -55 | +150 | °C   |

Note) \*1: Ta = Tj = 25°C

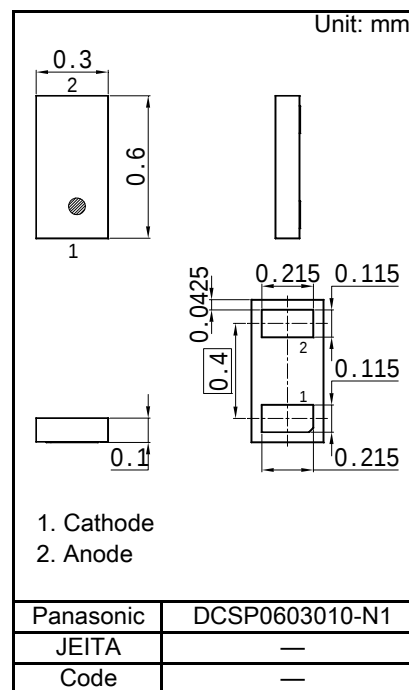
\*2: Squire wave :  $\sigma = 0.5$

\*3: Ta  $\leq 82^\circ\text{C}$ , when device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.0mm<sup>2</sup> area, 36μm thick).

\*4: Tsp  $\leq 138^\circ\text{C}$

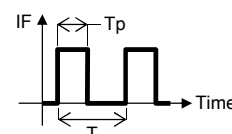
\*5: Squire wave : Tp = 5 ms

\*6: Power derating is necessary so that Tj < 150°C.



(Waveform definition)

$$\text{Duty Cycle : } \sigma = \frac{T_p}{T}$$



## ■ Electrical Characteristics Ta = 25 °C ± 3 °C

| Parameter                           | Symbol | Conditions                    | Min | Typ | Max  | Unit |
|-------------------------------------|--------|-------------------------------|-----|-----|------|------|
| Forward Voltage                     | VF     | IF = 0.5 A                    | -   | 0.4 | 0.49 | V    |
| Reverse Current                     | IR     | VR = 30 V                     | -   | 50  | 225  | μA   |
| Terminal Capacitance                | Ct     | VR = 10 V, f = 1 MHz          | -   | 10  | -    | pF   |
| Reverse Recovery Time <sup>*1</sup> | trr    | IF = IR = 100 mA, Irr = 10 mA | -   | 3.2 | -    | ns   |

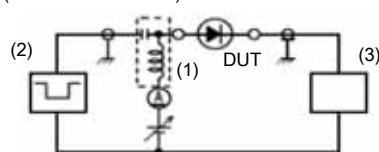
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

2. This product is sensitive to electric shock (static electricity, etc.).

Due attention must be paid on the charge of a human body and the leakage of current from the operating equipment.

3. \*1: Measurement circuit, input pulse, output pulse for Reverse recovery time

(Measurement circuit)

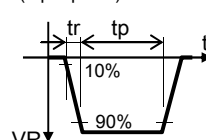


(1) Bias Insertion Unit (N-50BU)

(2) Pulse Generator (PG-10N), RS = 50 Ω

(3) Wave Form Analyzer (SAS-8130), Ri = 50 Ω

(Input pulse)

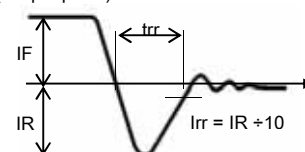


tp = 2 μs

tr = 0.35 ns

σ = 0.05

(Output pulse)



