



# DB2F43100L1

For rectification

### ■ Features

- Low forward voltage VF
- Forward current (Average) IF(AV) ≤ 5.0 A rectification is possible
- RoHS compliant
- (EU RoHS / MSL:Level 1 compliant)

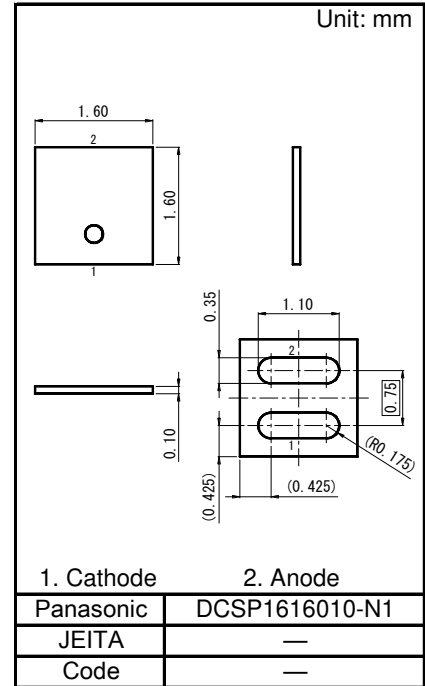
### ■ Marking Symbol: E6

### ■ Packaging

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

### ■ Absolute Maximum Ratings

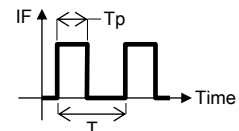
Parameter	Symbol	Min	Max	Unit
Reverse Voltage <sup>*1</sup>	VR	-	40	V
Maximum Peak Reverse Voltage <sup>*1</sup>	VRM	-	40	V
Average Forward Current <sup>*2,3</sup>	IF(AV)	-	5.0	A
Non-repetitive Peak Surge Forward Current <sup>*1,4</sup>	IFSM	-	40	A
Operating Junction Temperature <sup>*5</sup>	Tj	-	150	°C
Ambient Temperature	Ta	-40	+150	°C
Storage Temperature	Tstg	-55	+150	°C



- Note) \*1: Ta = Tj = 25°C  
 \*2: Square wave : σ = 0.5  
 \*3: Solder Point Temperature : Tsp ≤ 122°C  
 \*4: Square wave : Tp = 5 ms  
 \*5: Power derating is necessary so that Tj < 150°C.

(Waveform definition)

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

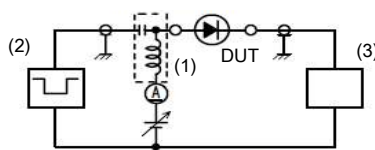


### ■ Electrical Characteristics Ta = 25 °C ± 3 °C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward Voltage	VF	IF = 5.0 A	-	0.51	0.6	V
Reverse Current	IR	VR = 40 V	-	15	100	μA
Terminal Capacitance	Ct	VR = 10 V, f = 1 MHz	-	140	-	pF
Reverse Recovery Time <sup>*1</sup>	t <sub>rr</sub>	IF = IR = 100 mA, I <sub>rr</sub> = 10 mA	-	45	-	ns

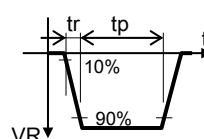
- Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.  
 2. This product is sensitive to electric shock (static electricity, etc.).  
 Due attention must be paid on the charge of a human body and the leakage of current from the operating equipment.  
 3. \*1: Measurement circuit, input pulse, output pulse for Reverse recovery time

(Measurement circuit)



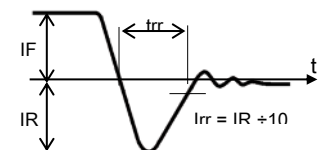
- (1) Bias Insertion Unit (N-50BU)  
 (2) Pulse Generator (PG-10N), RS = 50 Ω  
 (3) Wave Form Analyzer (SAS-8130), Ri = 50 Ω

(Input pulse)



- tp = 2 μs  
 tr = 0.35 ns  
 σ = 0.05

(Output pulse)

