Dependence of spike voltage on gate resistance by the effect of snubber and CGE

Measured module: 4MBI300VG-120R-50
Measured condition: \(V_{dc}=400\text{V}, I_{c}=300\text{A}, V_{ge}=\pm15\text{V}, T_{j}=125^\circ\text{C}, R_g=\text{variable}\)

Dependence of spike voltage on gate resistance by the effect of snubber

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Fuji Electric
Innovating Energy Technology
Measured module: 4MBI300VG-120R-50
Measured condition: Vdc=400V, Ic=300A, Vge=+/-15V, Tj=125°C, Rg= variable

Dependence of spike voltage on gate resistance by the effect of CGE
Measured module: 4MBI300VG-120R-50
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Dependence of spike voltage on gate resistance by the effect of snubber and CGE
Definitions of switching mode

<table>
<thead>
<tr>
<th>SW mode</th>
<th>Load L</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
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</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>
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<tr>
<td></td>
<td>U-N</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>SW</td>
</tr>
</tbody>
</table>

SW: Connect to drive circuit and input gate signal  
ON: Bias voltage of gate +15V  
OFF: Reverse bias voltage of gate -15V  
Vcc2=Vcc1/2
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