



Schottky Barrier Diode  
DB2G42900L1

## DB2G42900L1

For rectification

### ■ Features

- Low forward voltage VF
- Forward current (Average) IF(AV)  $\leq 1.0$  A rectification is possible
- RoHS compliant  
(EU RoHS / MSL:Level 1 compliant)

### ■ Marking Symbol: D5

### ■ 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	-	40	V
Maximum Peak Reverse Voltage <sup>*1</sup>	VRM	-	40	V
Average Forward Current <sup>*2,3</sup>	IF(AV)	-	1.0	A
Average Forward Current <sup>*2,4</sup>	IF(AV)	-	1.0	A
Non-repetitive Peak Surge Forward Current <sup>*1,5</sup>	IFSM	-	15	A
Operating Junction Temperature <sup>*6</sup>	T <sub>j</sub>	-	150	°C
Ambient Temperature	T <sub>a</sub>	-40	+150	°C
Storage Temperature	T <sub>stg</sub>	-55	+150	°C

Note) \*1: T<sub>a</sub> = T<sub>j</sub> = 25°C

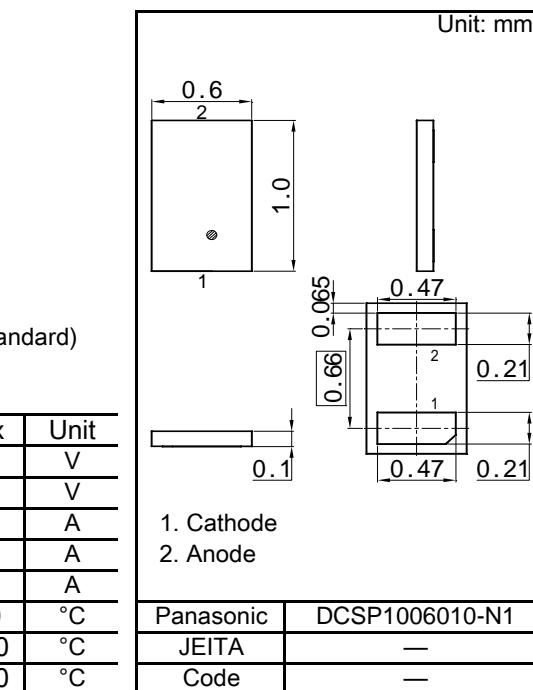
\*2: Square wave :  $\sigma = 0.5$

\*3: T<sub>a</sub>  $\leq$  91°C, when device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (620.0mm<sup>2</sup> area, 36μm thick).

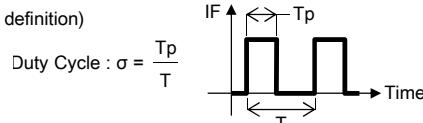
\*4: T<sub>sp</sub>  $\leq$  137°C

\*5: Square wave : T<sub>p</sub> = 5 ms

\*6: Power derating is necessary so that T<sub>j</sub> < 150°C.



(Waveform definition)



### ■ Electrical Characteristics T<sub>a</sub> = 25 °C $\pm$ 3 °C

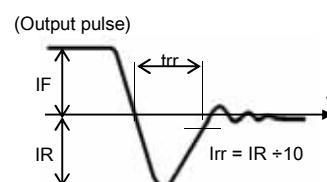
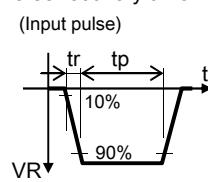
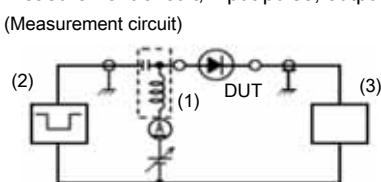
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward Voltage	VF	IF = 1.0 A	-	0.43	0.52	V
Reverse Current	IR	VR = 40 V	-	50	150	μA
Terminal Capacitance	C <sub>t</sub>	VR = 10 V, f = 1 MHz	-	28	-	pF
Reverse Recovery Time <sup>*1</sup>	trr	IF = IR = 100 mA, Irr = 10 mA	-	8.8	-	ns

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



(1) Bias Insertion Unit (N-50BU)  
(2) Pulse Generator (PG-10N), RS = 50 Ω  
(3) Wave Form Analyzer (SAS-8130), Ri = 50 Ω

