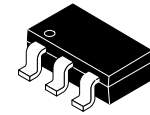


# Shottky Barrier Diode, Low VF, Single CPH6

30 V, 3.0 A

## SS3003CH



CPH6  
CASE 318BD

### Features

- Small Switching Noise
- Low Forward Voltage ( $I_F = 3\text{ A}$ ,  $V_F \text{ Max} = 0.42\text{ V}$ )
- Ultra-small Package Permitting Applied Sets to be Small and Slim
- Halogen Free Compliance
- These are Pb-Free Devices

### Applications

- High Frequency Rectification (Switching Regulators, Converters, Choppers)

### ABSOLUTE MAXIMUM RATINGS (at $T_A = 25^\circ\text{C}$ )

| Symbol    | Parameter                                | Conditions               | Ratings     | Unit             |
|-----------|--|--------------------------|-------------|------------------|
| $V_{RRM}$ | Repetitive Peak Reverse Voltage          |                          | 30          | V                |
| $V_{RSM}$ | Nonrepetitive Peak Reverse Surge Voltage |                          | 30          | V                |
| $I_O$     | Average Output Current                   |                          | 3.0         | A                |
| $I_{FSM}$ | Surge Forward Current                    | 50 Hz sine wave, 1 cycle | 20          | A                |
| $T_j$     | Junction Temperature                     |                          | -55 to +125 | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature                      |                          | -55 to +125 | $^\circ\text{C}$ |

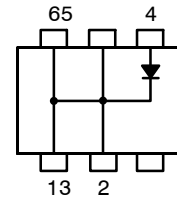
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ )

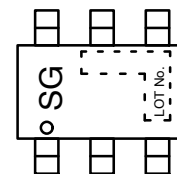
| Symbol        | Parameter                 | Test Conditions  | Min | Typ   | Max   | Unit               |
|---------------|---------------------------|--|-----|-------|-------|--------------------|
| $V_R$         | Reverse Voltage           | $I_R = 2.0\text{ mA}$  | 30  | -     | -     | V                  |
| $V_F$         | Forward Voltage           | $I_F = 2.0\text{ A}$   | -   | 0.335 | 0.385 | V                  |
|               |                           | $I_F = 3.0\text{ A}$   | -   | 0.37  | 0.42  | V                  |
| $I_R$         | Reverse Current           | $V_R = 15\text{ V}$  | -   | -     | 1.4   | mA                 |
| C             | Interterminal Capacitance | $V_R = 10\text{ V}$ , $f = 1\text{ MHz}$                                     | -   | 90    | -     | pF                 |
| $t_{rr}$      | Reverse Recovery Time     | $I_F = I_R = 100\text{ mA}$  | -   | -     | 20    | ns                 |
| $R_{th(j-a)}$ | Thermal Resistance        | When mounted on ceramic substrate ( $900\text{ mm}^2 \times 0.8\text{ mm}$ ) | -   | 50    | -     | $^\circ\text{C/W}$ |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

### ELECTRICAL CONNECTION



### MARKING DIAGRAM



### ORDERING INFORMATION

| Device        | Package                     | Shipping†           |
|---------------|-----------------------------|---------------------|
| SS3003CH-TL-E | CPH6 (Pb-Free)              | 3 000 / Tape & Reel |
| SS3003CH-TL-W | CPH6 (Pb-Free, Halide Free) | 3 000 / Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, [BRD8011/D](#).