IF = 100 mA

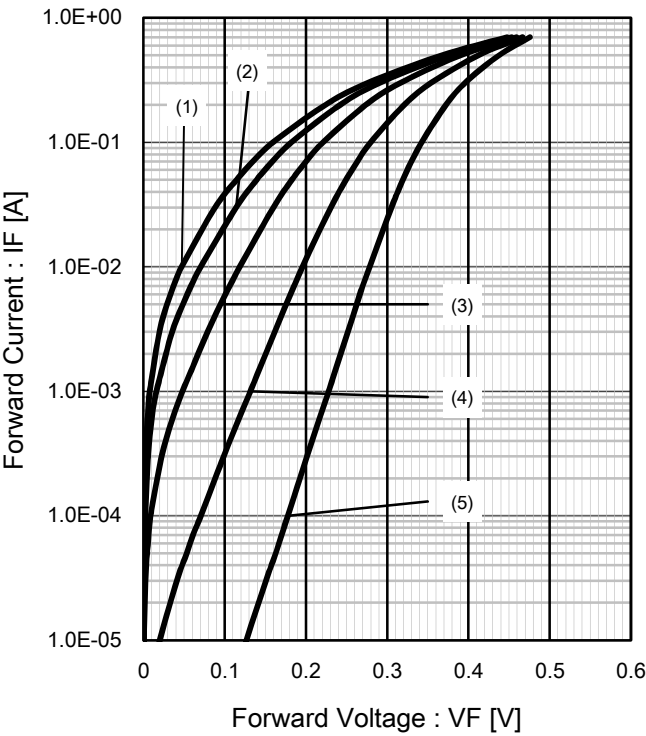
IR = 100 mA

Irr = 10 mA

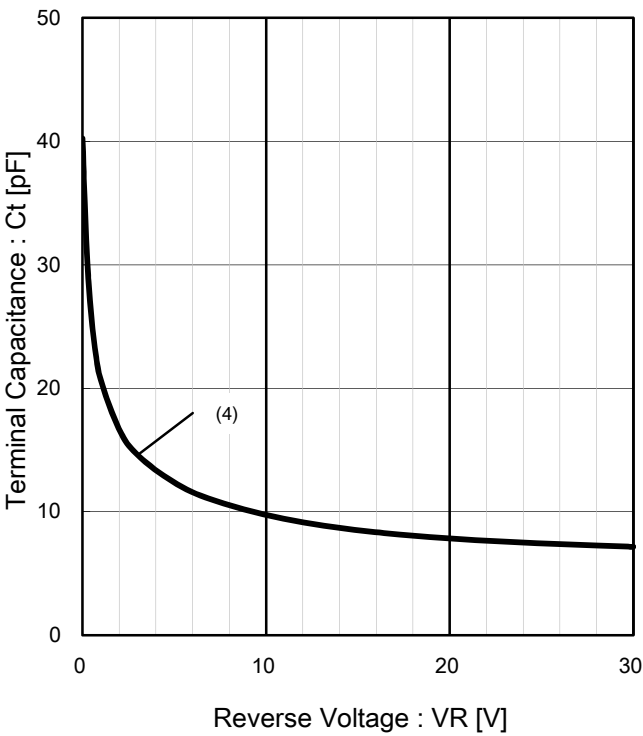


Electrical Characteristics Technical Data (Reference)

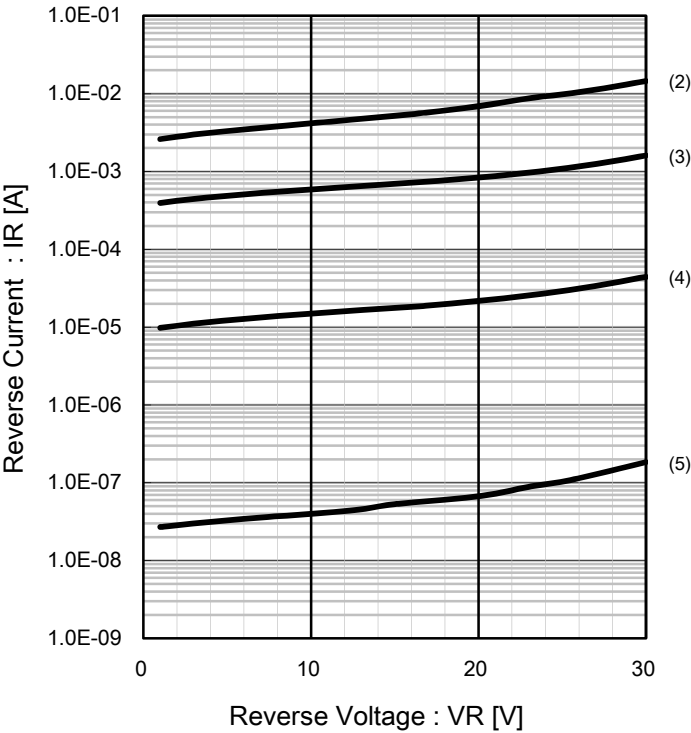
IF - VF / Typical Data



Ct - VR / Typical Data



IR - VR / Typical Data



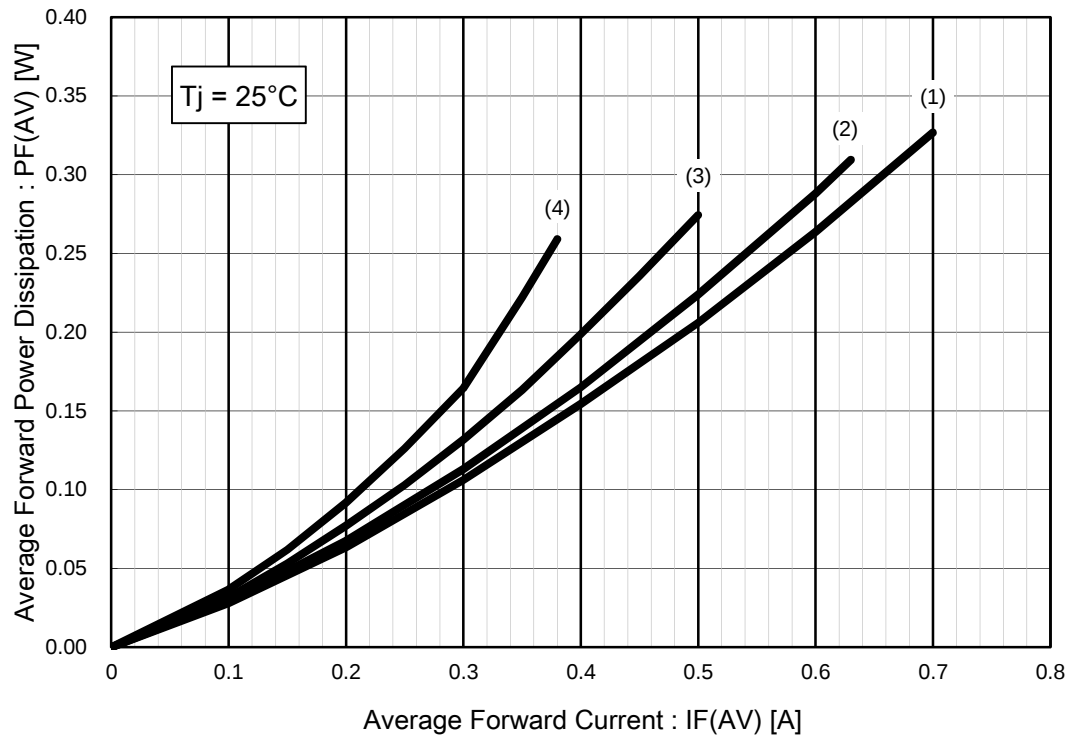
(Graph legends)

