RB-IGBT 900V

Switching loss characteristics vs. -VGE

Measured module: 4MBI300VG-120R1-50 (RB-IGBT=900V)
Measured condition: A-mode (T2=switching)
T_j=RT, V_{dc}=500V, I_C=300A, V_{GE}=15V, -V_{GE}=var., R_G=+1.5/-1Ω

The data below shows switching loss in dependency of the negative bias of the gate voltage signal (-VGE).
Measured module: 4MBI300VG-120R1-50 (RB-IGBT=900V)
Measured condition: B-mode (T4=switching)
  \[ T_J=RT, V_{cc}=500V, I_C=300A, V_{GE}=15V, -V_{GE}=\text{var.}, R_G=+1/-1\Omega \]

The data below shows switching loss in dependency of the negative bias of the gate voltage signal \((-V_{GE})\).
Appendix

Circuit diagram

Switching modes

<table>
<thead>
<tr>
<th>SW Mode</th>
<th>Load L</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>M – U</td>
<td>SW</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>M – U</td>
<td>OFF</td>
<td>SW</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>B</td>
<td>P – U</td>
<td>OFF</td>
<td>OFF</td>
<td>SW</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>U – N</td>
<td>OFF</td>
<td>ON</td>
<td>SW</td>
<td></td>
</tr>
</tbody>
</table>

SW: Connection to drive circuit and input gate signal
ON: Bias voltage of gate + 15V
OFF: Bias voltage of gate - 15V

\[ V_{cc1} = 2 \cdot V_{cc} \]
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