SPECIFICATION

600V Grade polyvinyl chloride insulated and sheathed power cable
VCT

MITSUBOSHI CO., LTD.
1. Scope

This Specification covers quality level of VCT used in power supply circuit of portable electrical machinery and apparatus not higher than 600V.

2. Construction and Materials

2.1 Conductor
A stranded wire is composed of annealed copper wire specified in JIS C 3102.

2.2 Insulation
Polyvinyl chloride compound
The average thickness of the insulation is not less than 90% of the value in Attached Tables. The minimum thickness of the insulation is not less than 80% of the value in Attached Tables.

2.3 Identification of cores
Identification of cores are made by the color of insulation.

2.4 Stranding of cores
As the need arises, cores are stranded with a suitable filler.

2.5 Sheath
Polyvinyl chloride compound
The average thickness of sheath is not less than 90% of the value in Attached Tables. The minimum thickness of sheath is not less than 85% of the value in Attached Tables.
## 3. Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>The surface be smooth and there is not a flaw in case of use.</td>
<td>JIS C 3005 4.1</td>
</tr>
<tr>
<td>Construction</td>
<td>It depends on the Attached Table with structure and size.</td>
<td>JIS C 3005 4.3</td>
</tr>
<tr>
<td>Conductor resistance (at 20℃)</td>
<td>Not more than the value in Attached Table.</td>
<td>JIS C 3005 4.4</td>
</tr>
<tr>
<td>Dielectric withstand voltage (in water)</td>
<td>Capable of withstanding 3000V for 1min.</td>
<td>JIS C 3005 4.6 a</td>
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<tr>
<td>Insulation resistance (at 20℃)</td>
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</table>

### a) Tensile properties

<table>
<thead>
<tr>
<th>Item</th>
<th>Insulation</th>
<th>Sheath</th>
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<tbody>
<tr>
<td>Tensile strength</td>
<td>Not less than 10MPa</td>
<td>Not less than 10MPa</td>
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<td>Elongation</td>
<td>Not less than 100%</td>
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### b) Thermal aging

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<tr>
<td>Tensile strength</td>
<td>Not less than 85% of the value before heating</td>
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### c) Oil resistance

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<td>Not less than 80% of the value before oil-immersion</td>
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<td>Elongation</td>
<td>Not less than 85% of the value before oil-immersion</td>
<td>Not less than 60% of the value before oil-immersion</td>
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### d) Heat shock

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### e) Cold bend

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### f) Heat deformation

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### g) Flame retardance

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<td>Elongation</td>
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### h) Bending (nominal sectional area 38mm² or under)

<table>
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<td>Elongation</td>
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1) The quality characteristic to enforce inspection regularly with an in-house standard.

2) More than 22mm², not less than 80% of the value before oil-immersion

3) More than 22mm², not less than 60% of the value before oil-immersion
4. Marking on cable
The following information is continuously marked on cable.

① The symbol of the cable
② Nominal sectional area
③ Manufacturer's name or abbreviation

Example: VCT 4×2㎜²

Example: VCT 12×2㎜²

5. Length and packaging
According to the Attached Table.

6. Marking on package
The following information is marked on package.

① The symbol of the cable
② Number of cores and nominal sectional area
③ Length
④ Month and year of manufacture or Lot No.
⑤ Manufacturer's name
⑥ JET (only apply to Electrical Appliance and Material Safety Law)
## Attached Table: Construction, Size, Weight, and Electric Characteristic

### 0.75 mm²

<table>
<thead>
<tr>
<th>Number of core</th>
<th>Conductors Composition</th>
<th>Insulation Outside diameter (approx.) (mm)</th>
<th>Thickness (approx.) (mm)</th>
<th>Insulation Outside diameter (approx.) (mm)</th>
<th>Thickness (approx.) (mm)</th>
<th>Sheath Overall diameter (approx.) (mm)</th>
<th>Approx. mass (kg/km)</th>
<th>Conductor resistance 20°C (Ω/km)</th>
<th>Insulation resistance 20°C (MΩ·km)</th>
<th>Standard Unit length And packaging</th>
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### 1.25 mm²

