

DC-DC CONVERTER

FEATURES

- Very Low Noise
- Low Operating Voltage Range
- Few External Components
- Wide Supply Voltage Range
- Sinewave Oscillation
- Selectable Output Voltages

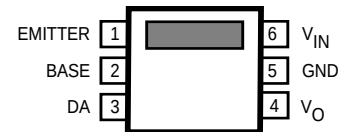
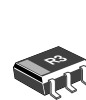
APPLICATIONS

- Headphone Stereos
- Pagers
- Mobile Wireless Equipment
- Electronic Diaries
- Other Battery-powered Equipment
- LCD TV's

DESCRIPTION

The TK11822M and TK11823M are booster-type DC-DC converters developed principally for use as power supplies to drive variable capacitance diodes. Both products are low power output types, suitable for operation at low voltages. To suppress AM band noise, they use high frequency sine wave oscillation. Both products are available in two output voltages, allowing the user to select the most efficient voltage for the equipment. The products have built-in rectifier diodes and small packages, contributing to equipment miniaturization.

TK11822/23M



ORDERING INFORMATION

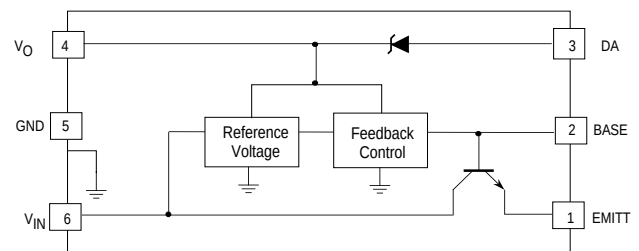
TK11822M
TK11823M



Tape/Reel Code

TAPE/REEL CODE
BX: Bulk/Bag
TL: Tape Left

BLOCK DIAGRAM



TK11822/11823

ABSOLUTE MAXIMUM RATINGS

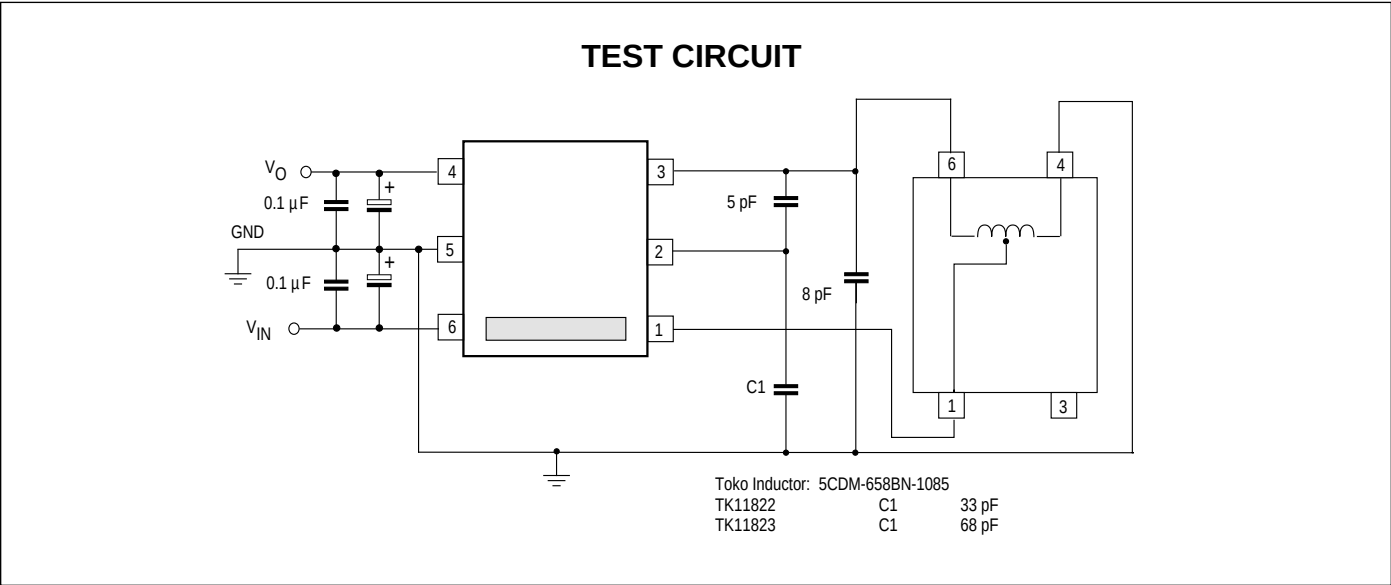
Input Voltage	8 V	Junction Temperature	150 °C
Output Current	0.5 mA	Storage Temperature Range	-55 to +150 °C
Operating Voltage Range.....	1.1 to 6 V	Operating Temperature Range	-20 to +70 °C
Power Dissipation (Note 1)	200 mW	Lead Soldering Temp. (10 sec.)	260 °C

TK11822 ELECTRICAL CHARACTERISTICS

Test conditions: $V_{IN} = 1.4\text{ V}$, $T_A = 25\text{ °C}$, unless otherwise specified.

