

### FEATURES

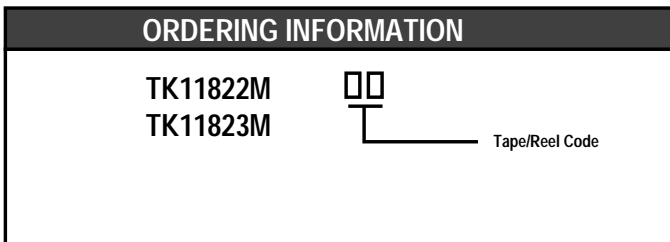
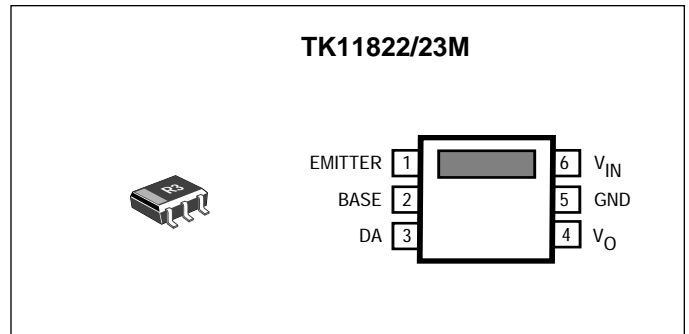
- Very Low Noise
- Low Operating Voltage Range
- Few External Components
- Wide Supply Voltage Range
- Sinewave Oscillation
- Selectable Output Voltages

### APPLICATIONS

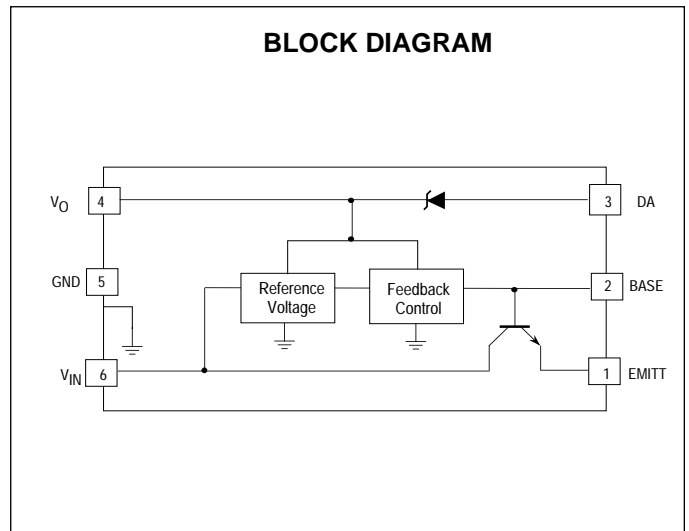
- Headphone Stereos
- Pagers
- Mobile Wireless Equipment
- Electronic Diaries
- Other Battery-powered Equipment
- LCD TV's

