

TABLE A.2
TRANSFER FUNCTIONS OF DC/DC CONVERTERS

	Boost	Buck
$G_{vv}(s)$	$\frac{n}{D'} \frac{1}{1 + \frac{n^2 L}{D'^2 R} s + \frac{n^2 LC}{D'^2} s^2}$	$\frac{D}{n} \frac{1}{1 + \frac{L}{R} s + LC s^2}$
$G_{vd}(s)$	$\frac{V_c}{D'} \frac{1 - \frac{n^2 L}{D'^2 R} s}{1 + \frac{n^2 L}{D'^2 R} s + \frac{n^2 LC}{D'^2} s^2}$	$\frac{V_{in}}{n} \frac{1}{1 + \frac{L}{R} s + LC s^2}$
$Z_{out}(s)$	$\frac{n^2 L}{D'^2} \frac{s}{1 + \frac{n^2 L}{D'^2 R} s + \frac{n^2 LC}{D'^2} s^2}$	$\frac{Ls}{1 + \frac{L}{R} s + LC s^2}$
$Z_{in}(s)$	$\frac{D'^2 R}{n^2} \frac{1 + \frac{n^2 L}{D'^2 R} s + \frac{n^2 LC}{D'^2} s^2}{RCs + 1}$	$\frac{n^2 R}{D^2} \frac{1 + \frac{L}{R} s + LC s^2}{RCs + 1}$
$G_{id}(s)$	$\frac{nV_c}{D'^2 R} \left(1 + \frac{RCs + 1}{1 + \frac{n^2 L}{D'^2 R} s + \frac{n^2 LC}{D'^2} s^2}\right)$	$\frac{DV_c}{n^2 R} \left(1 + \frac{RCs + 1}{1 + \frac{L}{R} s + LC s^2}\right)$
$G_{ii}(s)$	$\frac{n}{D'} \frac{1}{1 + \frac{n^2 L}{D'^2 R} s + \frac{n^2 LC}{D'^2} s^2}$	$\frac{D}{n} \frac{1}{1 + \frac{L}{R} s + LC s^2}$

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