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CC}	Input Current	$I_O = 0\text{ }\mu\text{A}$		2.1	3.6	mA
		$I_O = 50\text{ }\mu\text{A}$		3.8	5.6	mA
V_O	Output Voltage	$I_O = 50\text{ }\mu\text{A}$	7.0	7.4	7.8	V
I_O	Output Current	$V_{IN} = 1.2\text{ V}$	50			μA
		$V_{IN} = 1.4\text{ V}$	150			μA
Line Reg	Line Regulation	$V_{IN} = 1.4\text{ V} \rightarrow 3.6\text{ V}$, $I_O = 50\text{ }\mu\text{A}$		20	80	mV
Load Reg	Load Regulation	$I_O = 20\text{ }\mu\text{A} \rightarrow 100\text{ }\mu\text{A}$		30	100	mV
$\Delta V_O/T_A$	Output Voltage Temperature Dependency	$V_{IN} = 1.4\text{ V} \rightarrow 3.6\text{ V}$, $I_O = 50\text{ }\mu\text{A}$		0.7		mV/°C
V_{OSC-S}	Oscillation Startup Voltage	$I_O = 0\text{ }\mu\text{A}$		1.0		V
f_{OSC}	Oscillation Frequency			3.0		MHz

- Note 1: Power dissipation must be derated at the rate of 1.6 mW/°C for operation above 25 °C.
- Note 2: Use caution when decreasing the output capacitance at low temperatures. "UJ" type capacitors will allow little change in the oscillation frequency.



ABSOLUTE MAXIMUM RATINGS

Input Voltage 8 V
 Output Voltage 18 V
 Output Current 0.5 mA
 Operating Voltage Range 1.1 to 6 V
 Power Dissipation (Note 1) 200 mW

Junction Temperature 150 °C
 Storage Temperature Range -55 to +150 °C
 Operating Temperature Range -20 to +70 °C
 Lead Soldering Temp. (10 sec.) 260 °C

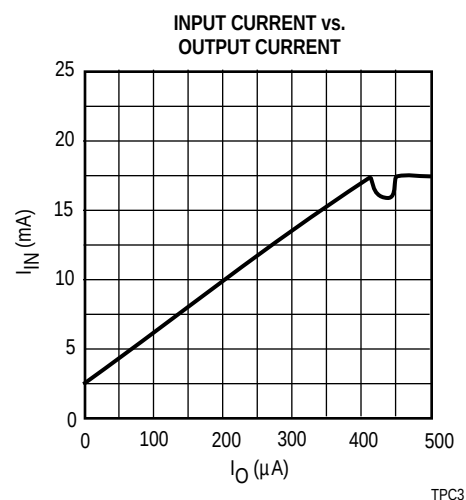
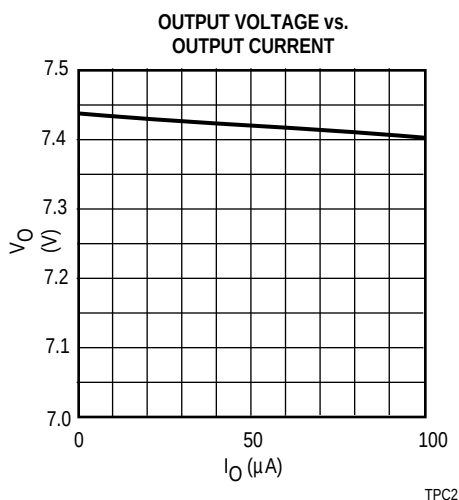
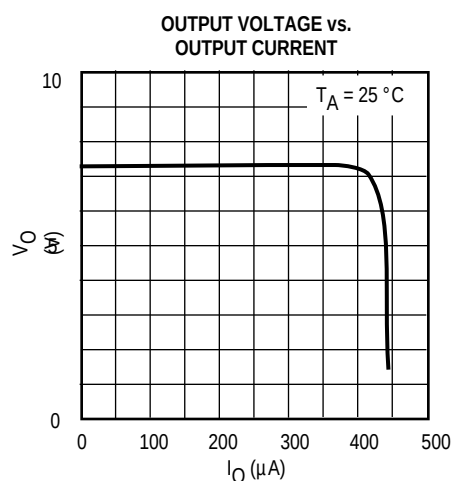
TK11823 ELECTRICAL CHARACTERISTICS

Test conditions: $V_{IN} = 1.5\text{ V}$, $T_A = 25\text{ °C}$, unless otherwise specified.

