In[72]:=
```
V$AC[ω_] = Limit[V$0 Integrate[Exp[-I ω t - λ t] Cos[ω$m t], {t, 0, ∞}, Assumptions →
      {Element[ω, Reals], Element[ω$m, Reals], Element[λ, Reals], λ > 0}], λ → 0]
```

Out[72]=
$$\frac{i\ V\$0\ \omega}{-\omega^2 + \omega\$m^2}$$

In[77]:=
```
-Limit[ω V$AC[ω + ω$m], ω → 0] // Simplify
```

Out[77]=
$$\frac{i\ V\$0}{2}$$

In[71]:=
```
V$AM[ω_] =
 Limit[V$0/2 Integrate[Exp[-I ω t - λ t] Cos[ω$m t] (1 + Cos[ω$am t]), {t, 0, ∞},
    Assumptions → {Element[ω, Reals], Element[ω$m, Reals],
      Element[ω$am, Reals], Element[λ, Reals], λ > 0}], λ → 0]
```

Out[71]=
$$\frac{1}{2}\ i\ V\$0\ \omega\left(\frac{1}{-\omega^2 + \omega\$m^2} + \frac{-\omega^2 + \omega\$am^2 + \omega\$m^2}{\left(-\omega^2 + (\omega\$am - \omega\$m)^2\right)\left(-\omega^2 + (\omega\$am + \omega\$m)^2\right)}\right)$$

In[79]:=
```
-Limit[ω V$AM[ω + ω$m], ω → 0] // Simplify
```

Out[79]=
$$\frac{i\ V\$0}{4}$$

In[80]:=
```
-Limit[ω V$AM[ω - ω$m], ω → 0] // Simplify
```

Out[80]=
$$\frac{i\ V\$0}{4}$$

In[81]:=
```
-Limit[ω V$AM[ω + (ω$m + ω$am)], ω → 0] // Simplify
```

Out[81]=
$$\frac{i\ V\$0}{8}$$

In[82]:=
```
-Limit[ω V$AM[ω - (ω$m + ω$am)], ω → 0] // Simplify
```

Out[82]=
$$\frac{i\ V\$0}{8}$$

```
-Limit[ω V$AM[ω + (ω$m - ω$am)], ω → 0] // Simplify
```

Out[ ]=
$$\frac{i\ V\$0}{8}$$

In[83]:=
```
-Limit[ω V$AM[ω - (ω$m - ω$am)], ω → 0] // Simplify
```

Out[83]=
$$\frac{i\ V\$0}{8}$$