```
R2G_{i_,j_}[ε_] := Expand[ε /. {
    e_j ↦ T_i e_j + (1 - T_i) e_i, f_j ↦ S_i f_j + (1 - S_i) f_i,
    g_j ↦ T_i S_i g_j + (1 - T_i S_i) g_i
      + (S_i + T_i - 2 S_i T_i) e_i f_i + S_i (T_i - 1) e_i f_j + T_i (S_i - 1) e_j f_i}]
```