

## abc\_to\_dq.xbe

### Attributes

```
xbe name=abc_to_dq evaluate=yes
# convert van,vbn,vcn to vqs,vds
Jacobian: constant
input_vars: van vbn vcn
output_vars: vqs vds
aux_vars:
iparms:
sparms:
rparms:
stparms:
igparms:
outparms: van vbn vcn vqs vds
```

### Description

abc\_to\_dq.xbe employs the following equations to relate van, vbn, vcn to vds, vqs:

$$\begin{aligned}V_{qs} &= \frac{2}{3} V_{an} - \frac{1}{3} (V_{bn} + V_{cn}), \\V_{ds} &= -\frac{1}{\sqrt{3}} (V_{bn} - V_{cn}).\end{aligned}$$