tp = 2 μs  
tr = 0.35 ns  
 $\sigma = 0.05$

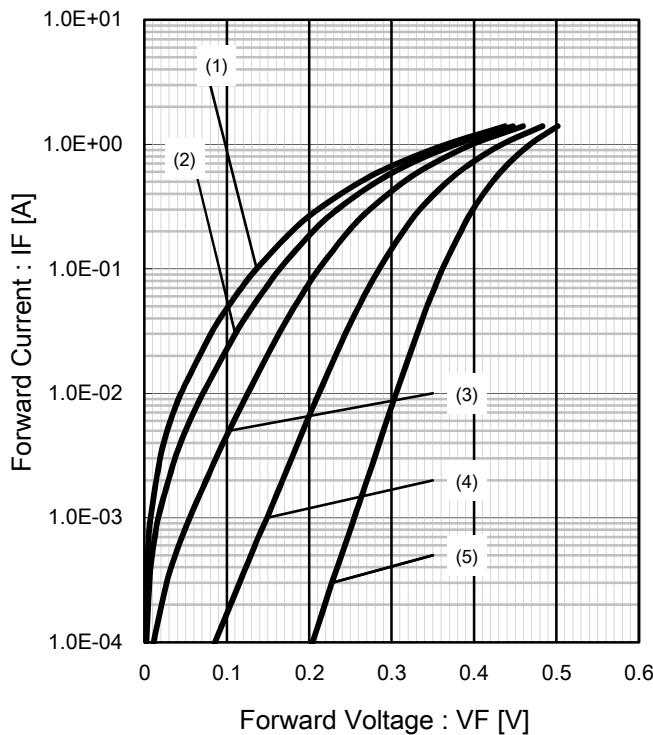
IF = 100 mA  
IR = 100 mA  
Irr = 10 mA



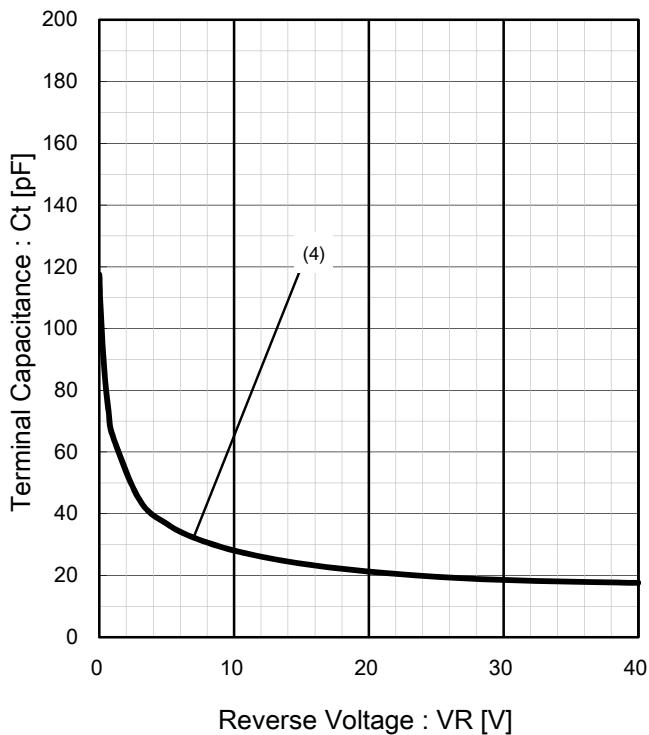
Schottky Barrier Diode  
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### Electrical Characteristics Technical Data (Reference)