### 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.



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



# 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

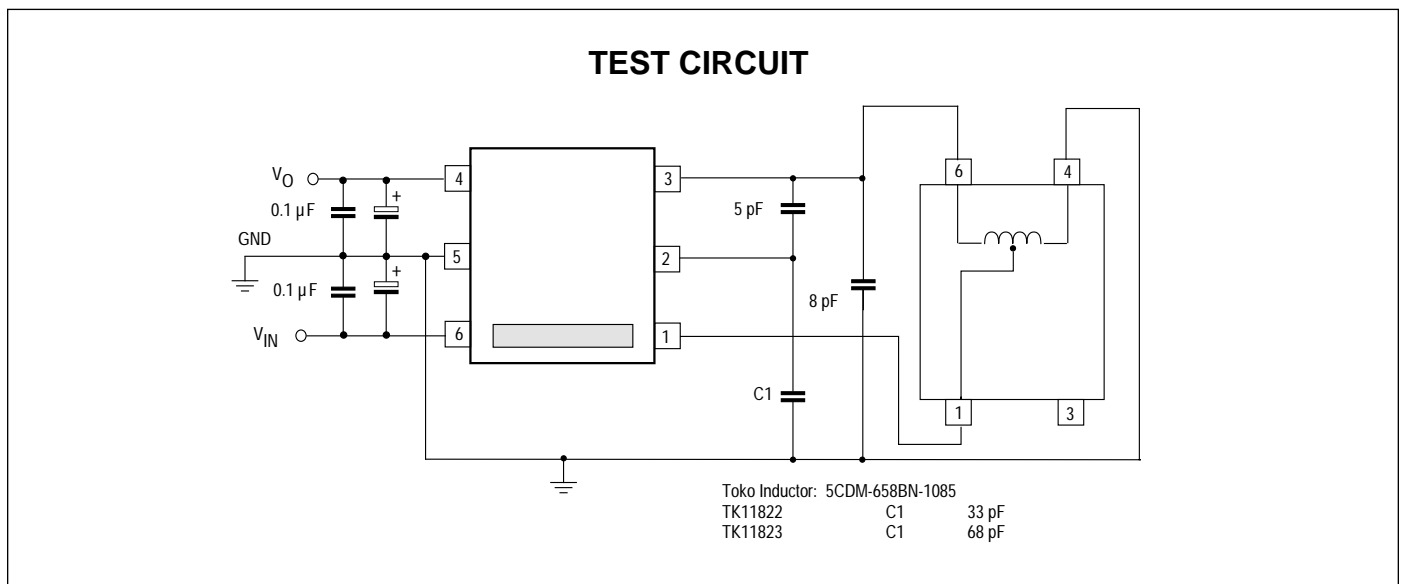
## TK11822 ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CC}$	Input Current	$I_O = 0 \mu A$		2.1	3.6	mA
		$I_O = 50 \mu A$		3.8	5.6	mA
$V_O$	Output Voltage	$I_O = 50 \mu A$	7.0	7.4	7.8	V
$I_O$	Output Current	$V_{IN} = 1.2 V$	50			$\mu A$
		$V_{IN} = 1.4 V$	150			$\mu A$
Line Reg	Line Regulation	$V_{IN} = 1.4 V \rightarrow 3.6 V, I_O = 50 \mu A$		20	80	mV
Load Reg	Load Regulation	$I_O = 20 \mu A \rightarrow 100 \mu A$		30	100	mV
$\Delta V_O/T_A$	Output Voltage Temperature Dependency	$V_{IN} = 1.4 V \rightarrow 3.6 V, I_O = 50 \mu A$		0.7		mV/°C
$V_{OSC-S}$	Oscillation Startup Voltage	$I_O = 0 \mu A$		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	Junction Temperature .....	150 °C
Output Voltage .....	18 V	Storage Temperature Range .....	-55 to +150 °C
Output Current .....	0.5 mA	Operating Temperature Range .....	-20 to +70 °C
Operating Voltage Range .....	1.1 to 6 V	Lead Soldering Temp. (10 sec.) .....	260 °C
Power Dissipation (Note 1) .....	200 mW		

