

# HTV

- Chip type with 8Ø~16Ø, 125°C, 5,000 hours, long life product.
- Designed For automobile modules and other high temperature applications.
- Peak acceleration: 30G
- RoHS Compliance.
- 8Ø~16ØV-Chip型，125°C，5000小時長壽命產品。
- 專為汽車模組和其它高溫應用設計。
- 峰值加速度：30G。

## SPECIFICATIONS

| Items 項目                              | Characteristics 特性                                                                                                                                                                                                                                                                 |                                         |                    |                                 |      |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------|---------------------------------|------|
| Capacitance Tolerance<br>靜電容量誤差       | ± 20%(120Hz,20°C)                                                                                                                                                                                                                                                                  |                                         |                    |                                 |      |
| Operating Temperature Range<br>適用溫度範圍 | -40 ~ +125°C                                                                                                                                                                                                                                                                       |                                         |                    |                                 |      |
| Rated Voltage Range<br>額定電壓範圍         | 16~50VDC                                                                                                                                                                                                                                                                           |                                         |                    |                                 |      |
| Capacitance Range<br>靜電容量範圍           | 33~2200µF                                                                                                                                                                                                                                                                          |                                         |                    |                                 |      |
| Leakage Current<br>洩漏電流               | I ≤ 0.01CV or 3(µA) , which is greater. ( After 2 minutes application of DC rated voltage, at 20°C)                                                                                                                                                                                |                                         |                    |                                 |      |
| Dissipation Factor<br>散逸因素( tan δ)    | Measurement Frequency: 120Hz. Temperature: 20°C                                                                                                                                                                                                                                    |                                         |                    |                                 |      |
|                                       | Rated Voltage(V)                                                                                                                                                                                                                                                                   | 16                                      | 25                 | 35                              | 50   |
|                                       | tan δ(Max)                                                                                                                                                                                                                                                                         | 0.20                                    | 0.20               | 0.14                            | 0.14 |
| Low Temperature Stability<br>低溫特性     | Measurement Frequency: 120Hz.                                                                                                                                                                                                                                                      |                                         |                    |                                 |      |
|                                       | Rated Voltage(V)                                                                                                                                                                                                                                                                   | 16                                      | 25                 | 35                              | 50   |
|                                       | Impedance Ratio(Max)<br>阻抗比率(最大值)                                                                                                                                                                                                                                                  | Z(-25°C)/Z(20°C)                        | 5                  | 2                               | 2    |
|                                       | Z(-40°C)/Z(20°C)                                                                                                                                                                                                                                                                   | 8                                       | 4                  | 3                               | 3    |
| Load Life 負荷壽命                        | Φ8~Φ10:2000hours; Φ12.5:3000hours ; Φ16: 5000hours with application of rated voltage at 125°C                                                                                                                                                                                      |                                         |                    |                                 |      |
|                                       | Capacitance Change                                                                                                                                                                                                                                                                 | Within ±30% of Initial Value            |                    |                                 |      |
|                                       | tan δ                                                                                                                                                                                                                                                                              | 300% or less of Initial Specified Value |                    |                                 |      |
|                                       | Leakage Current                                                                                                                                                                                                                                                                    | Initial Specified Value or less         |                    |                                 |      |
| Shelf Life 放置壽命                       | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours 125°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4. |                                         |                    |                                 |      |
|                                       | Capacitance Change                                                                                                                                                                                                                                                                 | Within ±300% of Initial Value           |                    |                                 |      |
|                                       | tan δ                                                                                                                                                                                                                                                                              | 300% or less of Initial Specified Value |                    |                                 |      |
|                                       | Leakage Current                                                                                                                                                                                                                                                                    | Initial Specified Value or less         |                    |                                 |      |
| Resistance to Soldering Heat<br>焊錫耐熱性 | The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds.                                                                                                                                                                                                  |                                         | Capacitance Change | Within ± 10% of Initial Value   |      |
|                                       | After removing from the hot plate and restored at room temperature they meet the characteristics requirements listed at right.                                                                                                                                                     |                                         | tan δ              | Initial Specified Value         |      |
|                                       |                                                                                                                                                                                                                                                                                    |                                         | Leakage Current    | Initial Specified Value or less |      |
| Standards 參照標準                        | Black print on the case top                                                                                                                                                                                                                                                        |                                         |                    |                                 |      |

## Frequency Coefficient of Permissible Ripple Current

| Frequency (Hz)   | 100 ≤ F < 1K | 1K ≤ F < 10K | 10K ≤ F < 100K | 100K ≤ F |
|------------------|--------------|--------------|----------------|----------|
| Capacitance (µF) |              |              |                |          |
| 全系列              | 0.60         | 0.85         | 0.93           | 1.00     |

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise.

When long life performance is required in actual use, the rms ripple current has to be reduced.