|     |             |
|-----|-------------|
| (1) | Ta = 150 °C |
| (2) | Ta = 125 °C |
| (3) | Ta = 85 °C  |
| (4) | Ta = 25 °C  |
| (5) | Ta = -40 °C |

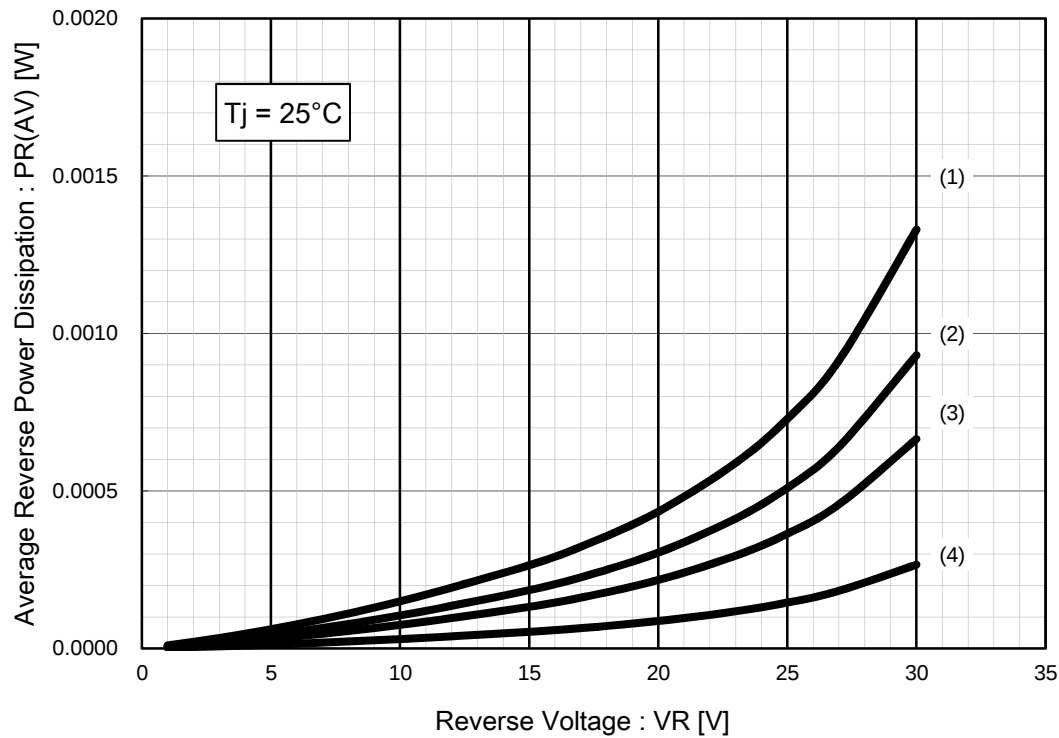


Electrical Characteristics Technical Data (Reference)