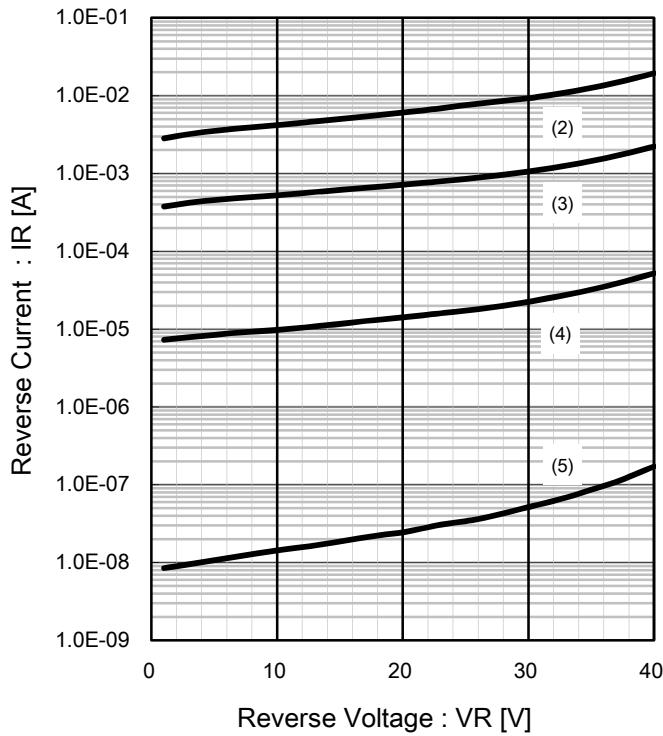
IF - VF / Typical Data



Ct - VR / Typical Data



IR - VR / Typical Data



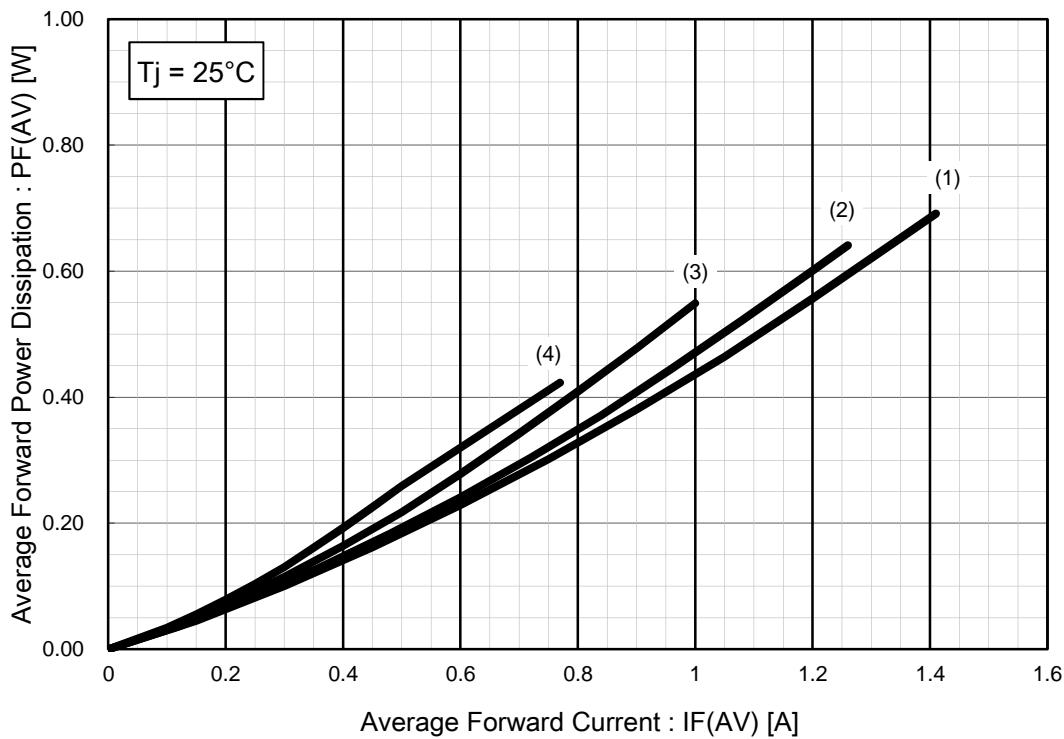
(Graph legends)

(1)	T <sub>a</sub> = 150 °C
(2)	T <sub>a</sub> = 125 °C
(3)	T <sub>a</sub> = 85 °C
(4)	T <sub>a</sub> = 25 °C
(5)	T <sub>a</sub> = -40 °C



### Electrical Characteristics Technical Data (Reference)

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



(Waveform definition)

IF

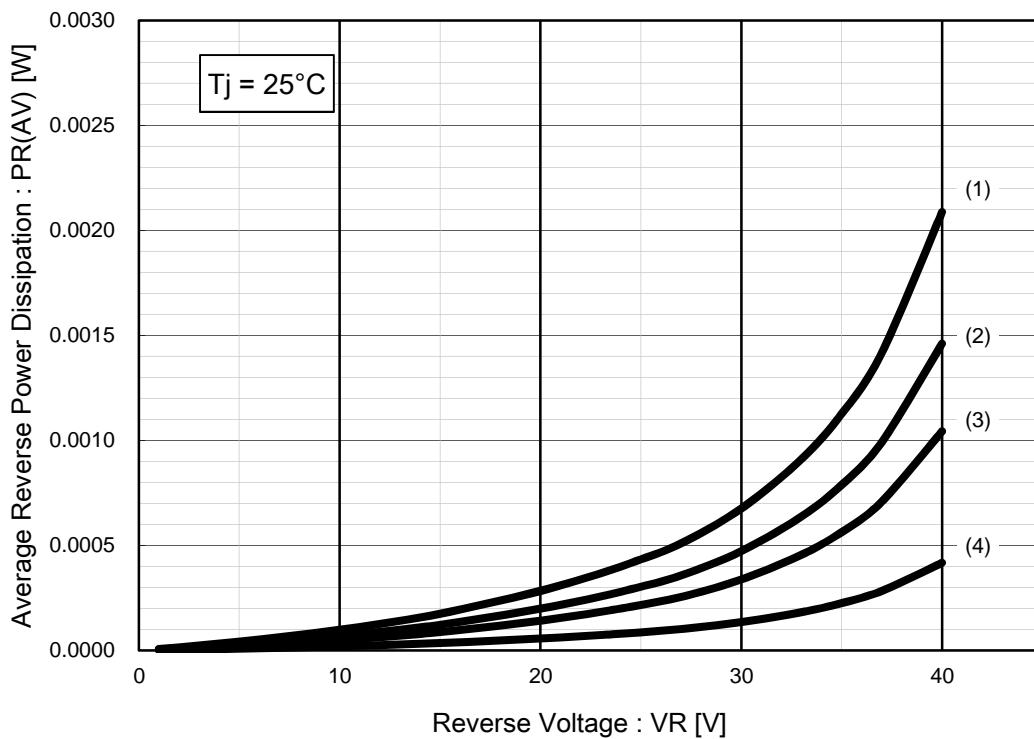
Time

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

(Graph legends)

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

PR(AV) - VR / Typical Data



(Waveform definition)

VR

Time

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

(Graph legends)

