Buck Converter Using μPC494

Table of component models used in the DesignKit

Code	Classification	Part No.	Manufacturer	SPEC
IC1	SWITCHING REGULATOR CONTROL CIRCUIT	μ PC494	NEC Electronics Corporation	
Q1	Bipolar Junction Transistor	2SA1680	Toshiba	V_{CEO}=-50V ,I_C=-2A
D1	Schottky Barrier Diode	XBS104V14R	TOREX SEMICONDUCTOR	40V, 1A (IFSM=20A)
Lo	Choke coil	8RHB	TOKO	330uF ,0.54A
Co	Aluminum Electrolytic Capacitor	RJJ-35V221MG5-T20	ELNA Co.,Ltd.	220uF ,35V

Simulation files are stored in folders, as shown in list below.

Simulations	**Folder name**
1. Transient simulation (@ V_{IN}=12V, R_L=10Ω).....	Transient
2. Efficiency (@ V_{IN}=12V, R_L=10Ω).....	Efficiency
3. Step-load response (@ V_{IN}=12V, I_{OUT}=250mA / 500mA).....	Step-load
4. Power switch devices losses (Q1 and D1).....	Losses
5. Output inductor.....	Lout
6. Output capacitor.....	Cout
7. Voltage control feedback loop.....	Feedback

※ Please copy the folder named “Simulations” to your PC. Library files (.lib) are added already.

Design document: **Buck Converter Using μPC494**

Contents