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<th>Thickness (approx.) (mm)</th>
<th>Insulation Outside diameter (approx.) (mm)</th>
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<th>Standard Unit length And packaging</th>
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### 2 mm²

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<th>Insulation</th>
<th>Sheath</th>
<th>Overall diameter (approx.) (㎜)</th>
<th>Approx. mass (㎏/㎞)</th>
<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length and packaging</th>
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<tbody>
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### 3 mm²

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<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length and packaging</th>
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### 5 mm²

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<td>200m Drum</td>
<td></td>
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</table>

Note: The table provides specifications for electrical conductors, including conductor composition, thickness, and insulation resistance.
<table>
<thead>
<tr>
<th>Number of core</th>
<th>Conductor</th>
<th>Insulation</th>
<th>Sheath</th>
<th>Overall diameter (approx.) (㎜)</th>
<th>Approx. mass (㎏/㎞)</th>
<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length And packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(A) 50/0.45</td>
<td>3.7</td>
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<tr>
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<td>88/0.45</td>
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<td>1.4</td>
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<td>660</td>
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<tr>
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### 60mm²

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<th>Approx. mass (㎏/㎞)</th>
<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length And packaging</th>
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<td>4.1</td>
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### 80mm²

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<th>Approx. mass (㎏/㎞)</th>
<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length And packaging</th>
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<td>13.5</td>
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<td>19/34/0.45</td>
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<td>2.0</td>
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<td>4.1</td>
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### 100mm²

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<th>Sheath</th>
<th>Overall diameter (approx.) (㎜)</th>
<th>Approx. mass (㎏/㎞)</th>
<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length And packaging</th>
</tr>
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<tbody>
<tr>
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## Cable of single core

<table>
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<th>Conductors Composition</th>
<th>Outside diameter (approx.) (㎜)</th>
<th>Outside diameter (approx.) (㎜)</th>
<th>Outside diameter (approx.) (㎜)</th>
<th>Overall diameter (approx.) (㎜)</th>
<th>Approx. mass (kg/㎞)</th>
<th>Conductor resistance 20℃ (Ω/㎞)</th>
<th>Insulation resistance 20℃ (MΩ・㎞)</th>
<th>Standard Unit length And packaging</th>
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<tbody>
<tr>
<td>0.75</td>
<td>(A) 30/0.18</td>
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<td>1.25</td>
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<td>1.5</td>
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<tr>
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<td>0.8</td>
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<tr>
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<td>0.8</td>
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<td>6.1</td>
<td>1.7</td>
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<td>1.8</td>
<td>11.3</td>
<td>245</td>
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# Identification of cores

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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core color or line color/core color</td>
<td>Black</td>
<td>White</td>
<td>Red</td>
<td>Green</td>
<td>Yellow</td>
<td>Brown</td>
<td>Blue</td>
<td>Gray</td>
<td>Orange</td>
<td>Light Green</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of core</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<th>17</th>
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<th>20</th>
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<tbody>
<tr>
<td>Core color or line color/core color</td>
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<td>Light Blue</td>
<td>Black/White</td>
<td>Black/Red</td>
<td>Black/Black</td>
<td>Black/Black</td>
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<th>25</th>
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<th>27</th>
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<th>29</th>
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<tbody>
<tr>
<td>Core color or line color/core color</td>
<td>Black/Light Green</td>
<td>Black/Pink</td>
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<td>Black/Black</td>
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<td>Red/Red</td>
<td>Red/Red</td>
<td>Red/Red</td>
<td>Red/Red</td>
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<table>
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<th>Number of core</th>
<th>11</th>
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<th>15</th>
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<th>18</th>
<th>19</th>
<th>20</th>
</tr>
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<tbody>
<tr>
<td>Core color or line color/core color</td>
<td>Black</td>
<td>White</td>
<td>Red</td>
<td>Green</td>
<td>Yellow</td>
<td>Brown</td>
<td>Blue</td>
<td>Gray</td>
<td>Orange</td>
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<tbody>
<tr>
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<td>Black/Pink</td>
<td>Black/Light Blue</td>
<td>Black/Black</td>
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<td>Red/Red</td>
<td>Red/Red</td>
<td>Red/Red</td>
<td>Red/Red</td>
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