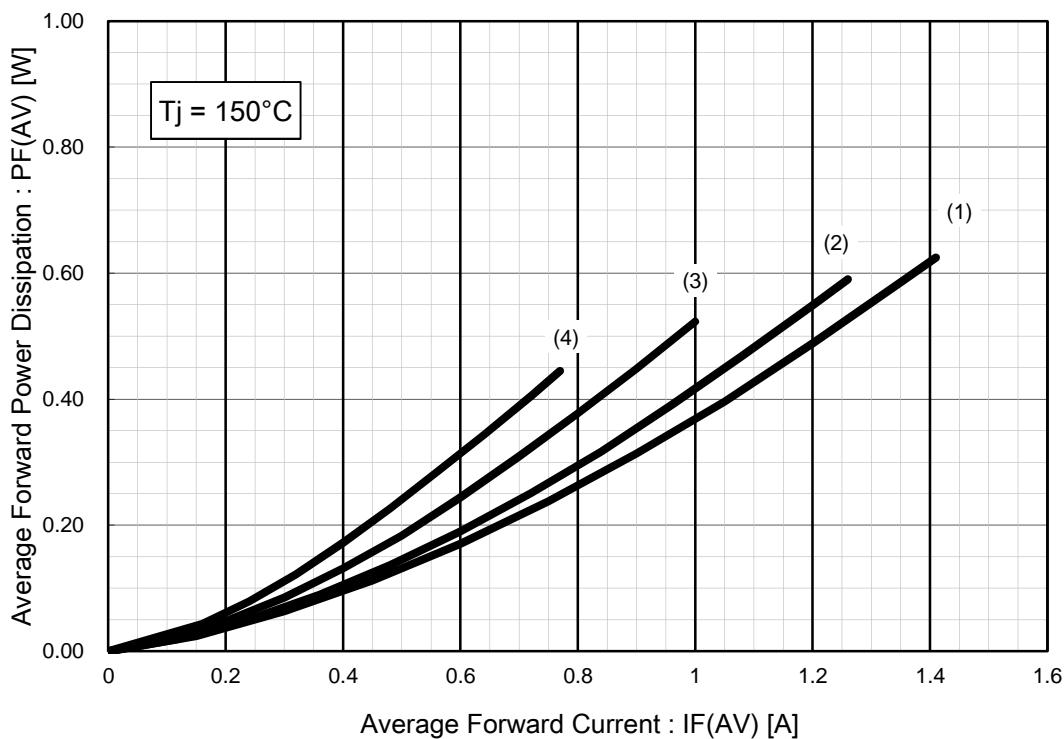
(1)	$\sigma = 1.0$
(2)	$\sigma = 0.7$
(3)	$\sigma = 0.5$
(4)	$\sigma = 0.2$



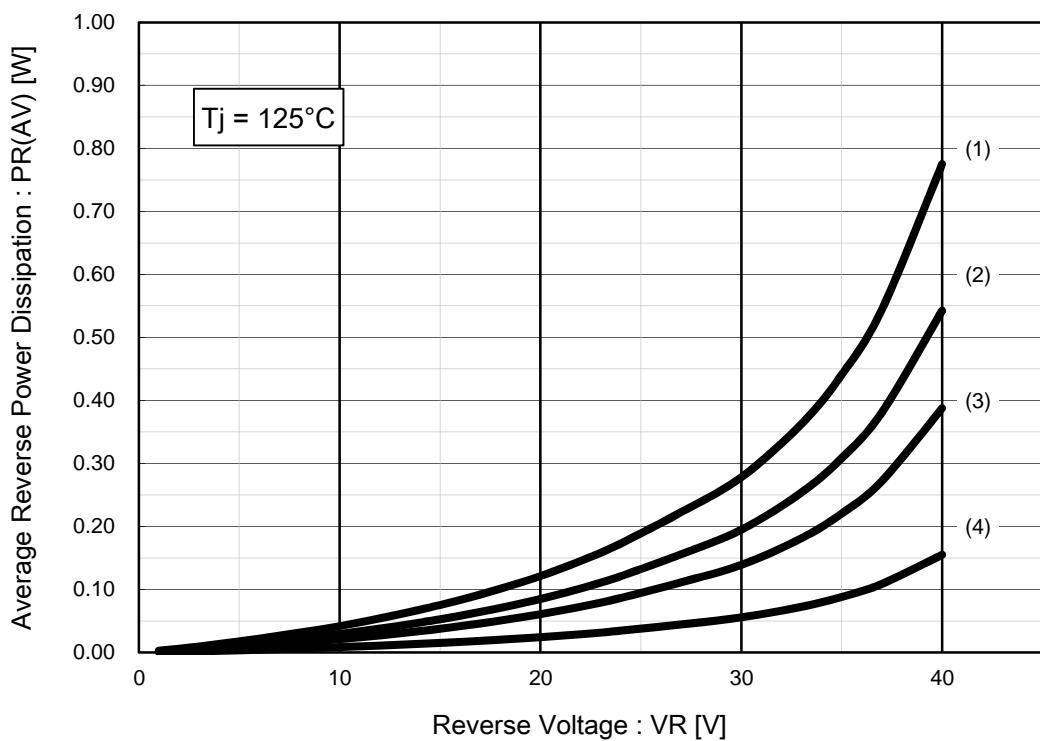
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### Electrical Characteristics Technical Data (Reference)