PF(AV) - IF(AV) / Typical Data



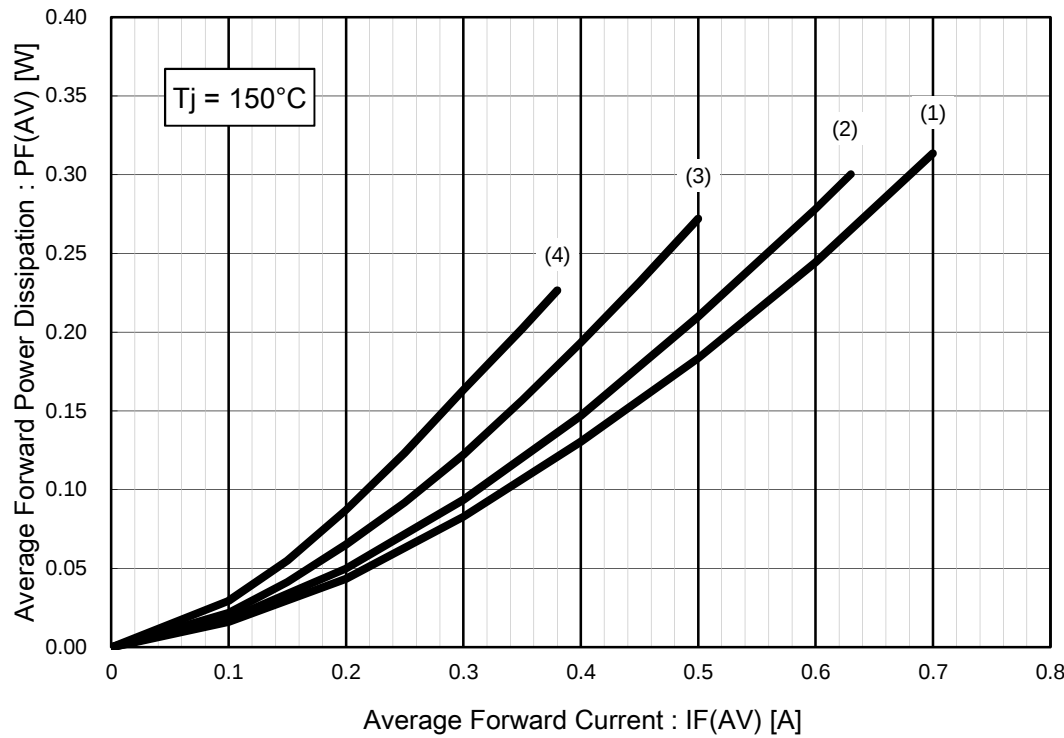
PR(AV) - VR / Typical Data



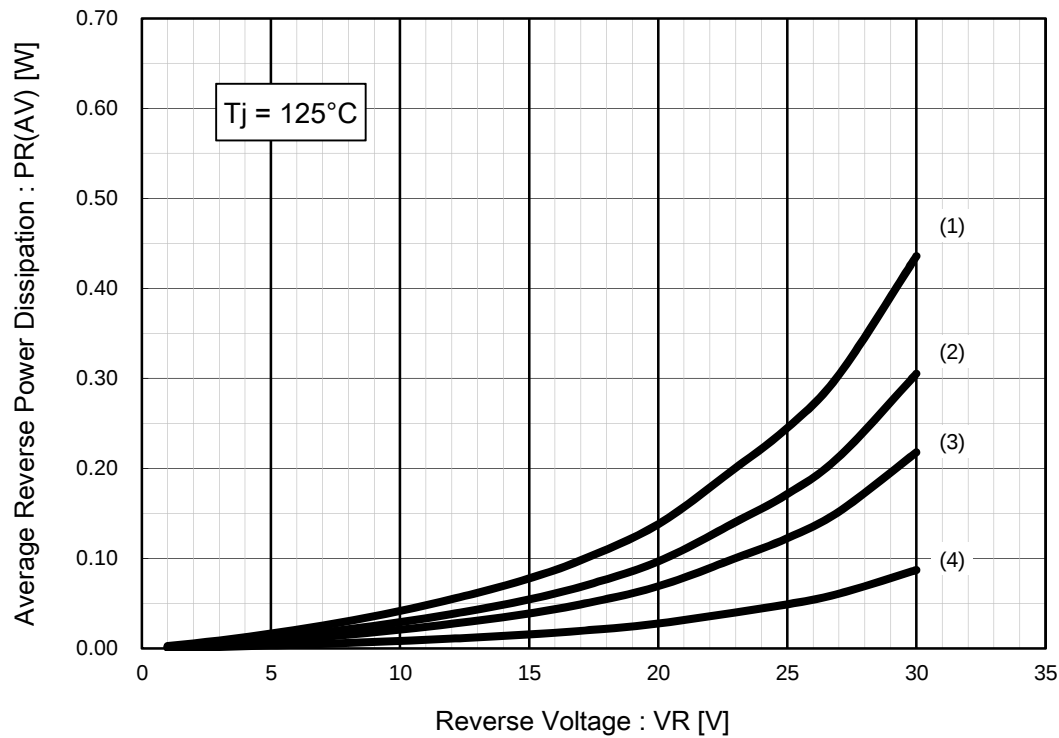


Electrical Characteristics Technical Data (Reference)

PF(AV) - IF(AV) / Typical Data



PR(AV) - VR / Typical Data

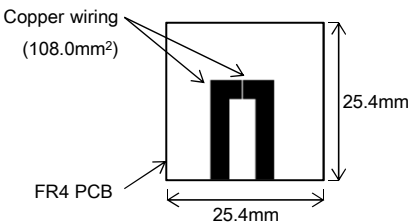
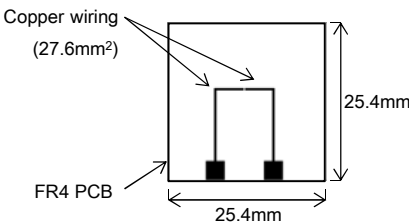


