

75 Ω VIDEO LINE DRIVER

FEATURES

- Internal 75 Ω Drivers
- 20 MHz Gain Band Width
- 2 Channel High Speed Operational Amplifiers
- Very Small SOT23L-8 Package
- Single +5 V Power Supply Operation

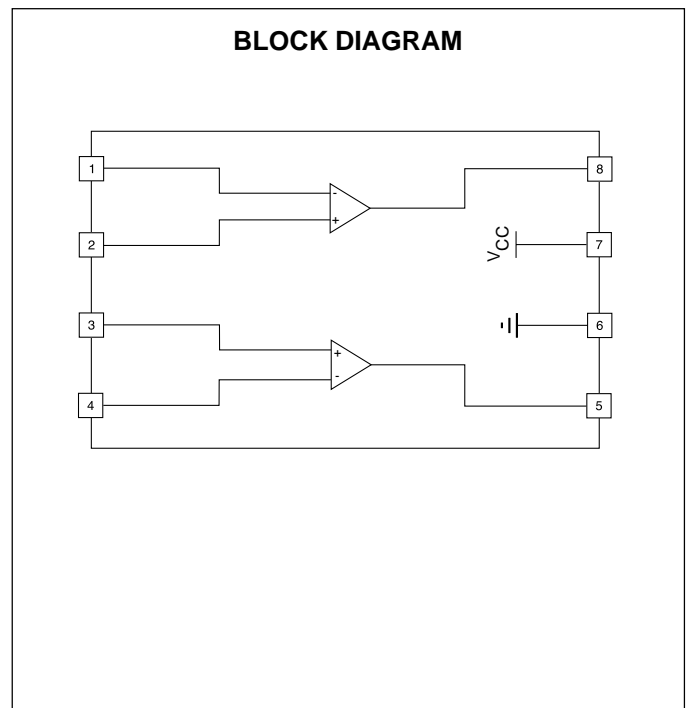
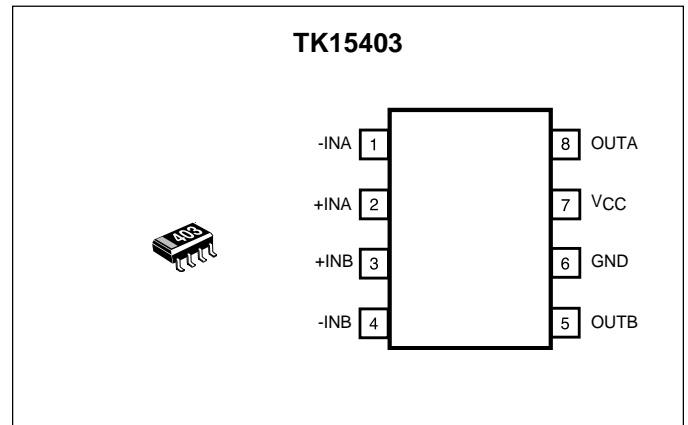
APPLICATIONS

- Video Equipment
- Digital Cameras
- CCD Cameras
- TV Monitors
- Video Tape Recorders
- LCD Projectors

DESCRIPTION

Operating from a single +5 V supply, the TK15403M is a dual video line driver IC that takes standard video signals as analog inputs and provides buffered analog outputs for driving 150 Ω loads (series 75 Ω resistor and 75 Ω cable load). The standard video input signals (1 V_{P-P}) are typically amplified 6 dB using external components to produce a 2 V_{P-P} signal into an AC-coupled 150 Ω load. Nominal power dissipation (no input) is typically 56 mW.

The TK15403M is available in the very small SOT23L-8 surface mount package.



ORDERING INFORMATION

TK15403M □□

Tape/Reel Code

TAPE/REEL CODE
TL: Tape Left

TK15403

ABSOLUTE MAXIMUM RATINGS

Supply Voltage 6 V Storage Temperature Range -55 to +150 °C
Operating Voltage 4.5 to 5.5 V Operating Temperature Range -25 to +75 °C
Power Dissipation (Note 1) 200 mW

