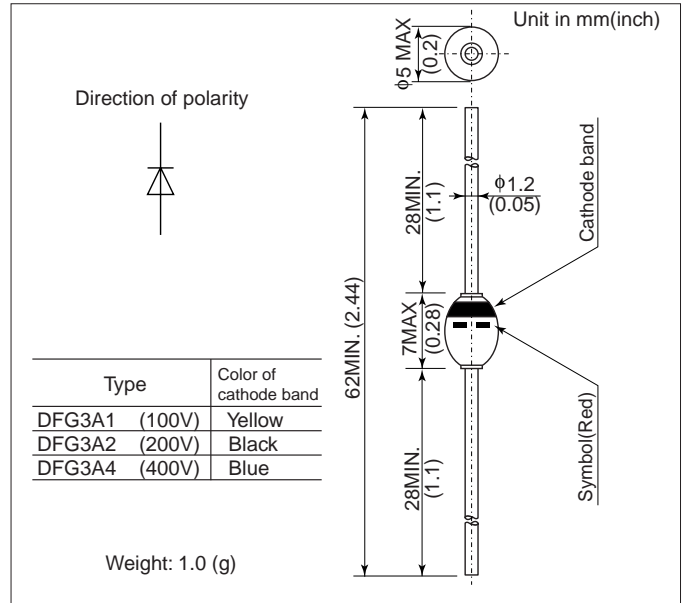


# DFG3A

## FEATURES

- For high speed switching.
- Diffused-junction. Glass passivated and encapsulated.

## OUTLINE DRAWING



## ABSOLUTE MAXIMUM RATINGS

| Items                                 | Type             |                  | DFG3A1  | DFG3A2 | DFG3A4 |
|---------------------------------------|------------------|------------------|---|--------|--------|
| Repetitive Peak Reverse Voltage       | $V_{RRM}$        | V                | 100   | 200    | 400    |
| Average Forward Current               | $I_{F(AV)}$      | A                | 3.0 (Single-phase half sine wave 180° conduction )<br>TL = 60°C, Lead length = 10mm |        |        |
| Surge(Non-Repetitive) Forward Current | $I_{FSM}$        | A                | 70 ( Without PIV, 10ms conduction, T <sub>j</sub> = 150°C start )                   |        |        |
| I <sup>2</sup> t Limit Value          | I <sup>2</sup> t | A <sup>2</sup> s | 19.6 ( Time = 2 ~ 10ms, I = RMS value )   |        |        |
| Operating Junction Temperature        | T <sub>j</sub>   | °C               | -65 ~ +150  |        |        |
| Storage Temperature                   | T <sub>stg</sub> | °C               | -65 ~ +150  |        |        |

Notes (1) Lead mounting : Lead temperature 300°C max. to 3.2mm from body for 5sec. max..

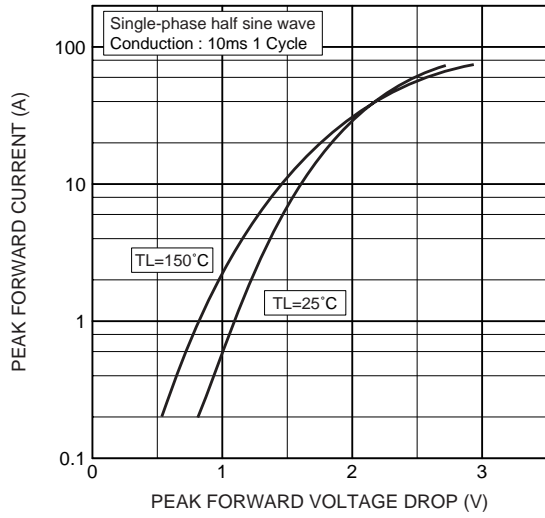
(2) Mechanical strength : Bending 90°×2 cycles or 180°×1 cycle, Tensile 3kg, Twist 90°×1 cycle.