注：以上所提供的設計及特性參數以供參考，若有修改不作預先通知，如有使用上任何疑問，請在來函前與我們聯繫，以便提供技術上的協助。

**DIMENSIONS(mm)**

■ Chip Type

Fig.1  $\varnothing D=8\sim 10\text{mm}$

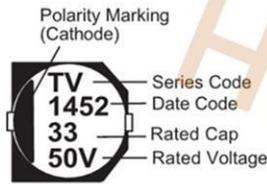
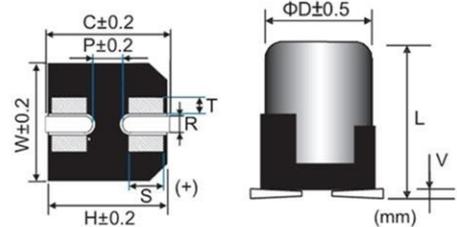
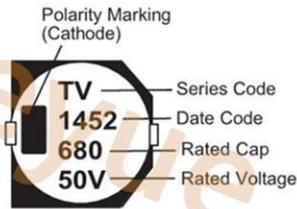


Fig.2  $\varnothing D \geq 12.5\text{mm}$



| Size      | $\varnothing D$ | L        | W    | H    | C    | R       | P   | S   | T   | Vmax |
|-----------|-----------------|----------|------|------|------|---------|-----|-----|-----|------|
| 8×10.5    | 8.0             | 10.5±0.5 | 8.3  | 8.3  | 9.0  | 0.7~1.1 | 3.2 | 0.7 | 1.6 | 0.3  |
| 10×10.5   | 10.0            | 10.5±0.5 | 10.3 | 10.3 | 11.0 | 1.0~1.4 | 4.5 | 0.7 | 1.6 | 0.3  |
| 12.5×13.5 | 12.5            | 13.5±1   | 13.5 | 13.5 | 14.2 | 1.0~1.4 | 4.5 | 2.2 | 2.4 | 0.4  |
| 16×16.5   | 16.0            | 16.5±1   | 17.0 | 17.0 | 18.0 | 1.8~2.1 | 6.4 | 3.0 | 2.0 | 0.4  |

**STANDARD RATINGS**

D×L(mm) ; R.C.(mA rms) at 125°C 100KHz, IMP( $\Omega$  max) at 20°C 100KHz.

| Cap<br>( $\mu\text{F}$ ) | V<br>Item | 16.0  |      |           | 25     |      |           | 35      |      |         | 50        |      |      |
|--------------------------|-----------|-------|------|-----------|--------|------|-----------|---------|------|---------|-----------|------|------|
|                          |           | D x L | R.C. | IMP       | D x L  | R.C. | IMP       | D x L   | R.C. | IMP     | D x L     | R.C. | IMP  |
| 47                       |           |       |      |           |        |      |           |         |      |         | 8x10.5    | 250  | 0.5  |
| 100                      |           |       |      |           |        |      |           | 8x10.5  | 300  | 0.18    | 10x10.5   | 350  | 0.30 |
| 160                      |           |       |      |           |        |      |           | 8x10.5  | 300  | 0.18    |           |      |      |
| 220                      |           |       |      |           | 8x10.5 | 300  | 0.18      | 10x10.5 | 500  | 0.11    | 12.5x13.5 | 700  | 0.15 |
| 270                      |           |       |      |           | 8x10.5 | 300  | 0.18      |         |      |         |           |      |      |
| 300                      |           |       |      |           |        |      |           | 10x10.5 | 500  | 0.11    |           |      |      |
| 330                      | 8x10.5    | 300   | 0.18 | 10x10.5   | 500    | 0.11 | 12.5x13.5 | 1200    | 0.08 |         |           |      |      |
| 390                      | 8x10.5    | 300   | 0.18 |           |        |      |           |         |      |         |           |      |      |
| 470                      | 10x10.5   | 500   | 0.11 | 10x10.5   | 500    | 0.11 | 12.5x13.5 | 1200    | 0.08 | 16x16.5 | 1000      | 0.09 |      |
| 620                      |           |       |      |           |        |      | 12.5x13.5 | 1200    | 0.08 |         |           |      |      |
| 680                      | 10x10.5   | 500   | 0.11 | 12.5x13.5 | 1200   | 0.08 | 16x16.5   | 1800    | 0.05 |         |           |      |      |
| 910                      |           |       |      | 12.5x13.5 | 1200   | 0.08 |           |         |      |         |           |      |      |
| 1000                     | 12.5x13.5 | 1200  | 0.08 | 16x16.5   | 1800   | 0.05 |           |         |      |         |           |      |      |
| 1500                     | 12.5x13.5 | 1200  | 0.08 | 16x16.5   | 1800   | 0.05 |           |         |      |         |           |      |      |
| 2200                     | 16x16.5   | 1800  | 0.05 |           |        |      |           |         |      |         |           |      |      |



注：以上所提供的设计及特性参数仅供参考，任何修改不作预先通知，如有使用上任何疑问，请在采购前与我们联系，以便提供技术上的协助。