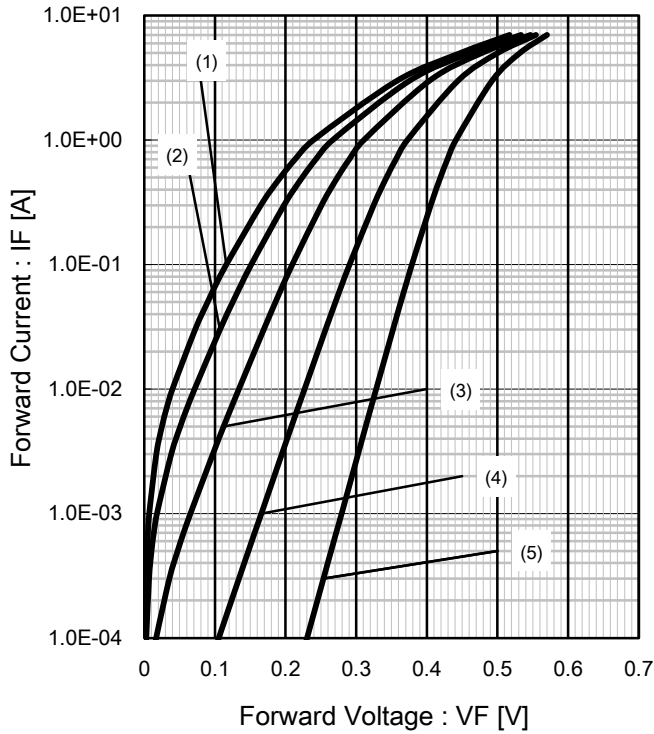


- IF = 100 mA  
 IR = 100 mA  
 I<sub>rr</sub> = 10 mA

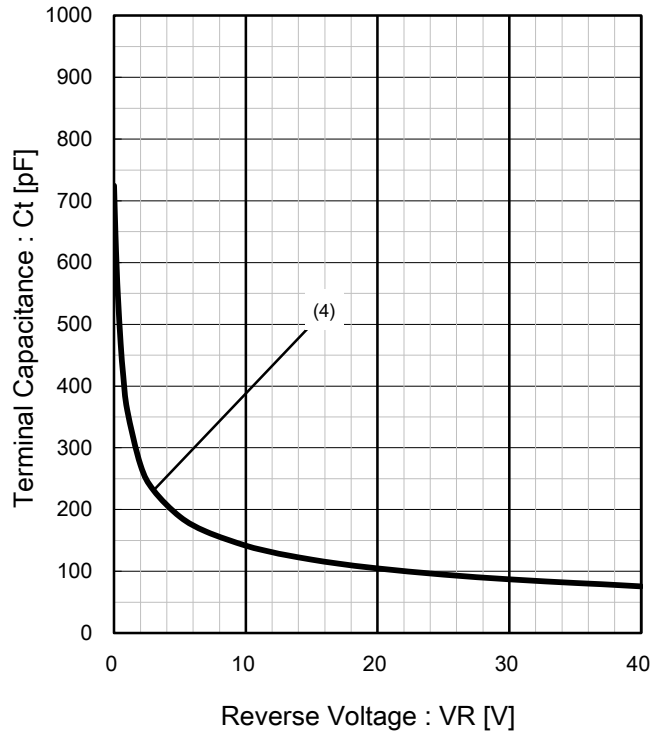


Electrical Characteristics Technical Data (Reference)