TK15403M ELECTRICAL CHARACTERISTICS

Test conditions: $V_{CC} = 5.0\text{ V}$, $V_{IN} = 1.0\text{ V}_{P-P}$, $R_L = 150\ \Omega$, $T_A = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CC}	Supply Current	No input		11.1	16.0	mA
GVA	Voltage Gain	$f_{in} = 1\text{ MHz}$ (Note 2)	5.7	6.0	6.3	dB
fr 1	Frequency Response 1	$f_{in} = 1\text{ MHz} / 5\text{ MHz}$		0.4		dB
fr 2	Frequency Response 2	$f_{in} = 1\text{ MHz} / 10\text{ MHz}$		-1.2		dB
THD	Total Harmonic Distortion	$f_{in} = 1.0\text{ kHz}$		0.2	1.0	%
$V_{OUT(MAX)}$	Maximum Output Voltage	THD = 10% point	1.0	1.2		Vrms
CT	Cross Talk	$f_{in} = 1\text{ MHz}$		-57	-40	dB
S/N	Signal to Noise Ratio	Pedestal signal		-70		dB
DG	Differential Gain	Staircase signal input	-3.0		+3.0	%
DP	Differential Phase	Staircase signal input	-3.0		+3.0	deg
GVO	Open Circuit Voltage Gain			40		dB
BW	Frequency Band Width			20		MHz
SR	Slew Rate			70		V/ μ S
C_{IN}	Input Capacitance			9		pF
R_{IN}	Input Resistance			1.6		M Ω

Note 1: Power dissipation is 200 mW in free air. Derate at 1.6 mW/°C for operation above 25°C.

Note 2: Set by external components.

MEASUREMENT METHOD (CONT.)

7. Signal to Noise Ratio (S/N)

The signal to noise ratio is measured at TP3 when the pedestal signal input is applied to TP1.

8. Differential Gain (DG)

SW1 is closed to change the input bias voltage.

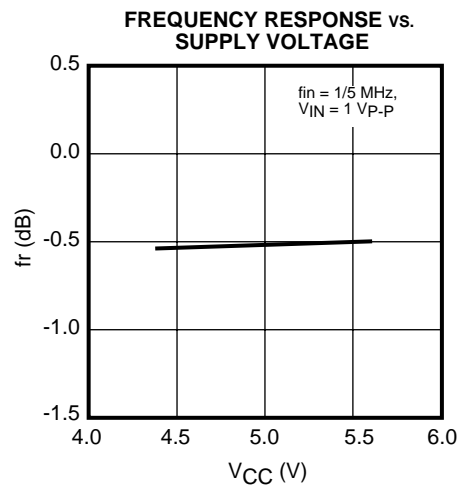
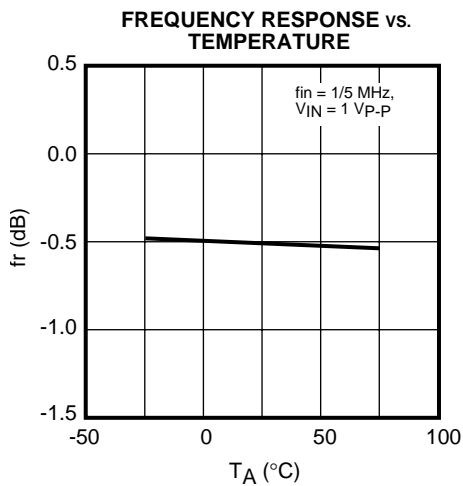
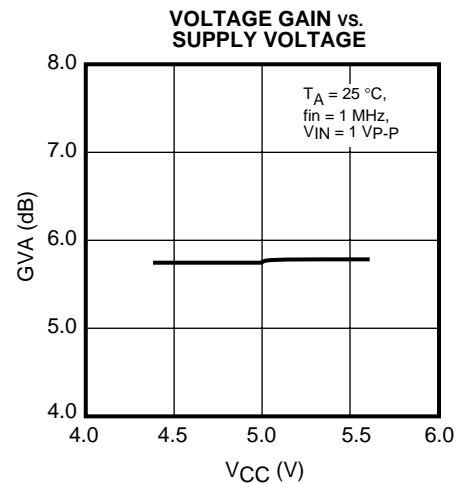
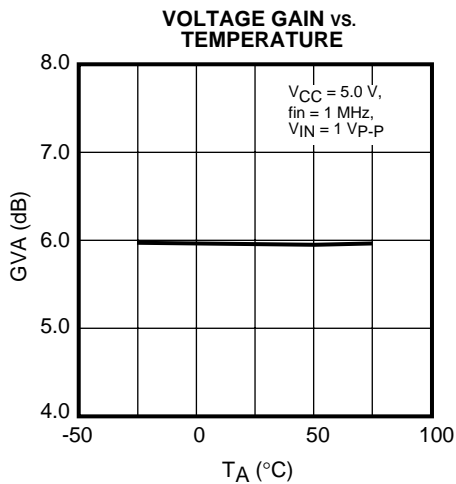
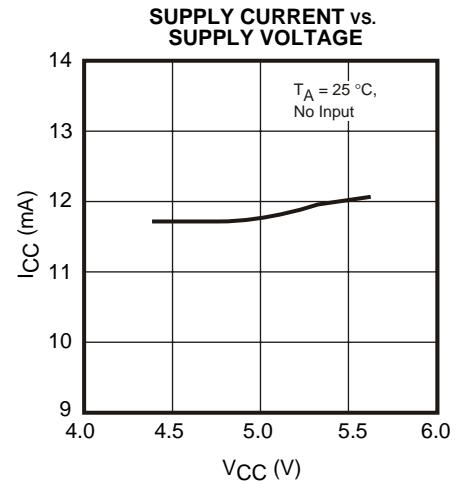
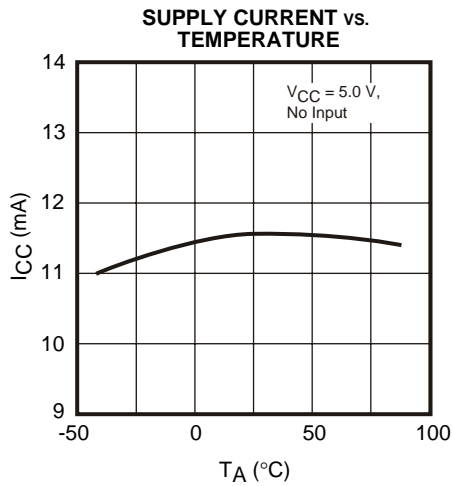
The differential gain is measured at TP3 when a staircase waveform of 10 steps is applied to TP1.