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



PR(AV) - VR / Typical Data

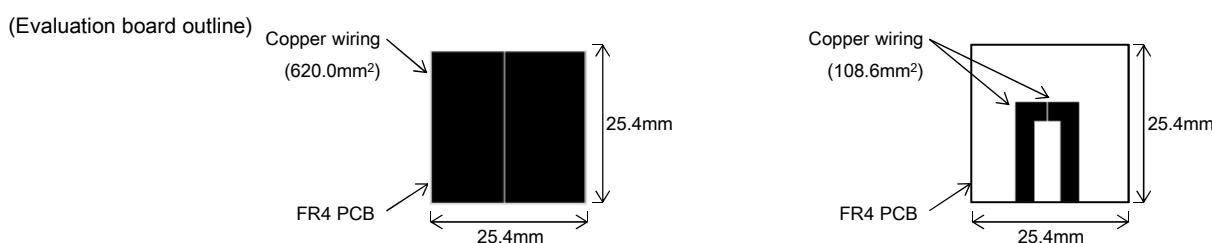


## ■ Thermal Characteristics

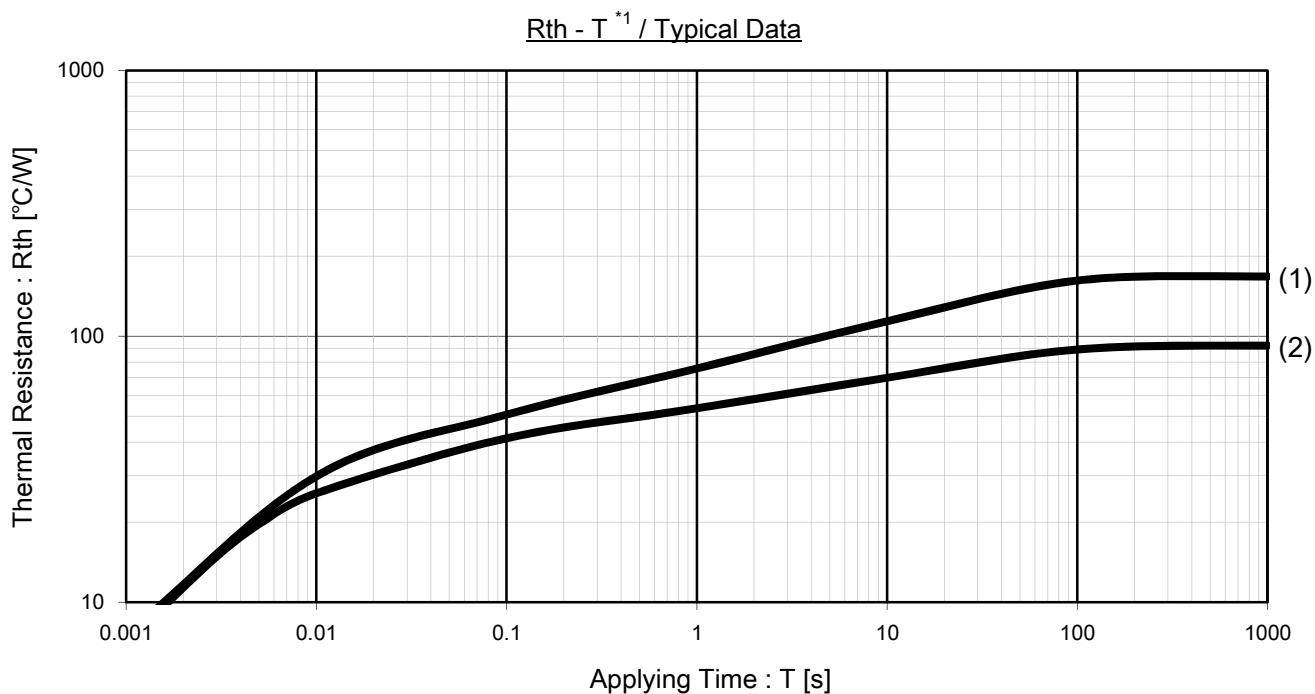
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Thermal Resistance, Junction to Solder Point	$R_{th(j-sp)}$	$T_a = 25^\circ\text{C}$ , in free air	-	20	-	°C/W
Thermal Resistance, Junction to Ambient <sup>*1</sup>	$R_{th(j-a)}$	$T_a = 25^\circ\text{C}$ , in free air	-	92	-	°C/W
Thermal Resistance, Junction to Ambient <sup>*2</sup>	$R_{th(j-a)}$	$T_a = 25^\circ\text{C}$ , in free air	-	170	-	°C/W

Note) <sup>\*1</sup>: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (620.0mm<sup>2</sup> area, 36μm thick).

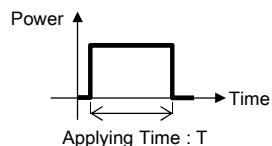
<sup>\*2</sup>: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.6mm<sup>2</sup> area, 36μm thick).