Thermal Characteristics

| Parameter                                             | Symbol         | Conditions                               | Min | Typ | Max | Unit                 |
|-------------------------------------------------------|----------------|------------------------------------------|-----|-----|-----|----------------------|
| Thermal Resistance, Junction to Solder Point          | $R_{th(j-sp)}$ | $T_a = 25^{\circ}\text{C}$ , in free air | -   | 35  | -   | $^{\circ}\text{C/W}$ |
| Thermal Resistance, Junction to Ambient <sup>*1</sup> | $R_{th(j-a)}$  | $T_a = 25^{\circ}\text{C}$ , in free air | -   | 610 | -   | $^{\circ}\text{C/W}$ |
| Thermal Resistance, Junction to Ambient <sup>*2</sup> | $R_{th(j-a)}$  | $T_a = 25^{\circ}\text{C}$ , in free air | -   | 202 | -   | $^{\circ}\text{C/W}$ |

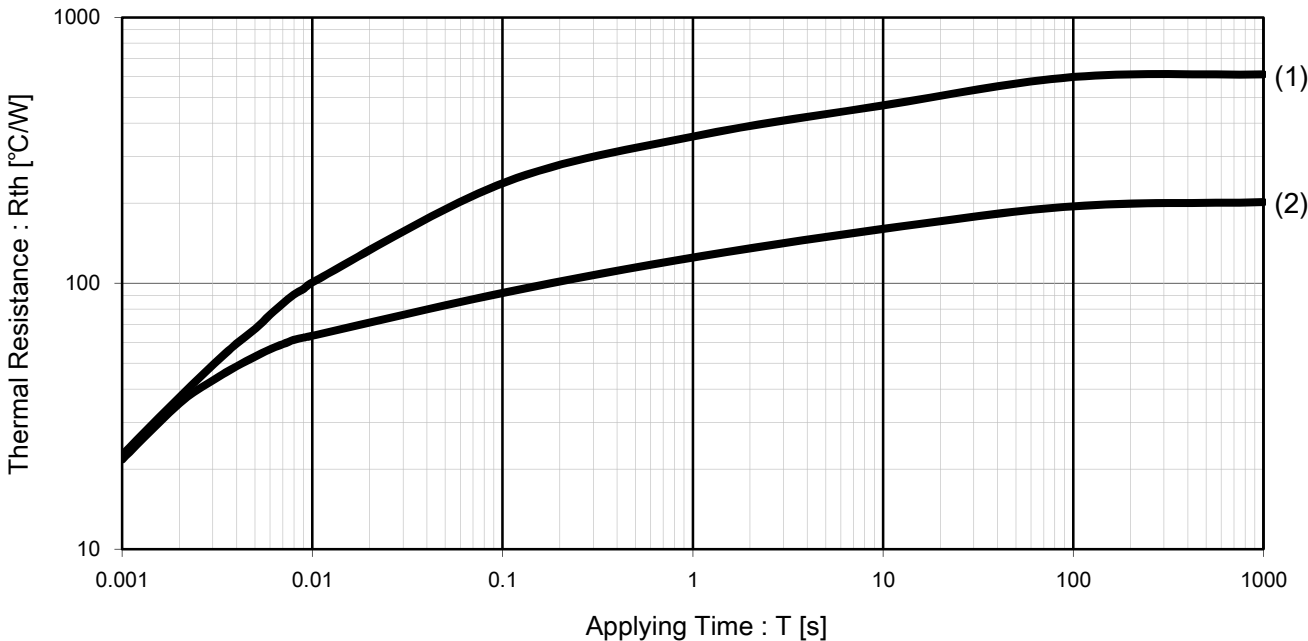
Note) <sup>\*1</sup>: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (27.6mm<sup>2</sup> area, 36μm thick).  
<sup>\*2</sup>: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.0mm<sup>2</sup> area, 36μm thick).

(Evaluation board outline)

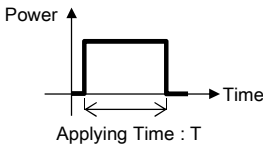


Thermal Characteristics Technical Data (Reference)

$R_{th} - T^{*1}$  / Typical Data



Note) <sup>\*1</sup>: Single pulse measurement  
(Waveform definition)