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CC}	Input Current	$I_O = 0\text{ }\mu\text{A}$		3.4	5.6	mA
		$I_O = 50\text{ }\mu\text{A}$		5.4	8.5	mA
V_O	Output Voltage	$I_O = 50\text{ }\mu\text{A}$	13.2	13.7	14.2	V
I_O	Output Current	$V_{IN} = 1.3\text{ V}$	50			μA
		$V_{IN} = 1.5\text{ V}$	150			μA
Line Reg	Line Regulation	$V_{IN} = 1.5\text{ V} \rightarrow 3.6\text{ V}$, $I_O = 50\text{ }\mu\text{A}$		20	80	mV
Load Reg	Load Regulation	$I_O = 20\text{ }\mu\text{A} \rightarrow 100\text{ }\mu\text{A}$		40	110	mV
$\Delta V_O/T_A$	Output Voltage Temperature Dependency	$V_{IN} = 1.5\text{ V} \rightarrow 3.6\text{ V}$, $I_O = 50\text{ }\mu\text{A}$		2.0		mV/°C
V_{OSC-S}	Oscillation Startup Voltage	$I_O = 0\text{ }\mu\text{A}$		1.1		V
f_{OSC}	Oscillation Frequency			3.0		MHz

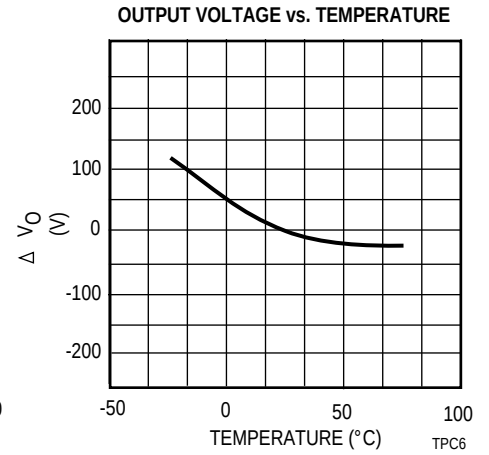
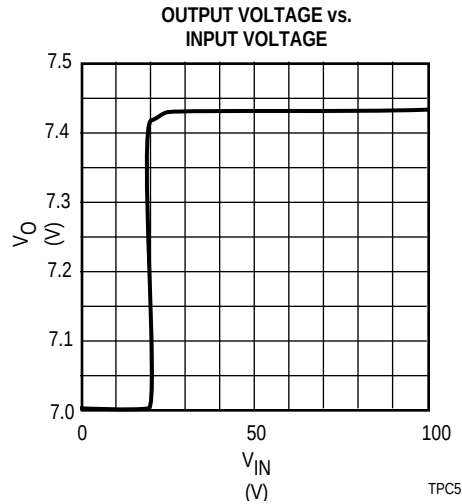
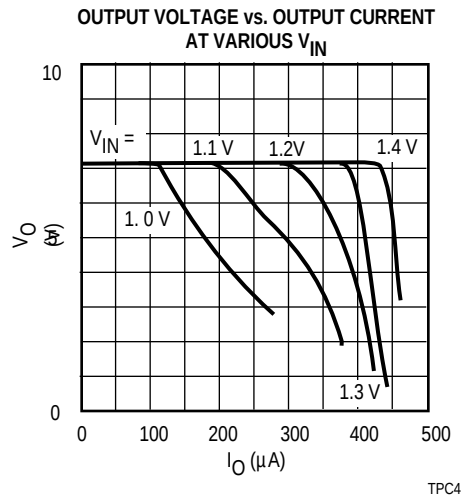
TYPICAL PERFORMANCE CHARACTERISTICS