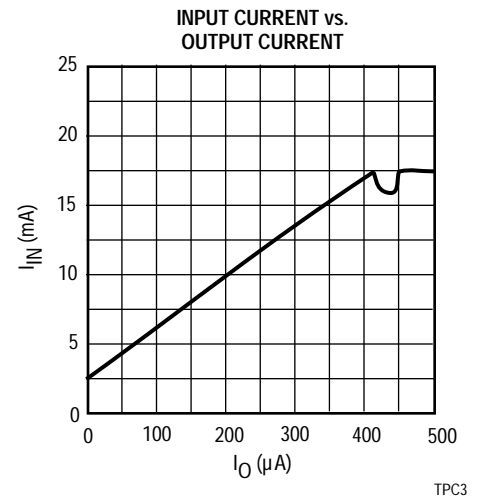
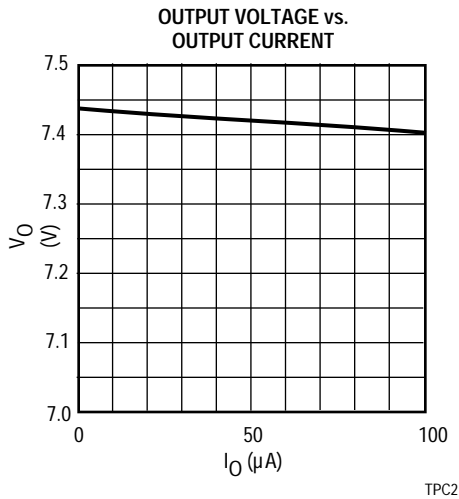
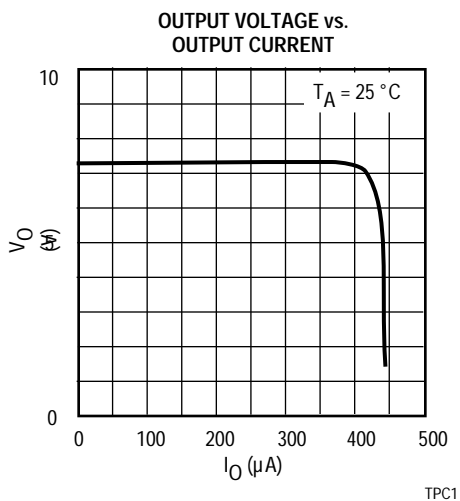
**TK11823 ELECTRICAL CHARACTERISTICS**

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

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

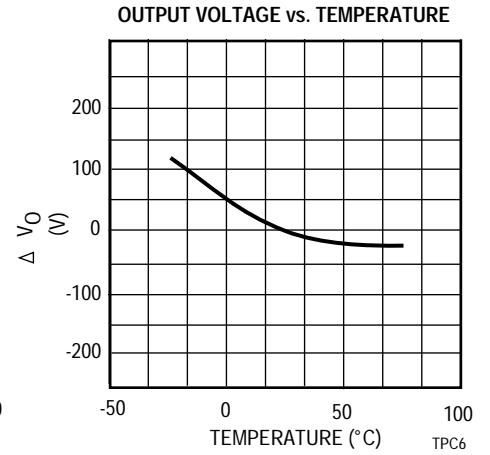
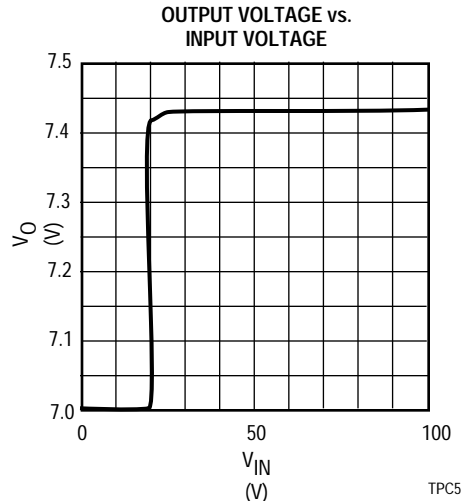
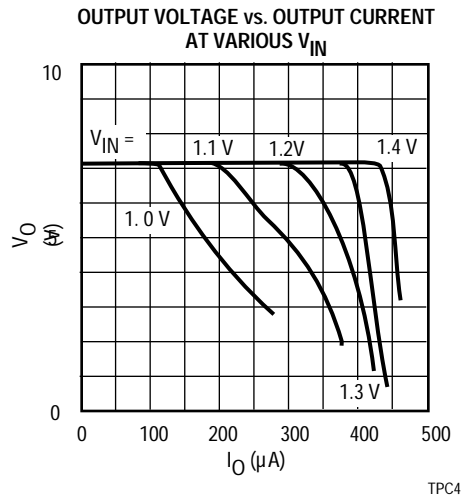
**TYPICAL PERFORMANCE CHARACTERISTICS**