## Thermal Characteristics Technical Data (Reference)



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



(Graph legends)

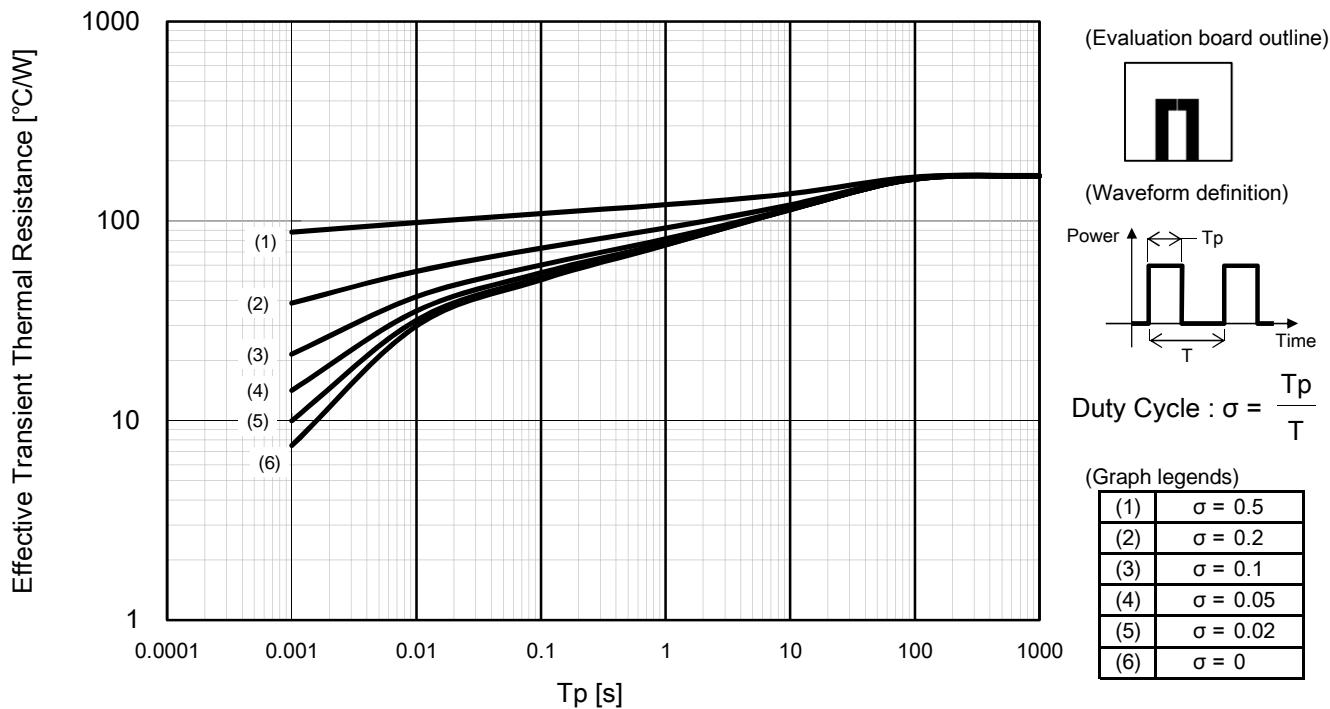
(1)	Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.6mm <sup>2</sup> area, 36μm thick).
(2)	Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (620.0mm <sup>2</sup> area, 36μm thick).



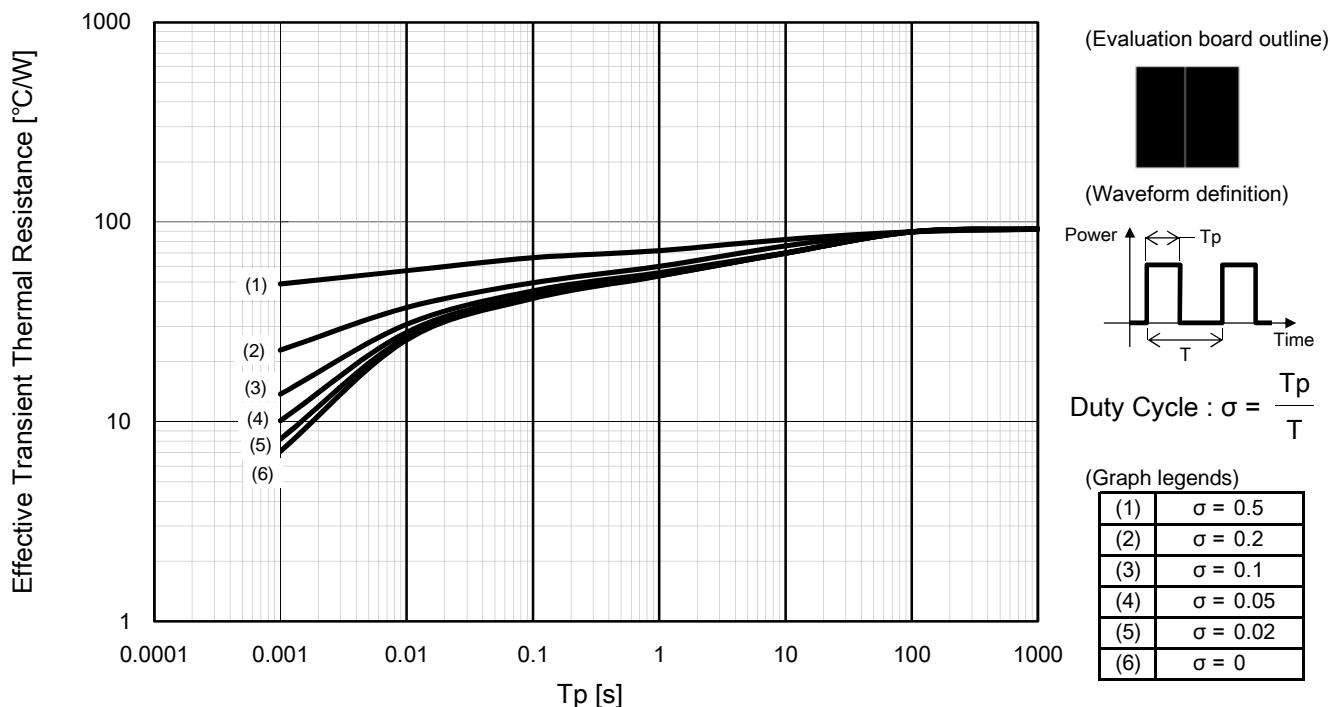
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### Thermal Characteristics Technical Data (Reference)