# SS3003CH

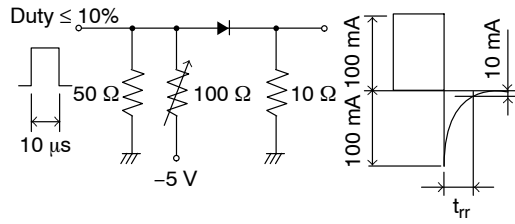


Figure 1.  $t_{rr}$  Test Circuit

## TYPICAL PERFORMANCE CHARACTERISTICS

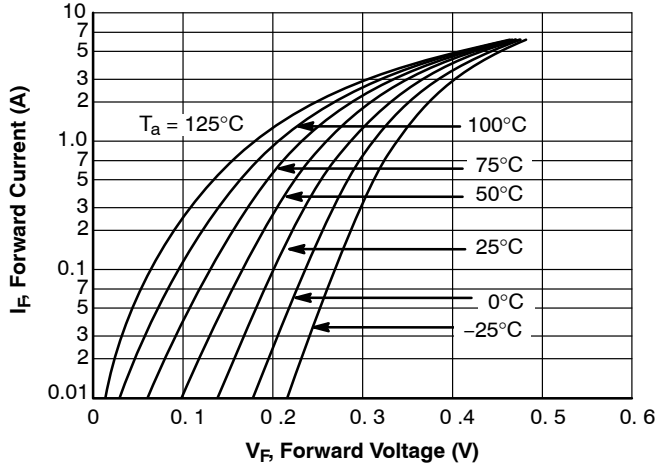


Figure 2.  $I_F - V_F$

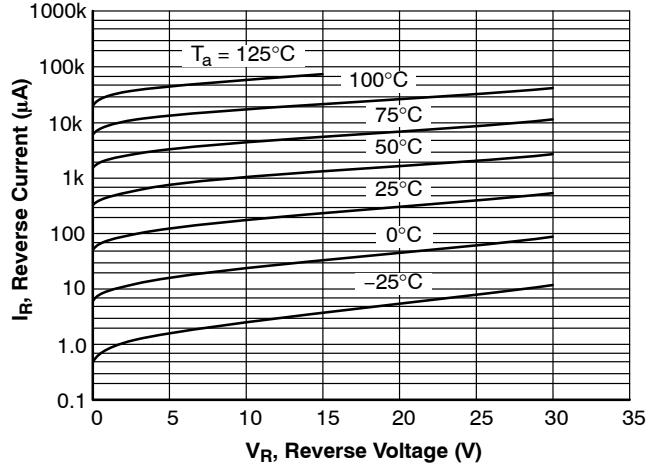


Figure 3.  $I_R - V_R$

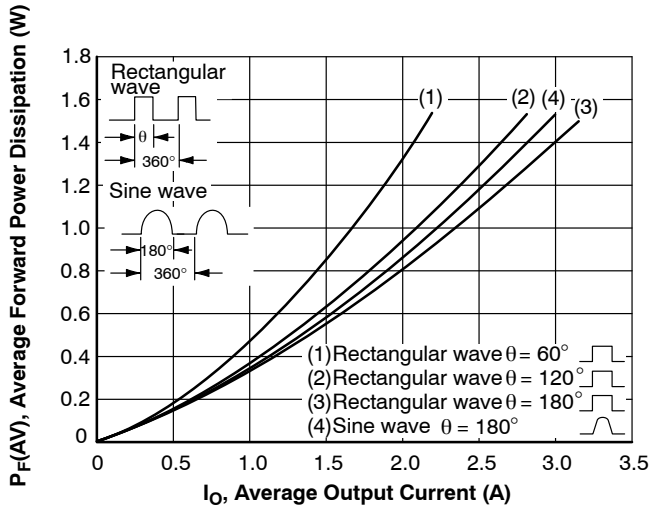


Figure 4.  $P_F(AV) - I_O$

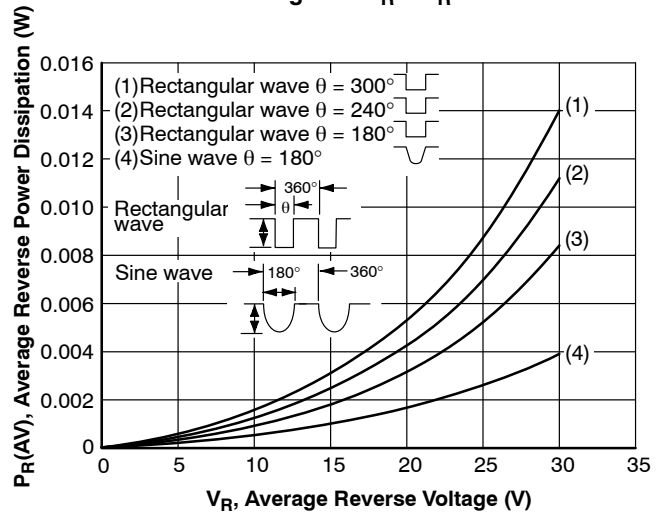


Figure 5.  $P_R(AV) - V_R$

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

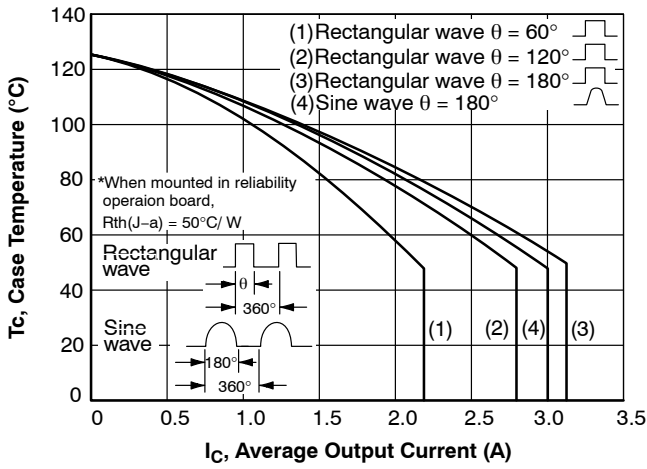


Figure 6.  $T_c - I_o$

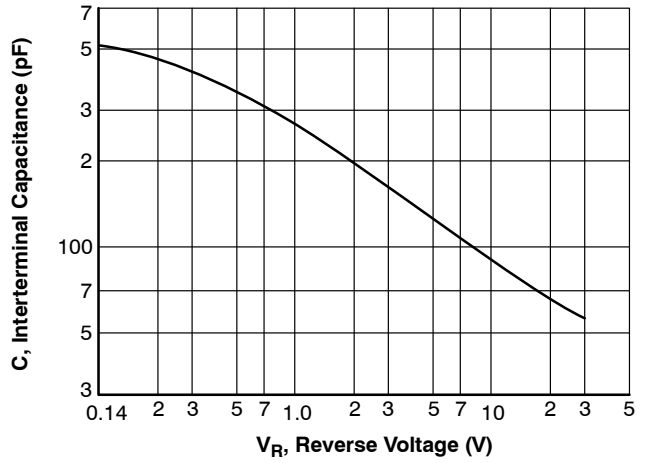


Figure 7.  $C - V_R$

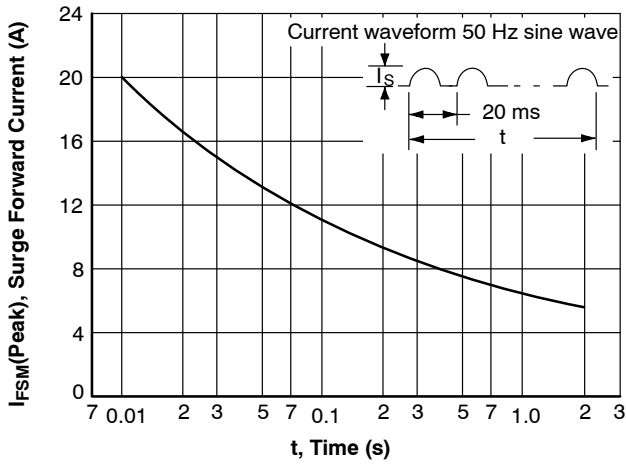
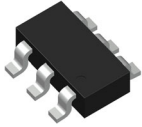
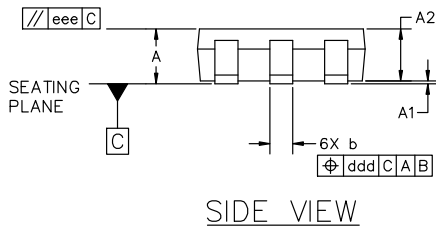
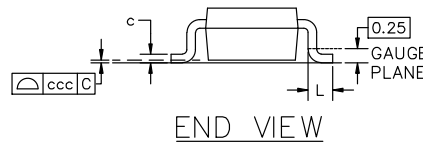
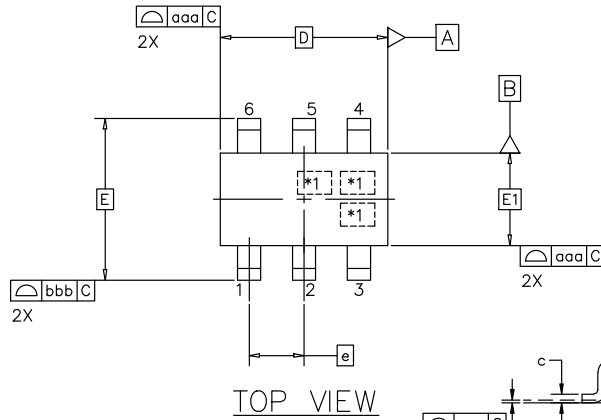


Figure 8.  $I_{FSM} - t$



**CPH6 2.90x1.60x0.90, 0.95P**  
**CASE 318BD**  
**ISSUE A**

DATE 20 SEPT 2024

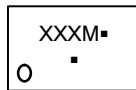


| MILLIMETERS                 |          |      |      |
|-----------------------------|----------|------|------|
| DIM                         | MIN      | NOM  | MAX  |
| A                           | 0.85     | 0.95 | 1.05 |
| A1                          | 0.00     | 0.05 | 0.10 |