TK11822

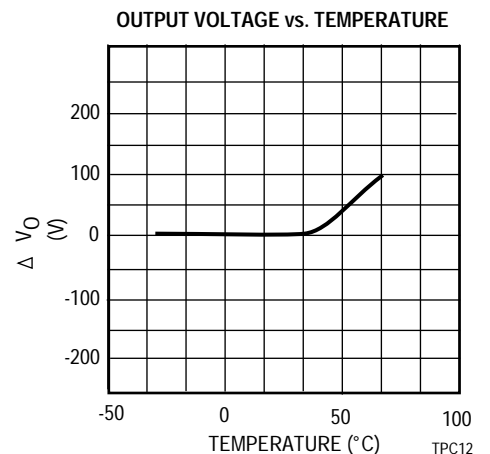
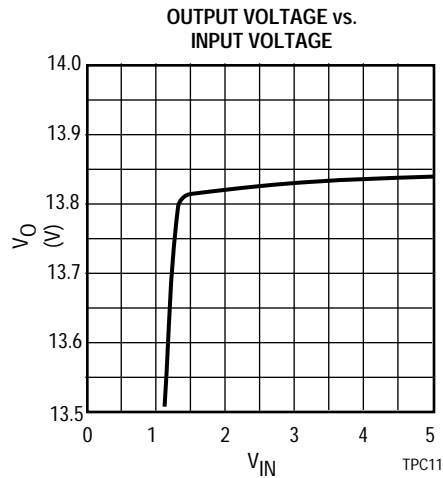
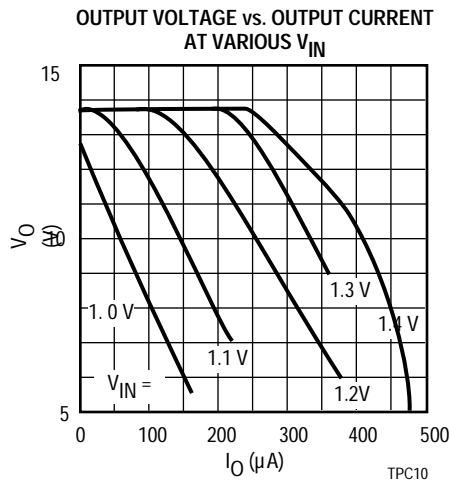
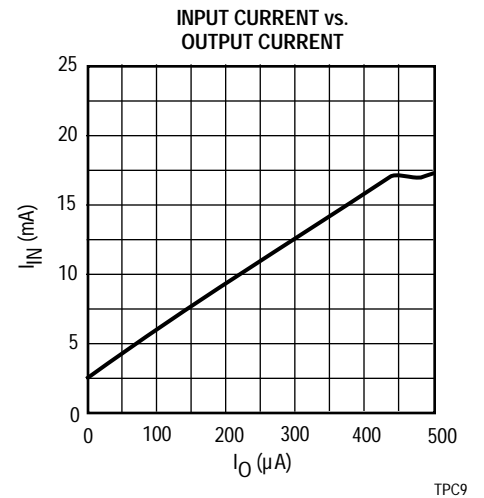
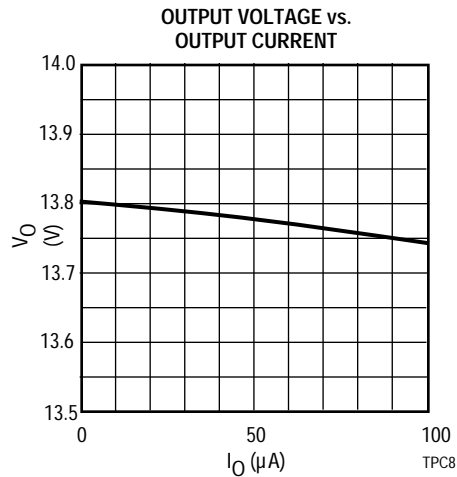
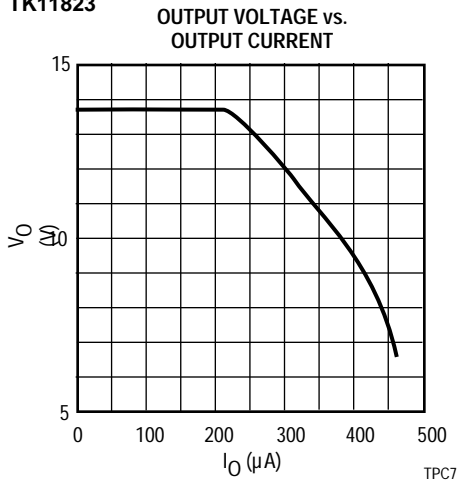