#### Effective Transient Thermal Resistance - $T_p$ <sup>\*1</sup> / Typical Data



#### Effective Transient Thermal Resistance - $T_p$ <sup>\*2</sup> / Typical Data



Note) \*1: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring ( $108.6\text{mm}^2$  area,  $36\mu\text{m}$  thick).

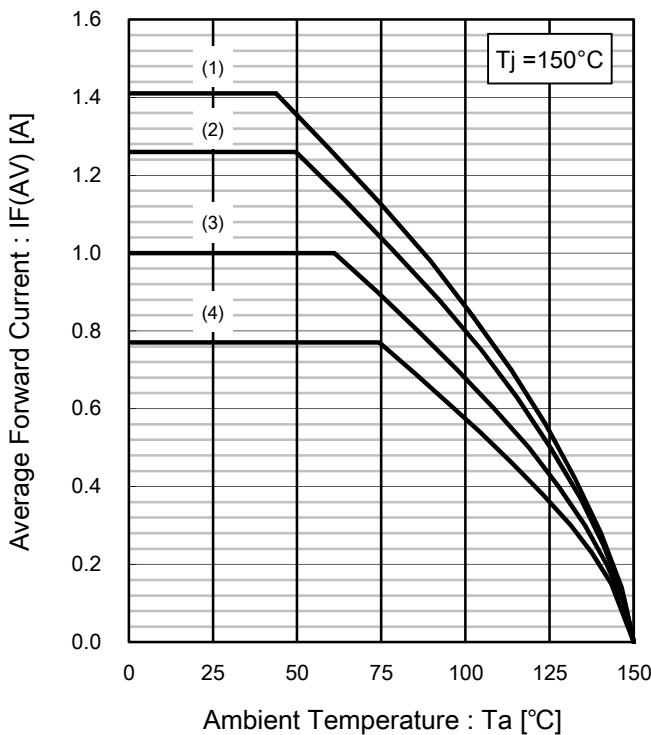
\*2: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring ( $620.0\text{mm}^2$  area,  $36\mu\text{m}$  thick).



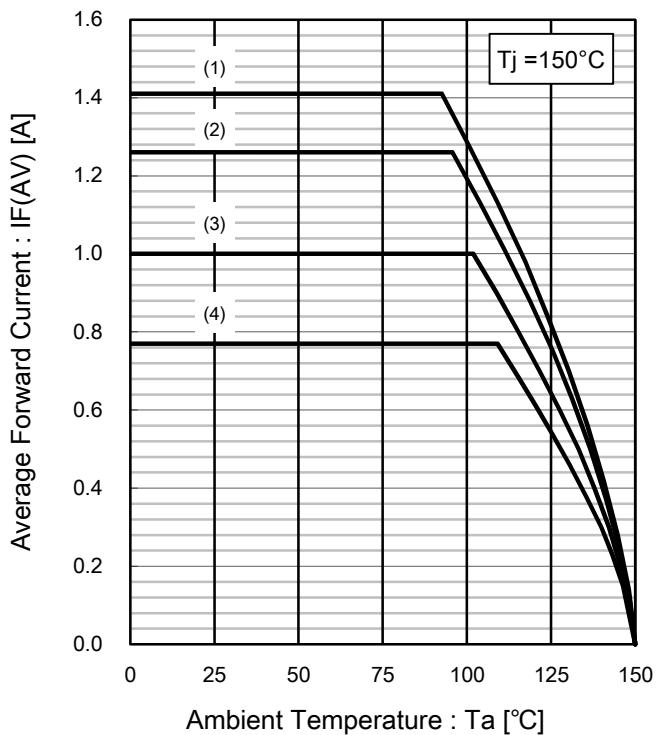
Schottky Barrier Diode  
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Power Derating Technical Data (Reference)