| A2                          | 0.85     | 0.90 | 0.95 |
| b                           | 0.30     | 0.40 | 0.50 |
| c                           | 0.10     | 0.15 | 0.25 |
| D                           | 2.90 BSC |      |      |
| E                           | 2.80 BSC |      |      |
| E1                          | 1.60 BSC |      |      |
| e                           | 0.95 BSC |      |      |
| L                           | 0.10     | 0.20 | 0.30 |
| TOLERANCE FORM AND POSITION |          |      |      |
| aaa                         | 0.10     |      |      |
| bbb                         | 0.15     |      |      |
| ccc                         | 0.05     |      |      |
| ddd                         | 0.10     |      |      |
| eee                         | 0.10     |      |      |

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS
3. \*1 IS FOR LOT INDICATION

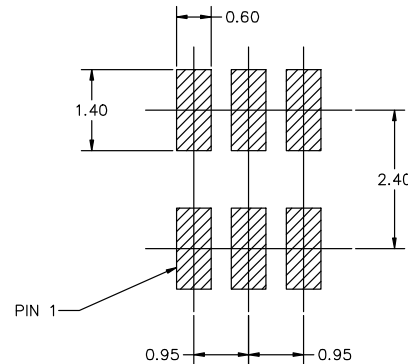
**GENERIC MARKING DIAGRAM\***



- XXX = Specific Device Code
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



RECOMMENDED MOUNTING FOOTPRINT

\* For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

|                         |                                   |  |
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