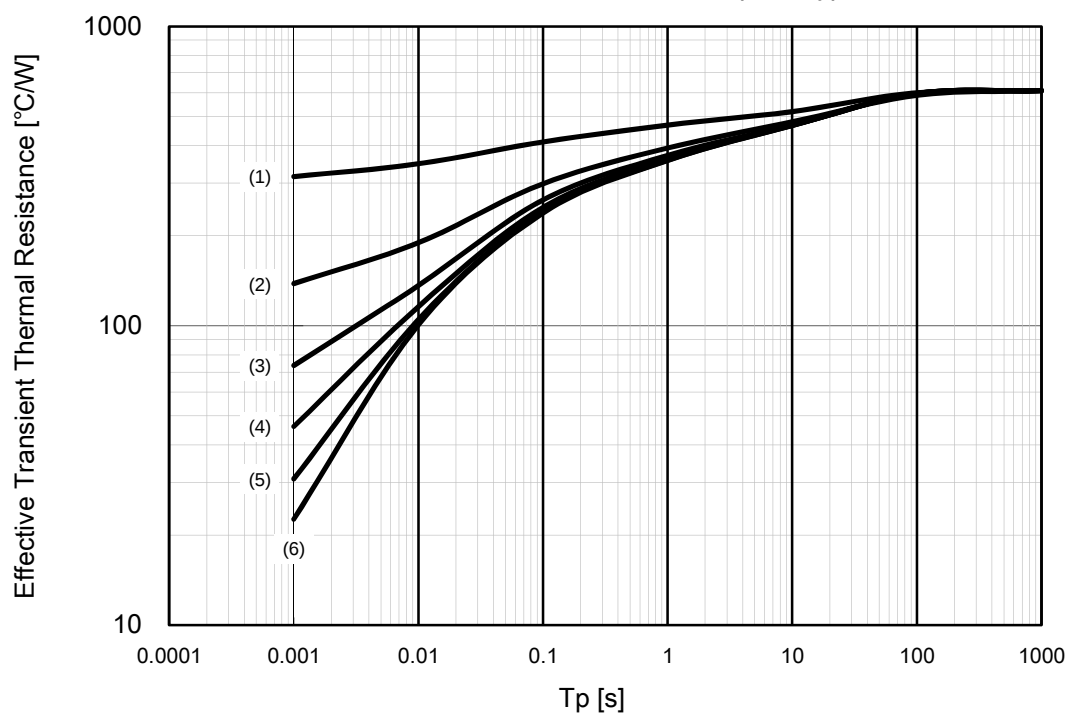


(Graph legends)

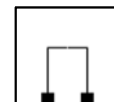
|     |                                                                                                                |
|-----|----------------------------------------------------------------------------------------------------------------|
| (1) | Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (27.6mm <sup>2</sup> area, 36μm thick).  |
| (2) | Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.0mm <sup>2</sup> area, 36μm thick). |

## Thermal Characteristics Technical Data (Reference)

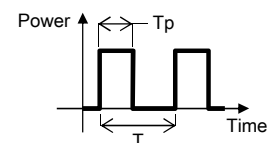
### Effective Transient Thermal Resistance - $T_p^{*1}$ / Typical Data



(Evaluation board outline)



(Waveform definition)

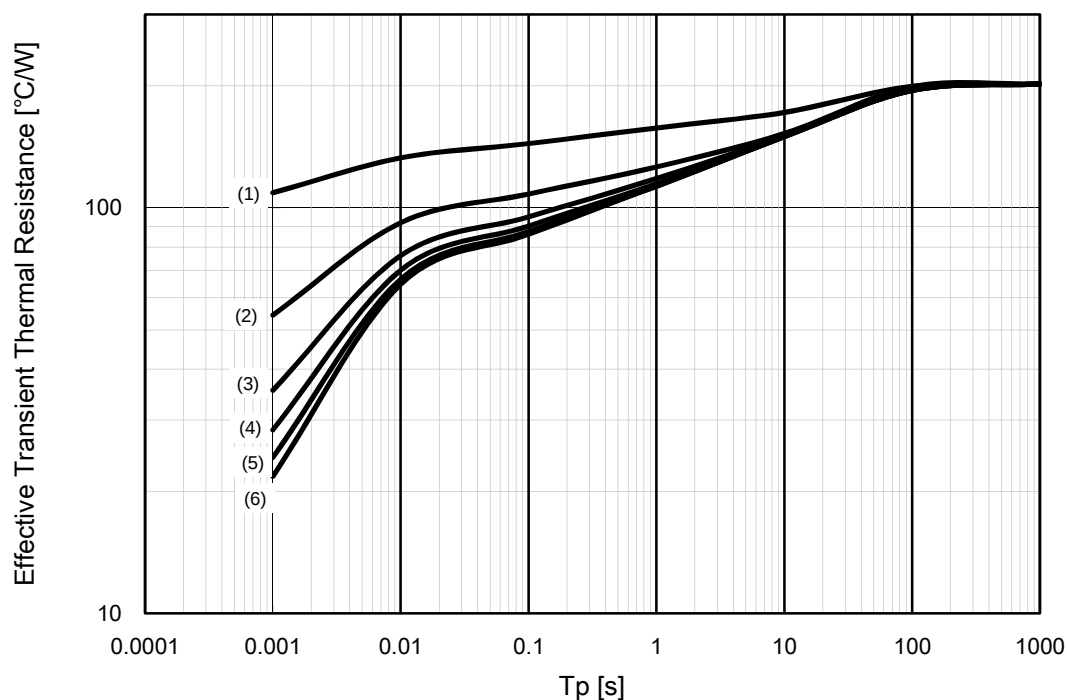


$$\text{Duty Cycle : } \sigma = \frac{T_p}{T}$$

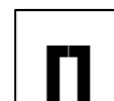
(Graph legends)

|     |                 |
|-----|-----------------|
| (1) | $\sigma = 0.5$  |
| (2) | $\sigma = 0.2$  |
| (3) | $\sigma = 0.1$  |
| (4) | $\sigma = 0.05$ |
| (5) | $\sigma = 0.02$ |
| (6) | $\sigma = 0$    |

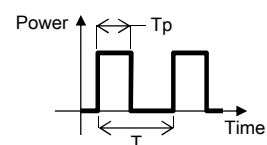
### Effective Transient Thermal Resistance - $T_p^{*2}$ / Typical Data



(Evaluation board outline)