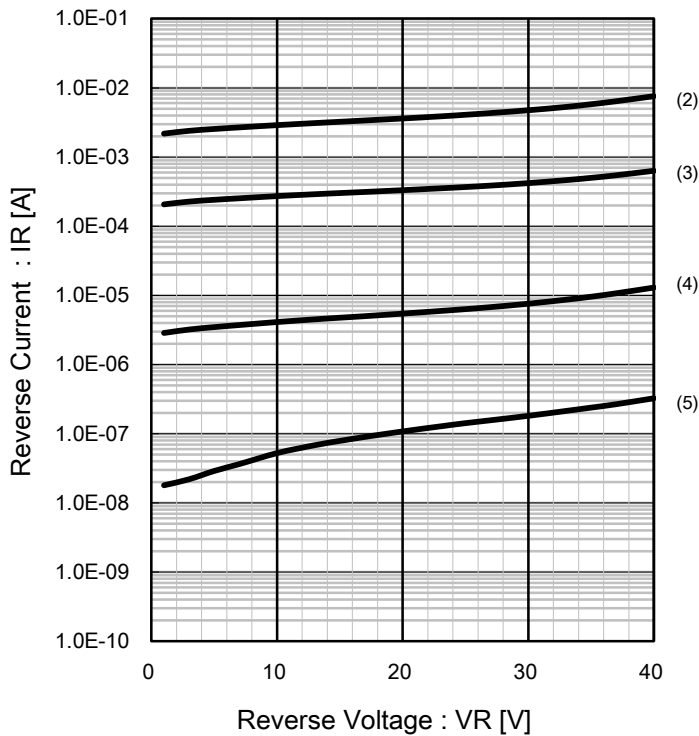
IF - VF / Typical Data



Ct - VR / Typical Data



IR - VR / Typical Data



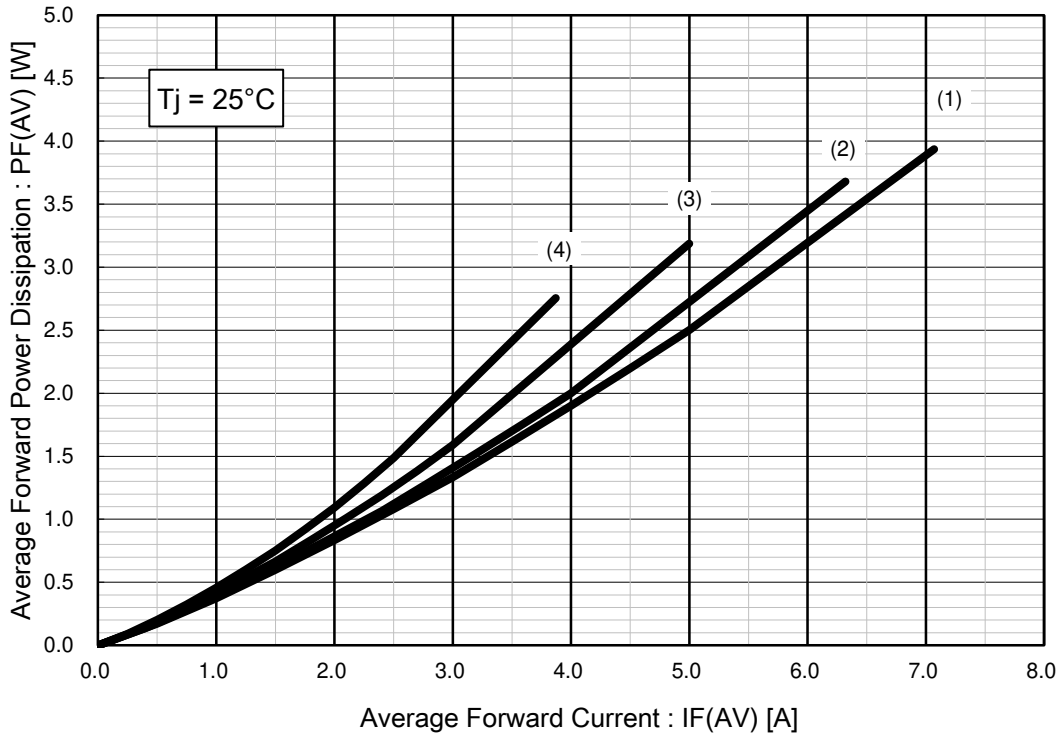
(Graph legends)

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

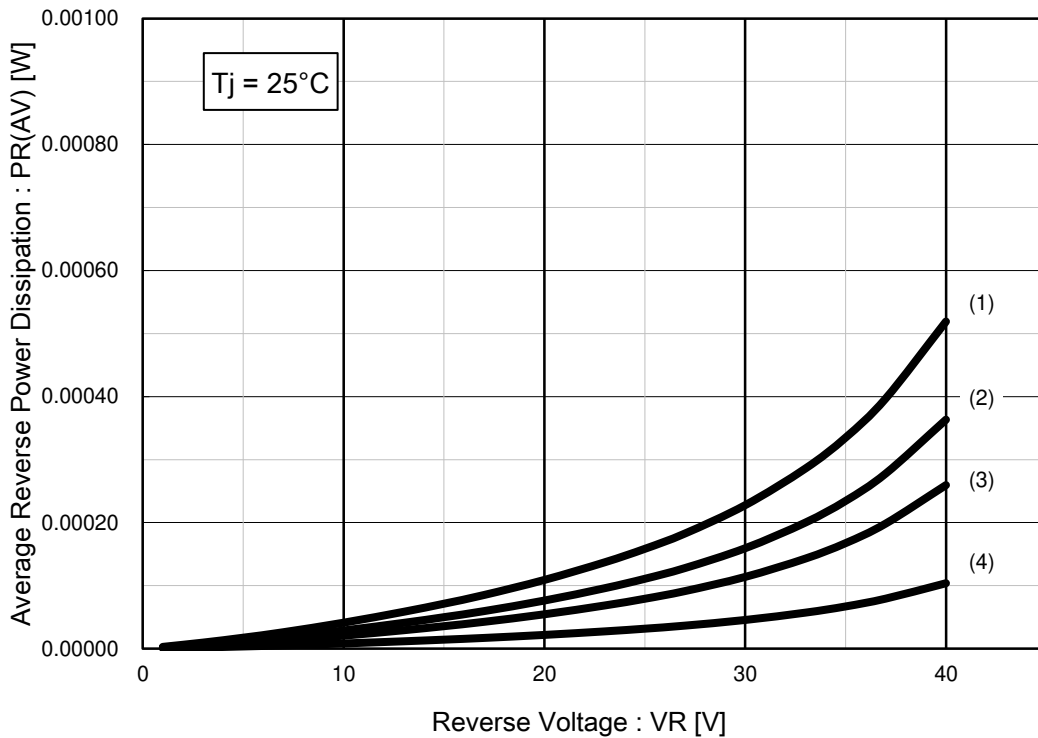


Electrical Characteristics Technical Data (Reference)