## CHARACTERISTICS(T<sub>L</sub>=25°C)

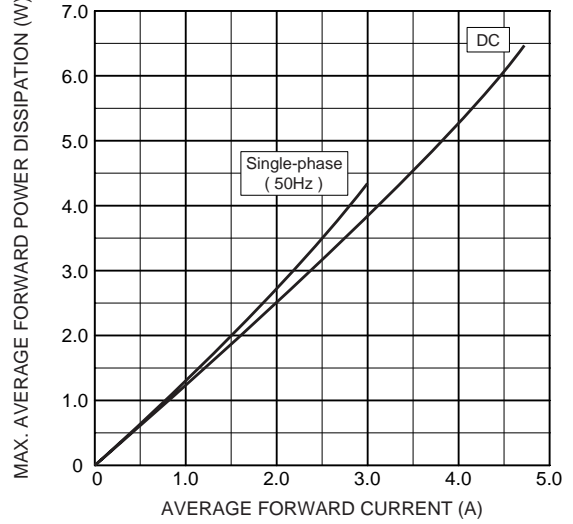
| Items                          | Symbols       | Units | Min. | Typ. | Max. | Test Conditions                                       |
|--------------------------------|---------------|-------|------|------|------|---|
| Peak Reverse Current           | $I_{RRM}$     | μA    | —    | 2.0  | 10   | Rated $V_{RRM}$                                       |
| Peak Forward Voltage           | $V_{FM}$      | V     | —    | —    | 1.3  | $I_{FM}=3.0A_p$ , Single-phase half sine wave 1 cycle |
| Reverse Recovery Time          | trr           | μs    | —    | —    | 0.1  | $I_F=0.5A$ , $I_{rp}=1.0A$ , 25% Recovery             |
| Steady State Thermal Impedance | $R_{th(j-a)}$ | °C/W  | —    | —    | 50   | Lead length = 10 mm                                   |
|                                | $R_{th(j-l)}$ |       |      |      | 20   |   |

# DFG3A

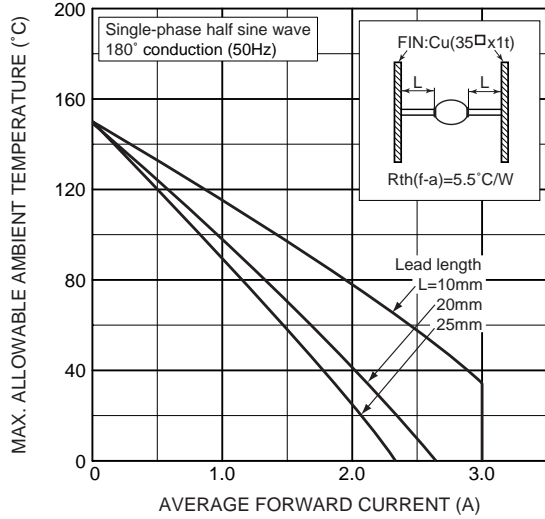
Forward characteristics



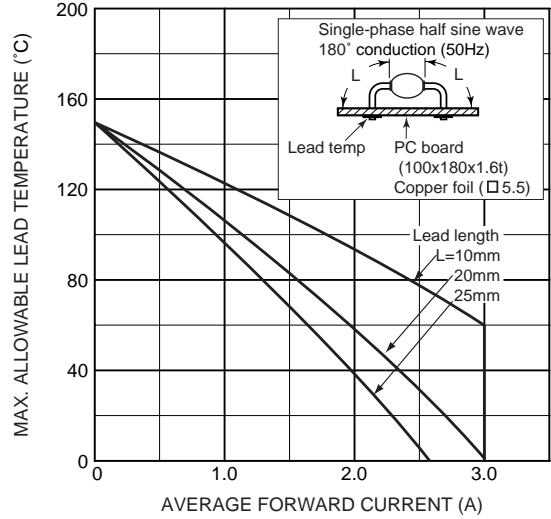
Max. average forward power dissipation (Resistive or inductive load)



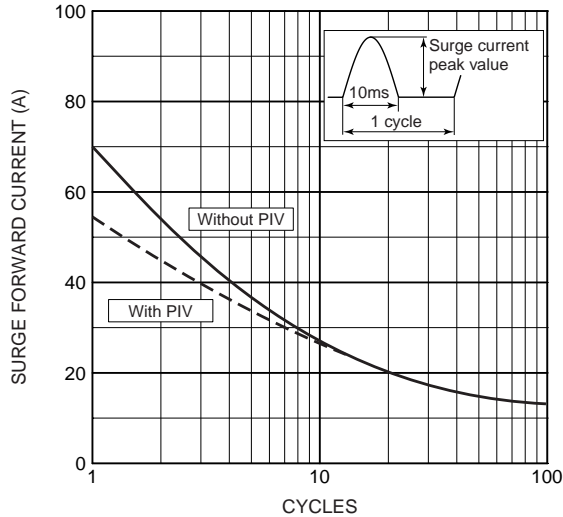
Max. allowable ambient temperature (Resistive or inductive load)



