

**TABLE 3—SUMMARY OF LOW-VOLTAGE STEP-DOWN OPTIONS**

Topology	Internal switch	Typical efficiency (%)	Relative cost	Area (in. <sup>2</sup> )
Linear	Yes	66	0.4	0.1
Nonsynchronous buck	No	87	1	1.2
Nonsynchronous buck	Yes	85	1.5	1.1
Synchronous buck	No	96	2	1.0
Synchronous buck	Yes	95	2.5	0.7
Charge pump*	Yes	60 to 90	0.7	0.15

\*Current limited to 0.25A; efficiency depends largely on input voltage.