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



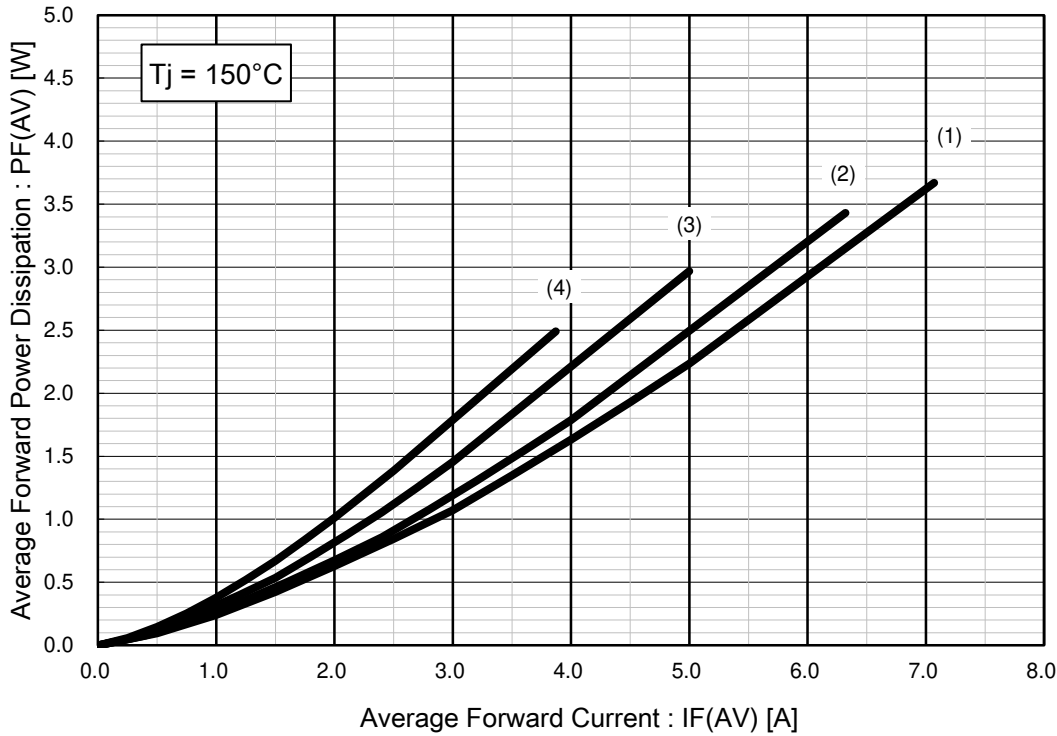
PR(AV) - VR / Typical Data



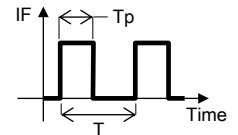


Electrical Characteristics Technical Data (Reference)

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



(Waveform definition)

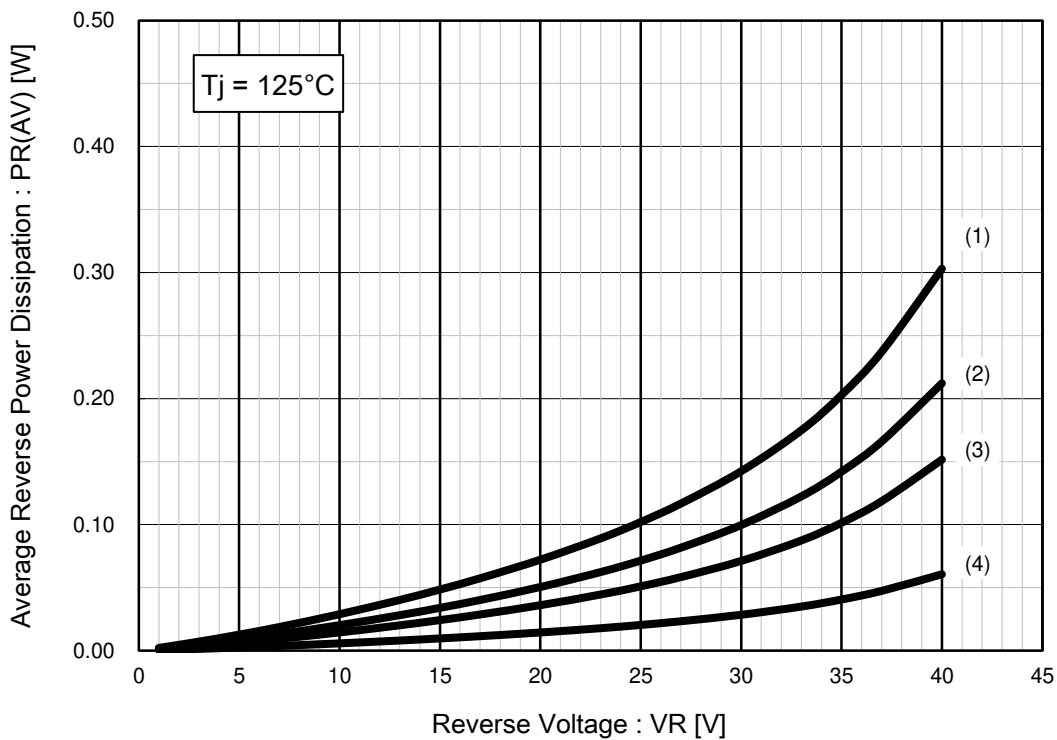


$$\text{Duty Cycle : } \sigma = \frac{T_p}{T}$$

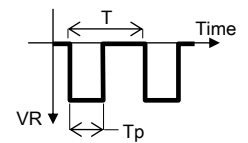
(Graph legends)

