

TABLE 4—SELECTION CRITERIA FOR HIGHER VOLTAGE REGULATORS

Topology	Internal switch	Current limit	Typical efficiency (%)	Relative cost	Area(in. ²)
5 to 12V boost	No	No	86	2.8	0.7
5 to 12V boost	Yes	No	85	3.2	0.6
5 to 5V SEPIC*	No	Yes	89	5.6	1.0
5 to 5V SEPIC	Yes	Yes	85	5.5	0.9
3.3 to 5V charge pump**	Yes	Yes	65 to 75	2	0.2
Synchronous buck with auxiliary winding	Yes (synchronous buck) ***No (auxiliary)	Yes	95	1	0.3

*Synchronous operation.

**TPS60133 charge-pump controller; 0.3A maximum output current.

***Cost and area of auxiliary winding only.