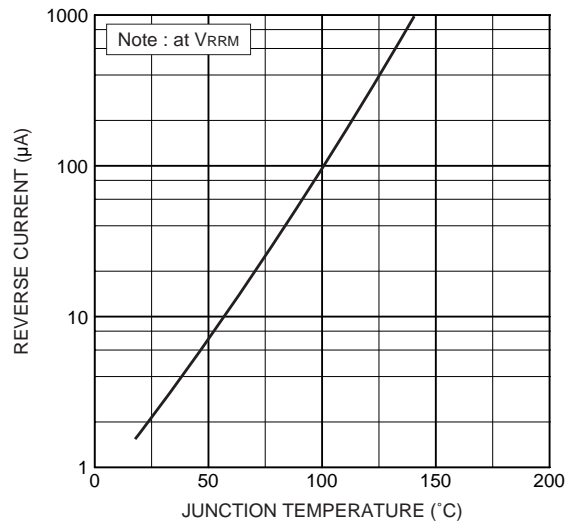
Max. allowable lead temperature (Resistive or inductive load)



Surge forward current characteristic (Non-repetitive)

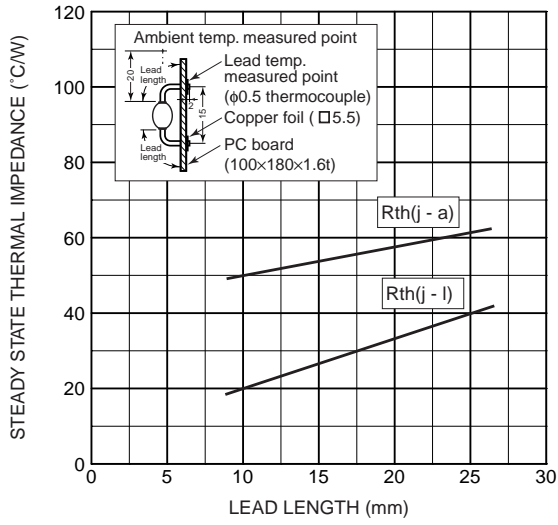


Typ. Reverse current vs. junction temperature

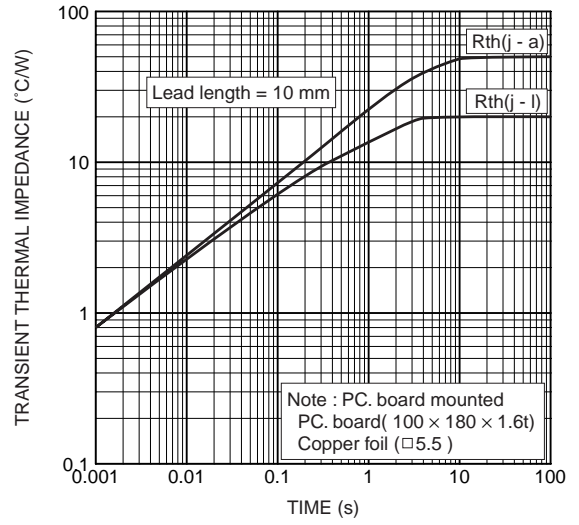


# DFG3A

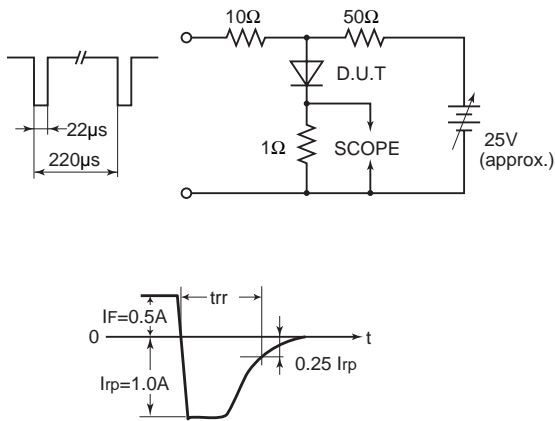
## Steady state thermal impedance



## Transient thermal impedance



## Reverse recovery time ( $t_{rr}$ ) test circuit



# HITACHI POWER SEMICONDUCTORS

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