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

PR(AV) - VR / Typical Data



(Waveform definition)



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

(Graph legends)

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



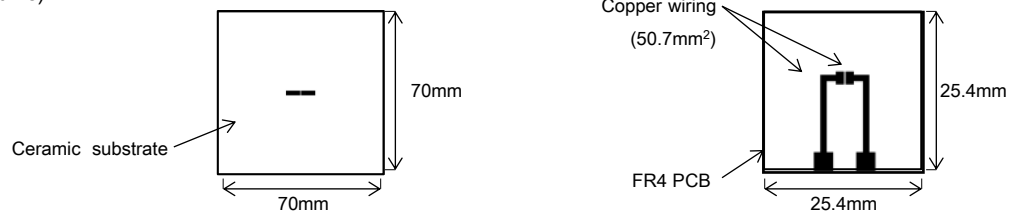
■ Thermal Characteristics

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	-	8	-	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient *1	$R_{th(j-a)}$	$T_a = 25^\circ\text{C}$ , in free air	-	43	-	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient *2	$R_{th(j-a)}$	$T_a = 25^\circ\text{C}$ , in free air	-	250	-	$^\circ\text{C/W}$

Note) \*1: Device mounted on Ceramic substrate (70mm×70mm×t1.0mm).

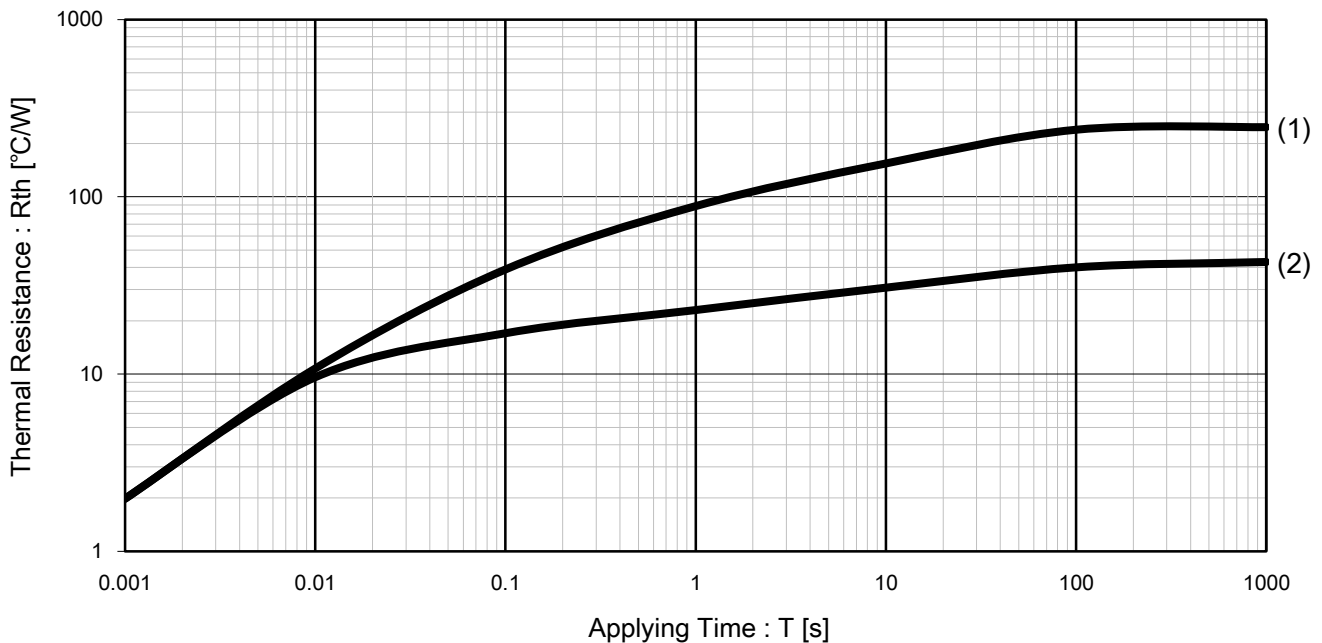
\*2: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (50.7mm<sup>2</sup> area, 36μm thick).

(Evaluation board outline)

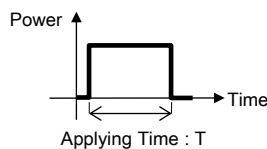


Thermal Characteristics Technical Data (Reference)

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



Note) \*1: Single pulse measurement  
(Waveform definition)