(Waveform definition)



$$\text{Duty Cycle : } \sigma = \frac{T_p}{T}$$

(Graph legends)

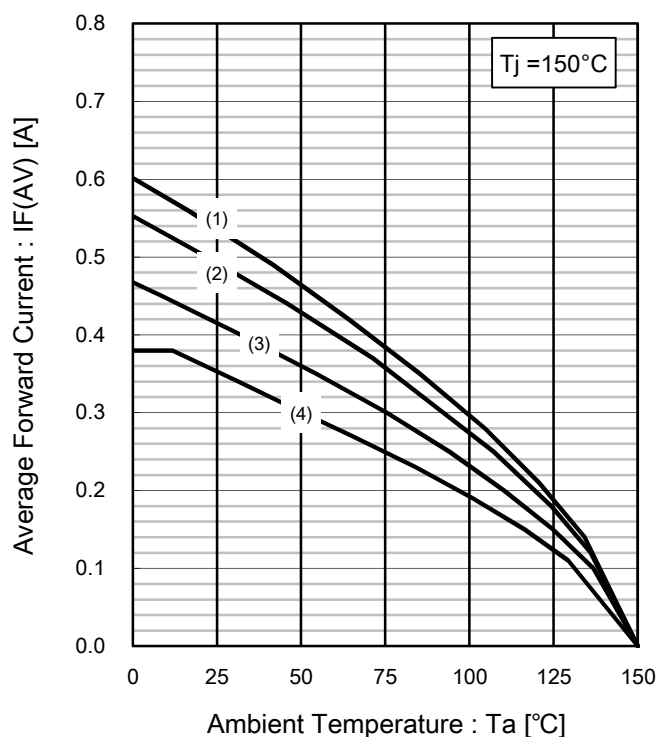
|     |                 |
|-----|-----------------|
| (1) | $\sigma = 0.5$  |
| (2) | $\sigma = 0.2$  |
| (3) | $\sigma = 0.1$  |
| (4) | $\sigma = 0.05$ |
| (5) | $\sigma = 0.02$ |
| (6) | $\sigma = 0$    |

Note) \*1: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (27.6mm<sup>2</sup> area, 36μm thick).

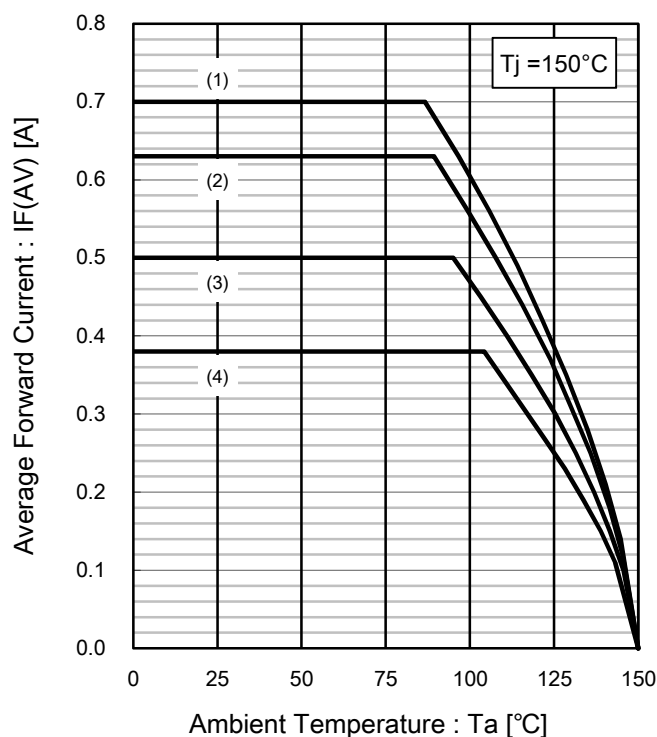
\*2: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.0mm<sup>2</sup> area, 36μm thick).

## Power Derating Technical Data (Reference)

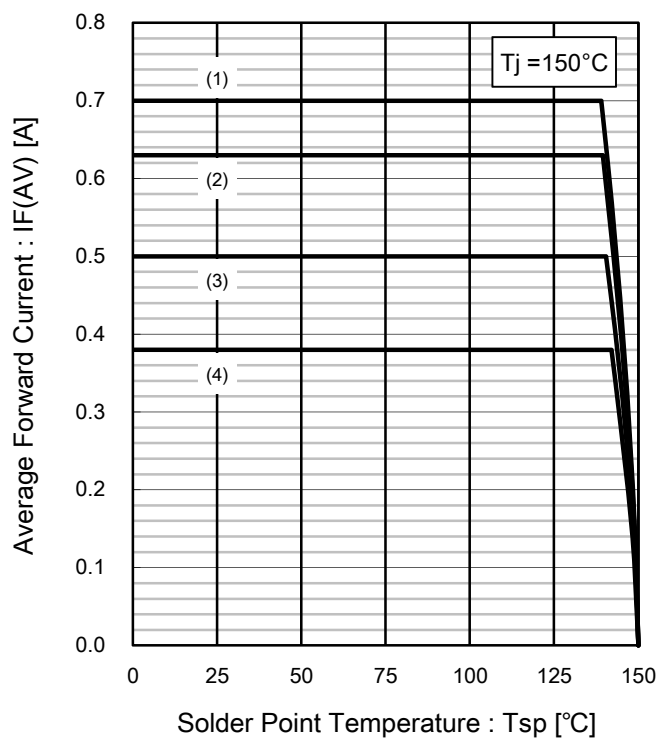
IF(AV) - Ta<sup>\*1</sup> / Typical Data