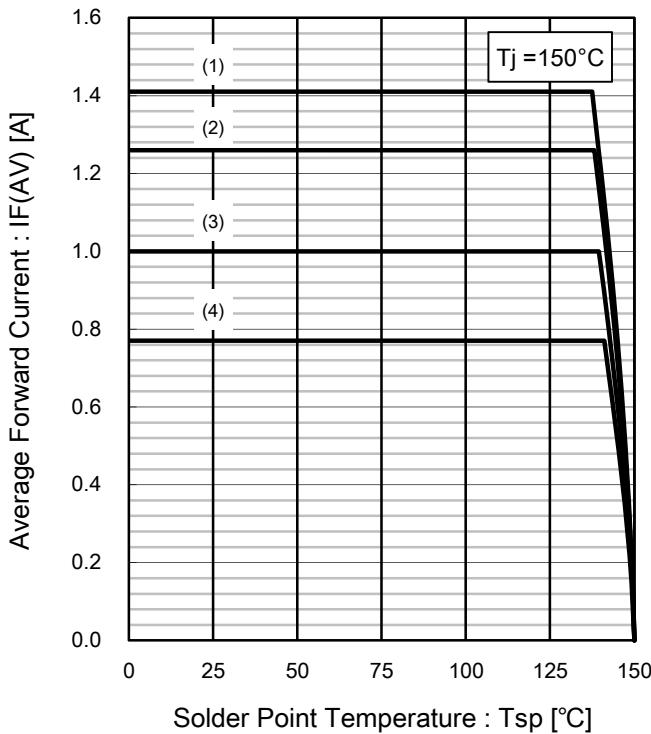
IF(AV) - Ta <sup>\*1</sup> / Typical Data



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



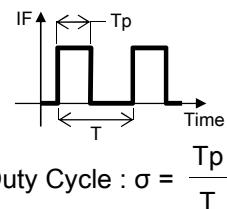
IF(AV) - Tsp / Typical Data



(Graph legends)

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

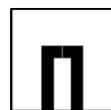
(Waveform definition)



Note)

\*1: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (108.6mm<sup>2</sup> area, 36μm thick).

(Evaluation board outline)



\*2: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (620.0mm<sup>2</sup> area, 36μm thick).

(Evaluation board outline)

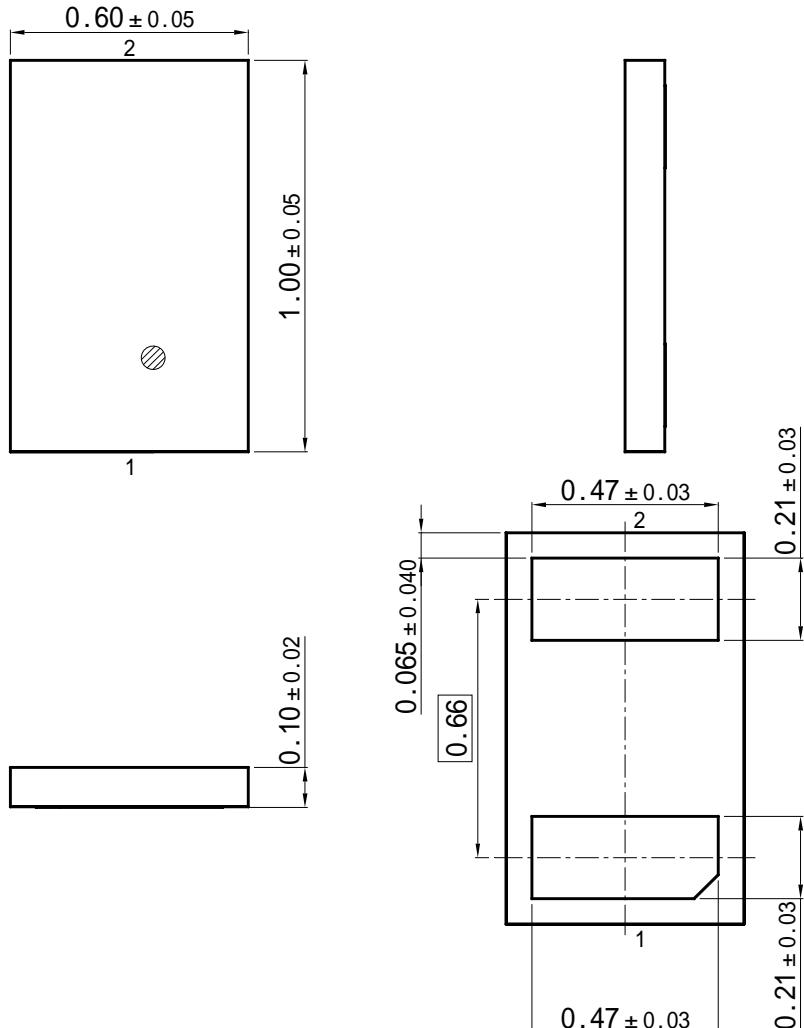


**Panasonic**

Schottky Barrier Diode  
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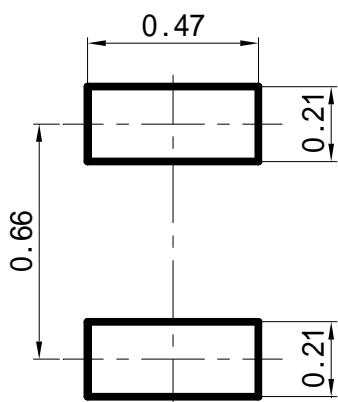
DCSP1006010-N1

Unit: mm



■ Land Pattern (Reference)

Unit: mm



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