TK11822

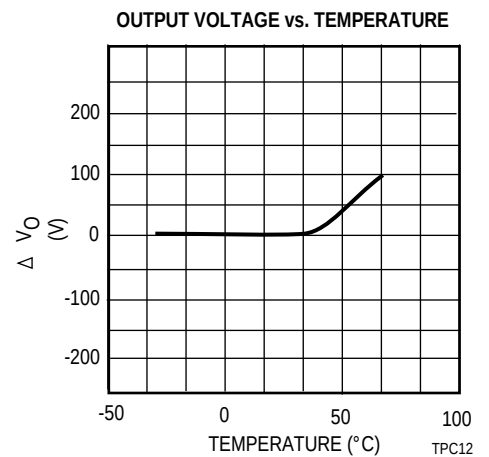
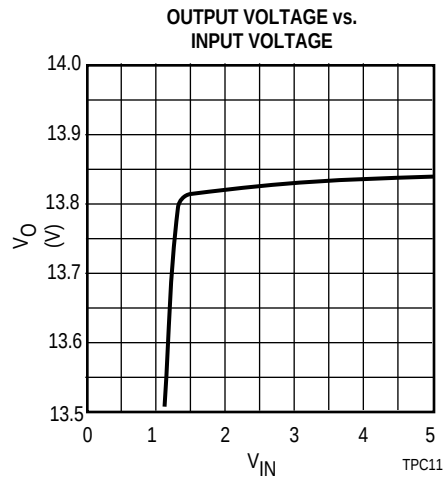
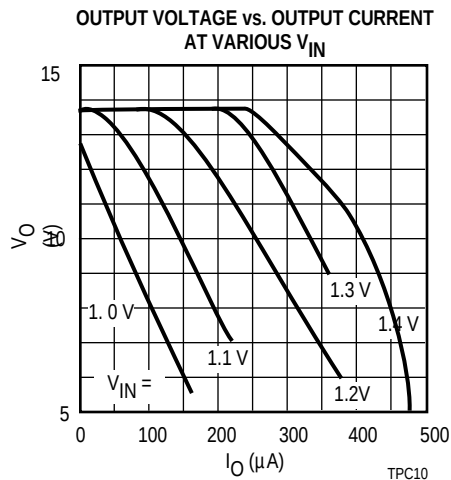
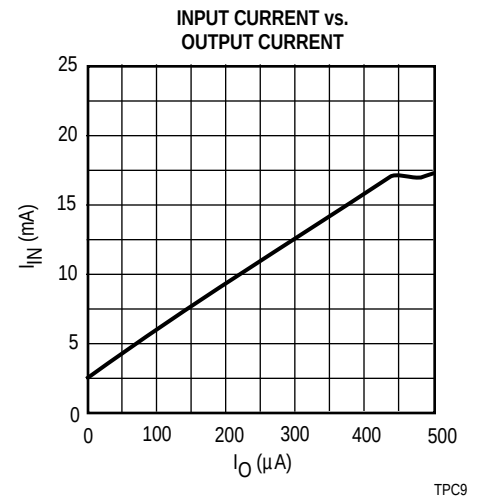
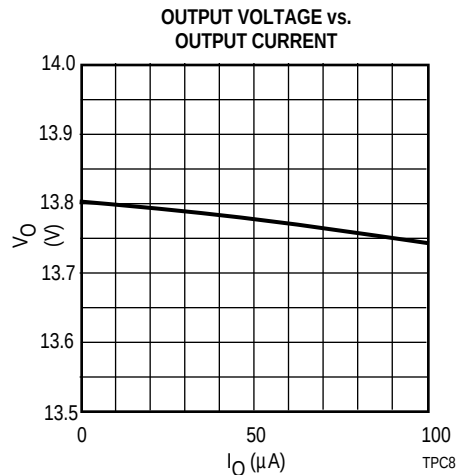
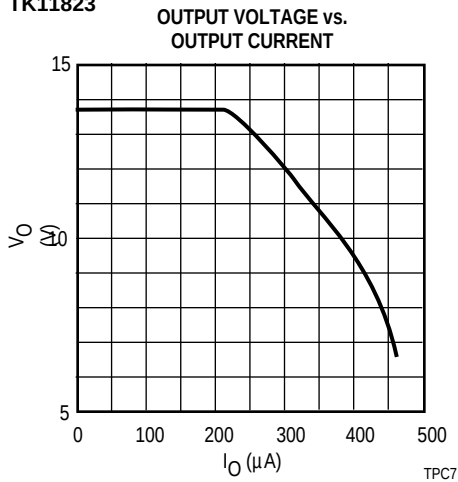


TYPICAL PERFORMANCE CHARACTERISTICS (CONT.)

TK11822(CONT.)



TK11823





TOKO America, Inc.
1250 Feehanville, Dr.
Mt. Prospect, IL 60056
Tel: (800) PIK-TOKO
Fax: (847) 699-1194