## TYPICAL PERFORMANCE CHARACTERISTICS (CONT.)

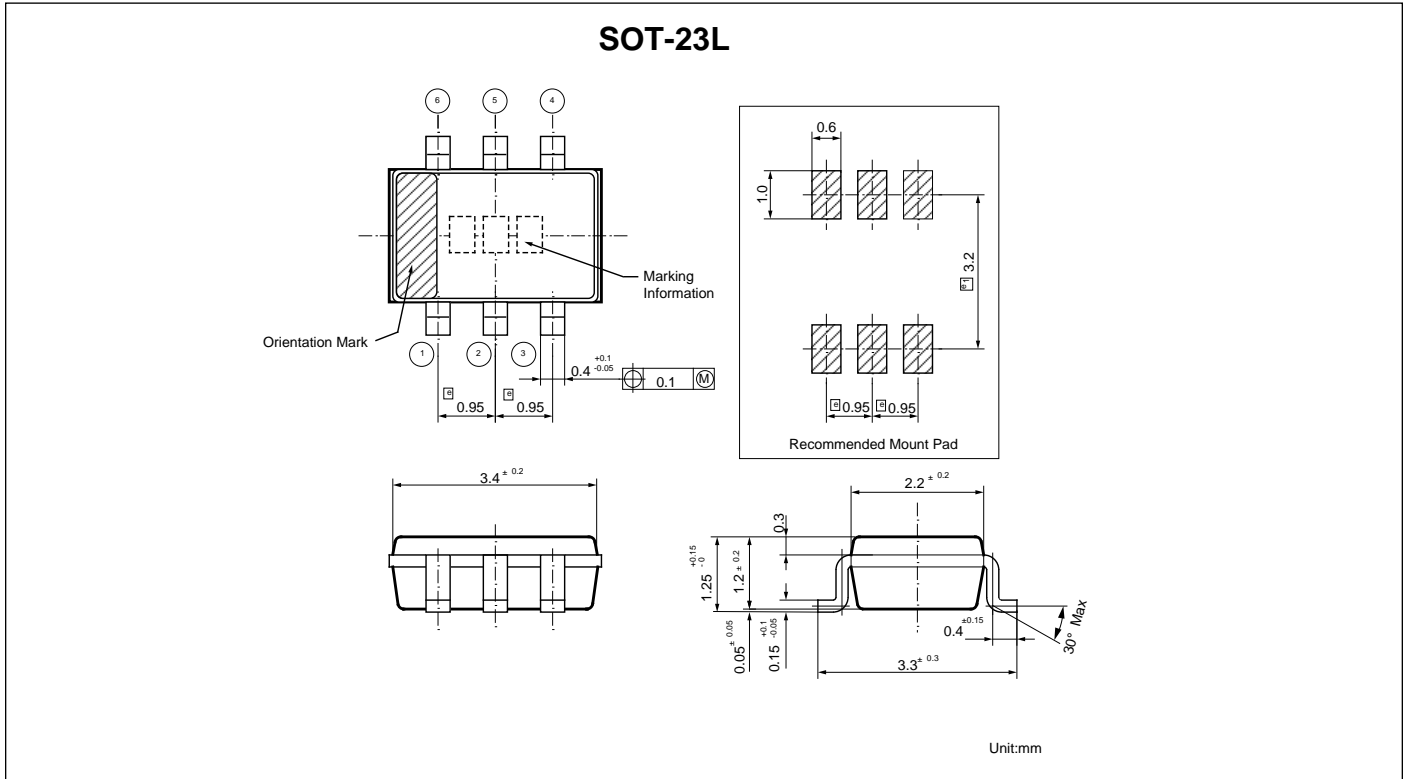
TK11822(CONT.)



TK11823



PACKAGE OUTLINES



**MARKING INFORMATION**

TK11822	D22
TK11823	D23

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