IF(AV) - Ta<sup>\*2</sup> / Typical Data



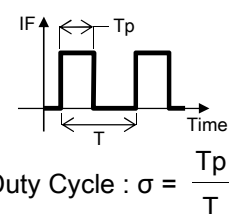
IF(AV) - Tsp / Typical Data



(Graph legends)

|     |                |
|-----|----------------|
| (1) | $\sigma = 1.0$ |
| (2) | $\sigma = 0.8$ |
| (3) | $\sigma = 0.5$ |
| (4) | $\sigma = 0.3$ |

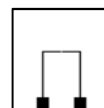
(Waveform definition)



Note)

\*1: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (27.6mm<sup>2</sup> area, 36μm thick).

(Evaluation board outline)



\*2: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.0mm<sup>2</sup> area, 36μm thick).

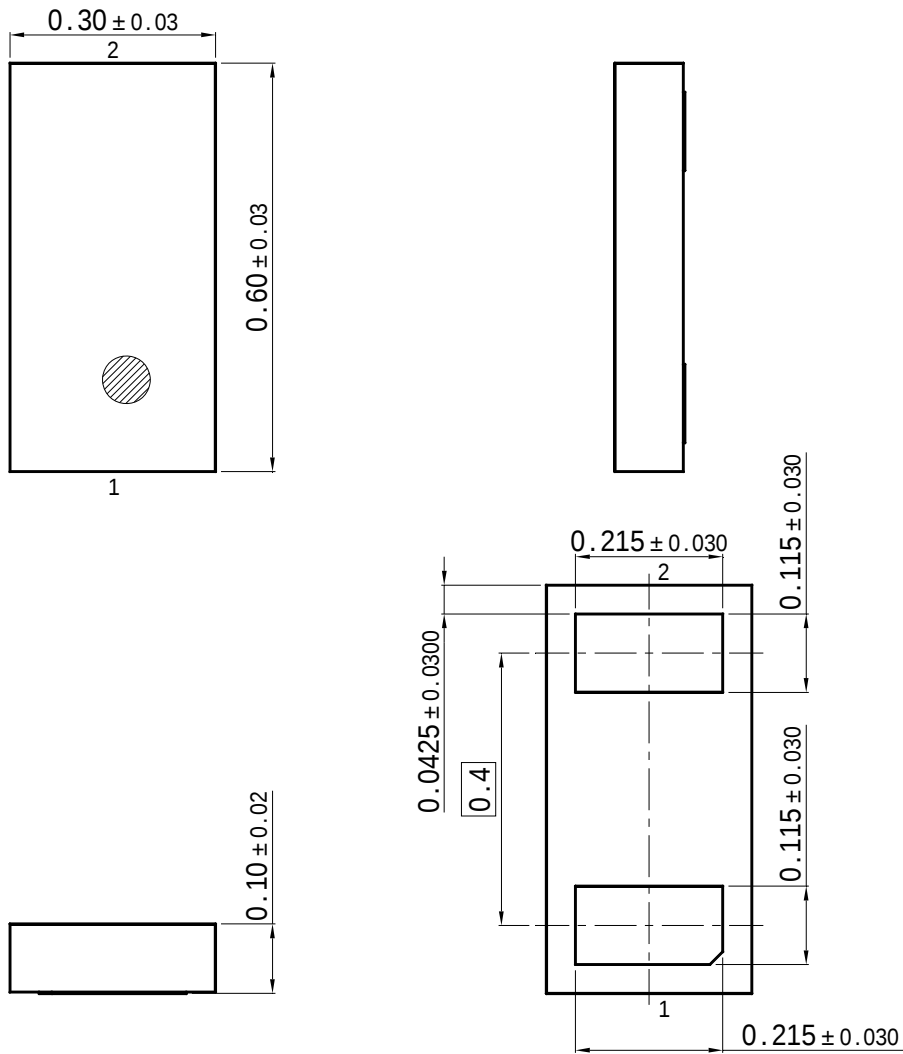
(Evaluation board outline)





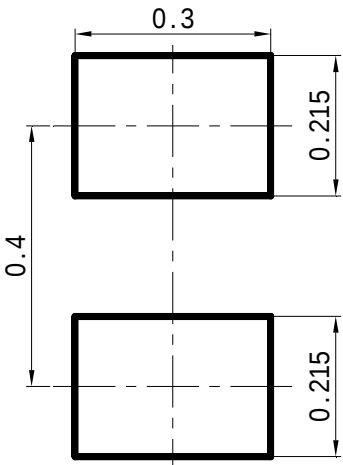
DCSP0603010-N1

Unit: mm



■ Land Pattern (Reference)

Unit: mm



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