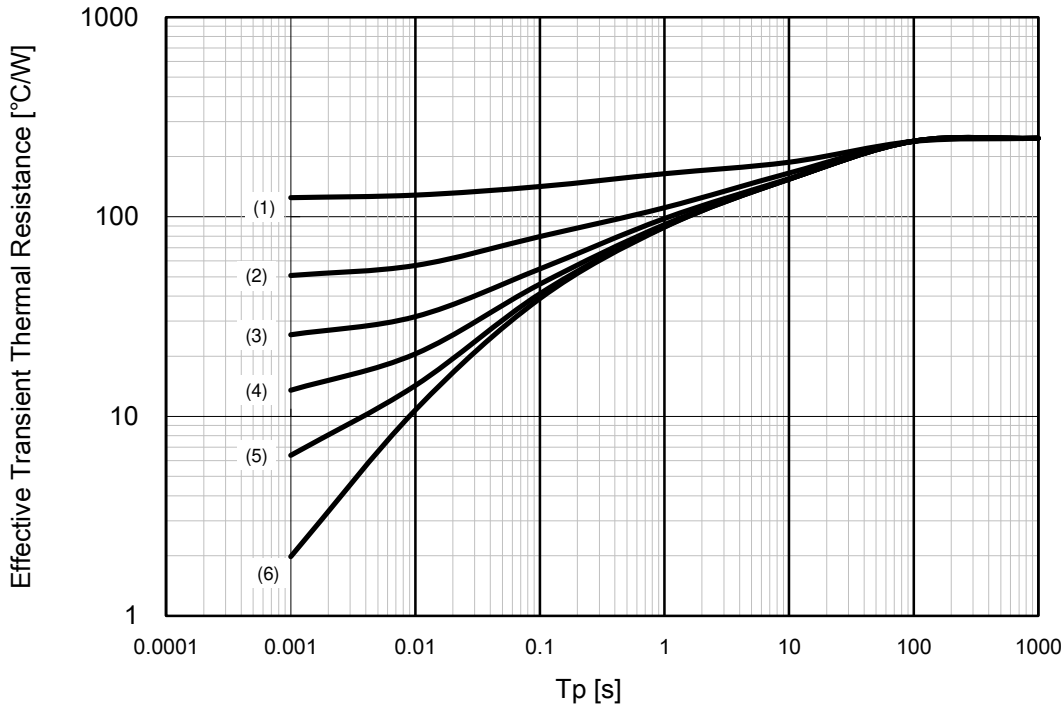
(Graph legends)

(1)	Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (50.7mm <sup>2</sup> area, 36μm thick).
(2)	Device mounted on Ceramic substrate (70mm×70mm×t1.0mm).

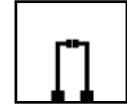


**Thermal Characteristics Technical Data (Reference)**

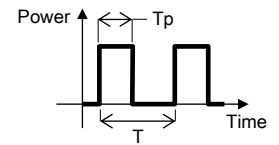
**Effective Transient Thermal Resistance -  $T_p^{*1}$  / Typical Data**



(Evaluation board outline)



(Waveform definition)

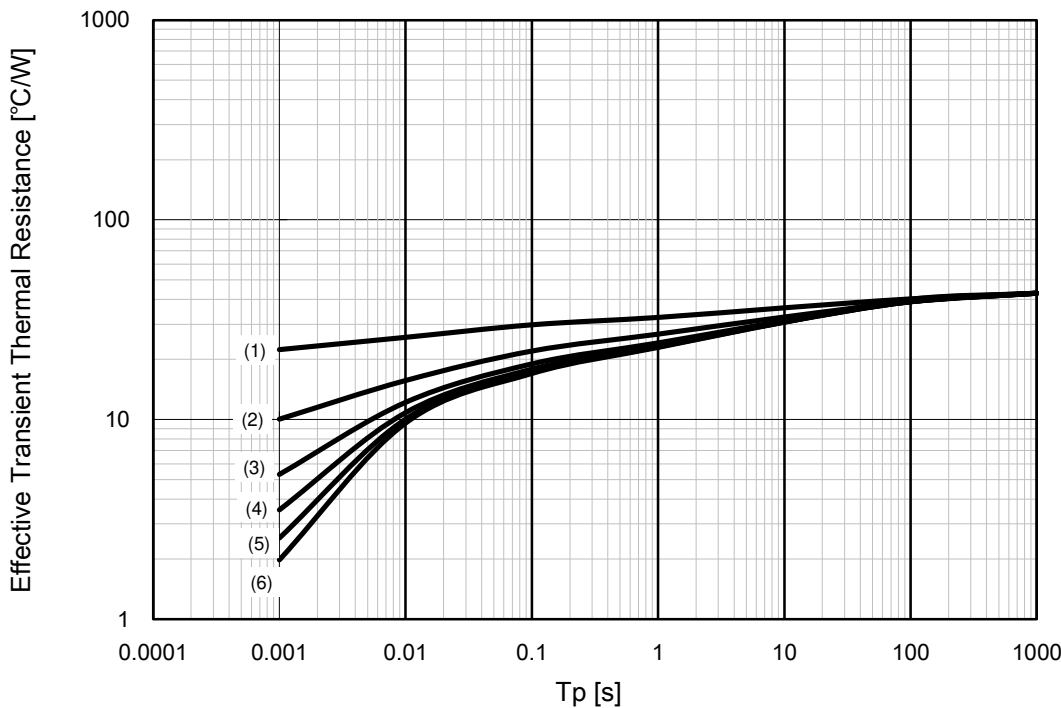


Duty Cycle :  $\sigma = \frac{T_p}{T}$

(Graph legends)

