ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
COMPLEMENTARY TRANSISTORS

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CMPT3904E and CMPT3906E are Enhanced versions of the CMPT3904 and CMPT3906 complementary switching transistors in a SOT-23 surface mount package, designed for small signal switching applications, interface circuit & driver circuit applications.

ENHANCED SPECIFICATIONS:
♦ BVCBO from 40V min to 60V min. (CMPT3906E)
♦ BVCEO from 5.0V min to 6.0V min. (CMPT3906E)
♦ VCE(SAT) from 0.3V max to 0.2V max. (CMPT3904E)
♦ from 0.4V max to 0.2V max. (CMPT3906E)
♦ hFE from 60 min to 70 min. (CMPT3904E) (CMPT3906E)

MAXIMUM RATINGS: (TA=25°C)
♦ Collector-Base Voltage
♦ Collector-Emitter Voltage
♦ Emitter-Base Voltage
♦ Continuous Collector Current
♦ Power Dissipation
♦ Operating and Storage Junction Temperature
♦ Thermal Resistance

ELECTRICAL CHARACTERISTICS: (TA=25°C unless otherwise noted)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>TEST CONDITIONS</th>
<th>CMPT3904E</th>
<th>CMPT3906E</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC</td>
<td>VCE=30V, VEB=3.0V</td>
<td>MIN</td>
<td>TYP</td>
</tr>
<tr>
<td>ICEV</td>
<td>60</td>
<td>115</td>
<td>90</td>
</tr>
<tr>
<td>BVCEO</td>
<td>Ic=1.0mA</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>BVEBO</td>
<td>Ic=10µA</td>
<td>6.0</td>
<td>7.5</td>
</tr>
<tr>
<td>VCE(SAT)</td>
<td>Ic=10mA, Ib=1.0mA</td>
<td>0.057</td>
<td>0.050</td>
</tr>
<tr>
<td>VCE(SAT)</td>
<td>Ic=50mA, Ib=5.0mA</td>
<td>0.100</td>
<td>0.100</td>
</tr>
<tr>
<td>VBE(SAT)</td>
<td>Ic=10mA, Ib=1.0mA</td>
<td>0.65</td>
<td>0.75</td>
</tr>
<tr>
<td>VBE(SAT)</td>
<td>Ic=50mA, Ib=5.0mA</td>
<td>0.85</td>
<td>0.85</td>
</tr>
<tr>
<td>hFE</td>
<td>VCE=1.0V, IC=0.1mA</td>
<td>90</td>
<td>240</td>
</tr>
<tr>
<td>hFE</td>
<td>VCE=1.0V, IC=1.0mA</td>
<td>100</td>
<td>235</td>
</tr>
<tr>
<td>hFE</td>
<td>VCE=1.0V, IC=10mA</td>
<td>100</td>
<td>215</td>
</tr>
<tr>
<td>hFE</td>
<td>VCE=1.0V, IC=50mA</td>
<td>70</td>
<td>110</td>
</tr>
<tr>
<td>hFE</td>
<td>VCE=1.0V, IC=100mA</td>
<td>30</td>
<td>50</td>
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</tbody>
</table>

★ Enhanced specification
ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>TEST CONDITIONS</th>
<th>MIN</th>
<th>MAX</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>f_T</td>
<td>V_CE=20V, I_C=10mA, f=100MHz</td>
<td>300</td>
<td></td>
<td>MHz</td>
</tr>
<tr>
<td>C_{ob}</td>
<td>V_CB=5.0V, I_E=0, f=1.0MHz</td>
<td>4.0</td>
<td></td>
<td>µF</td>
</tr>
<tr>
<td>C_{ib}</td>
<td>V_BE=0.5V, I_C=0, f=1.0MHz</td>
<td>12</td>
<td></td>
<td>µF</td>
</tr>
<tr>
<td>h_{ie}</td>
<td>V_CE=10V, I_C=1.0mA, f=1.0kHz</td>
<td>1.0</td>
<td>12</td>
<td>kΩ</td>
</tr>
<tr>
<td>h_{re}</td>
<td>V_CE=10V, I_C=1.0mA, f=1.0kHz</td>
<td>0.1</td>
<td>10</td>
<td>X10^4</td>
</tr>
<tr>
<td>h_oe</td>
<td>V_CE=10V, I_C=1.0mA, f=1.0kHz</td>
<td>100</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>NF</td>
<td>V_CE=5.0V, I_C=10mA,</td>
<td>4.0</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>t_d</td>
<td>V_CC=3.0V, V_BE=0.5V, I_C=10mA,</td>
<td>35</td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>t_f</td>
<td>V_CC=3.0V, V_BE=0.5V, I_C=10mA,</td>
<td>35</td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>t_s</td>
<td>V_CC=3.0V, I_C=10mA,</td>
<td>200</td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>t_f</td>
<td>V_CC=3.0V, I_C=10mA,</td>
<td>50</td>
<td></td>
<td>ns</td>
</tr>
</tbody>
</table>

SOT-23 CASE - MECHANICAL OUTLINE

DIMENSIONS

LEAD CODE:
1) Base
2) Emitter
3) Collector

MARKING CODES:
CMPT3904E: C1AE
CMPT3906E: C2AE
OUTSTANDING SUPPORT AND SUPERIOR SERVICES

PRODUCT SUPPORT
Central’s operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES
Central’s applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING
1. If requesting Tin/Lead plated devices, add the suffix “TIN/LEAD” to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix “PBFREE” to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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