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

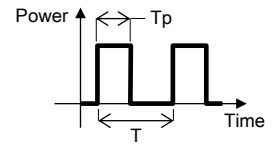
**Effective Transient Thermal Resistance -  $T_p^{*2}$  / Typical Data**



(Evaluation board outline)



(Waveform definition)



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

(Graph legends)

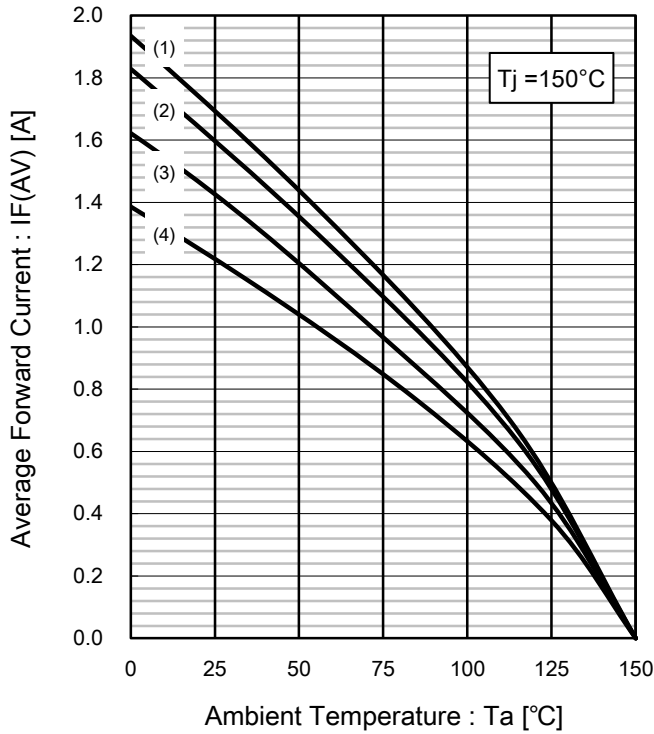
(1)	$\sigma = 0.5$
(2)	$\sigma = 0.2$
(3)	$\sigma = 0.1$
(4)	$\sigma = 0.05$
(5)	$\sigma = 0.02$
(6)	$\sigma = 0$

Note) \*1: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (50.7mm<sup>2</sup> area, 36μm thick).  
\*2: Device mounted on Ceramic substrate (70mm×70mm×1.0mm).

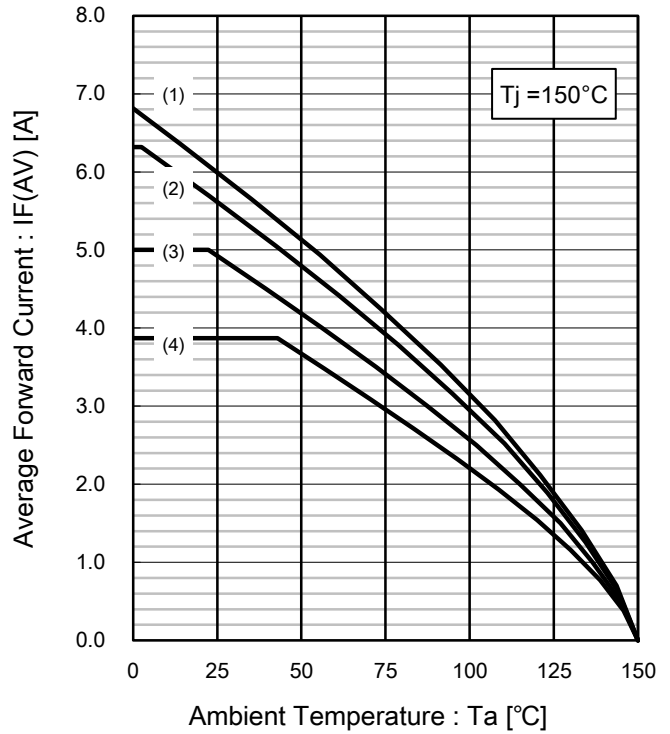


Power Derating Technical Data (Reference)

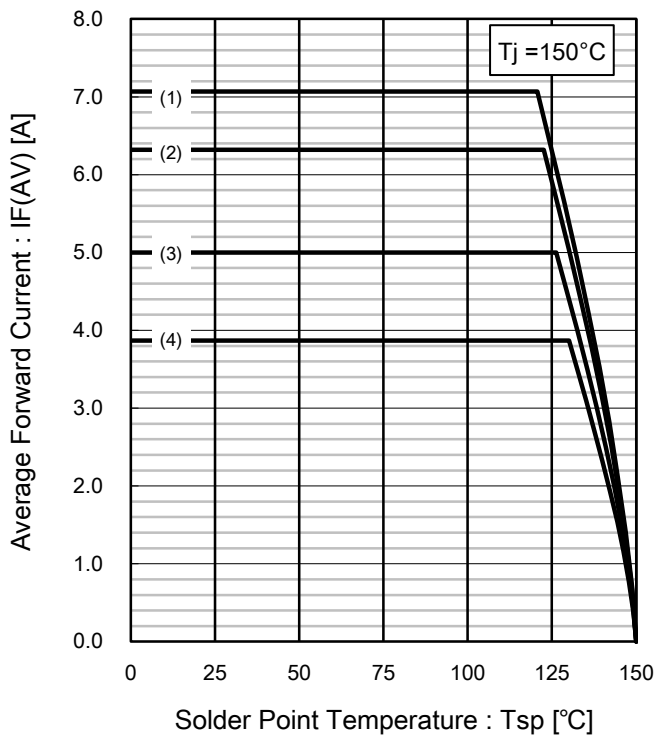
IF(AV) - Ta<sup>\*1</sup> / Typical Data



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



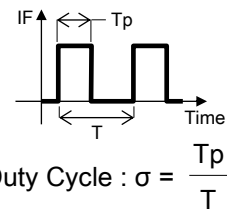
IF(AV) - Tsp / Typical Data



(Graph legends)

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

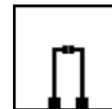
(Waveform definition)



Note)

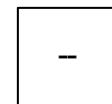
\*1: Device mounted on a FR4 PCB (25.4mm×25.4mm, 1mm thick), copper wiring (50.7mm<sup>2</sup> area, 36μm thick).

(Evaluation board outline)



\*2: Device mounted on Ceramic substrate (70mm×70mm×1.0mm).

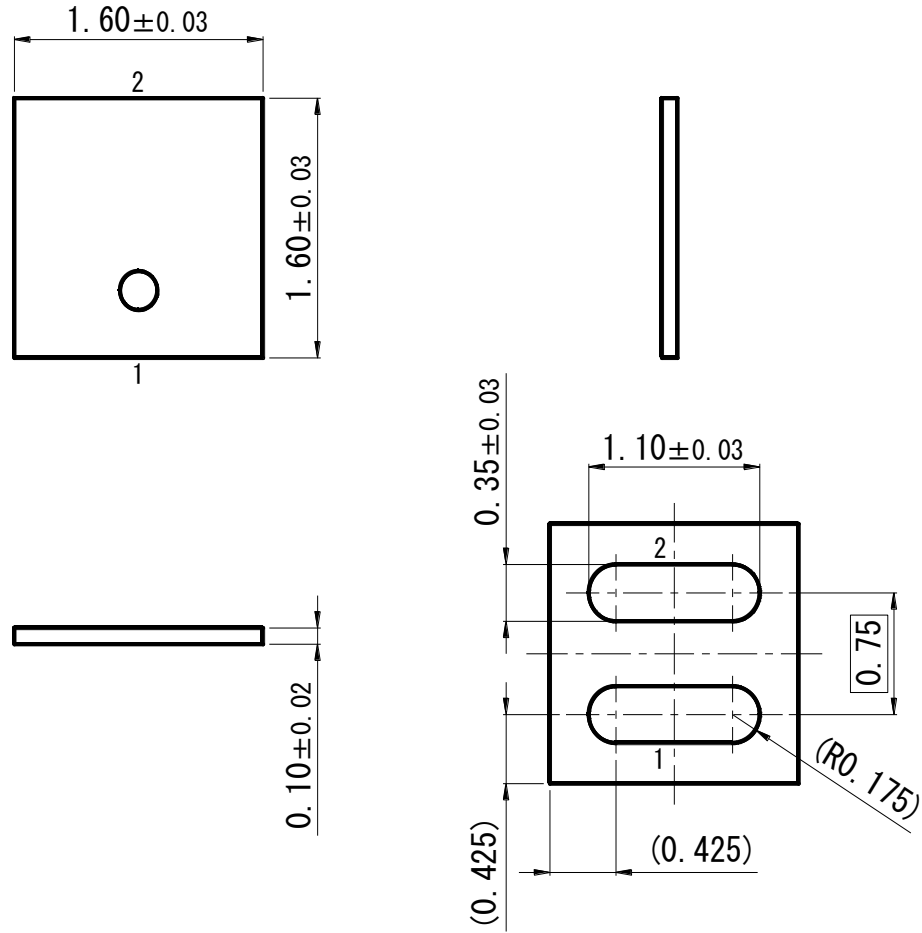
(Evaluation board outline)





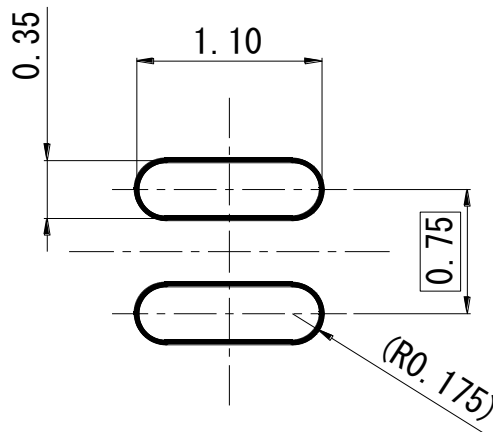
DCSP1616010-N1

Unit: mm



■ Land Pattern (Reference)

Unit: mm





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