9. Differential Phase (DP)

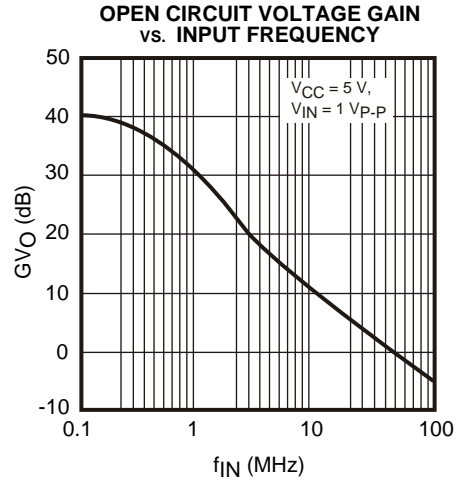
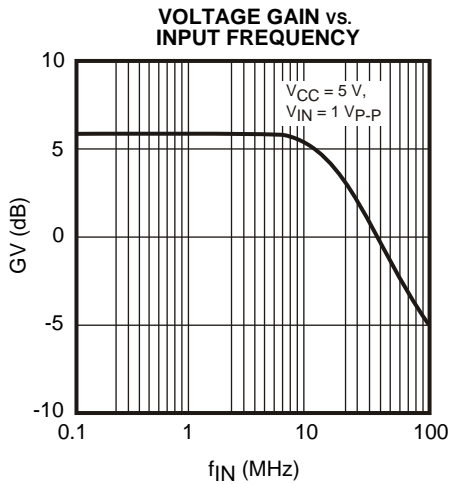
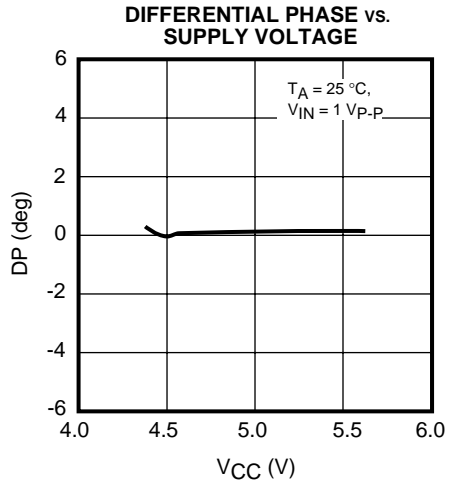
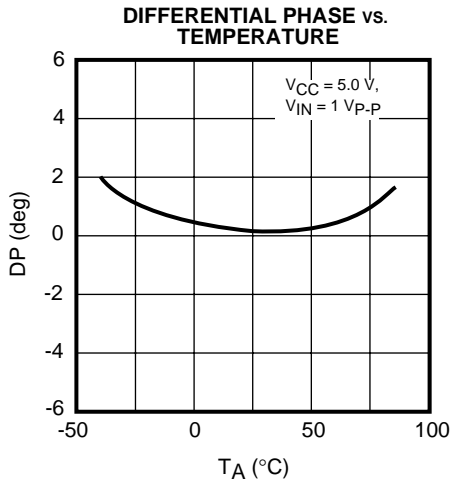
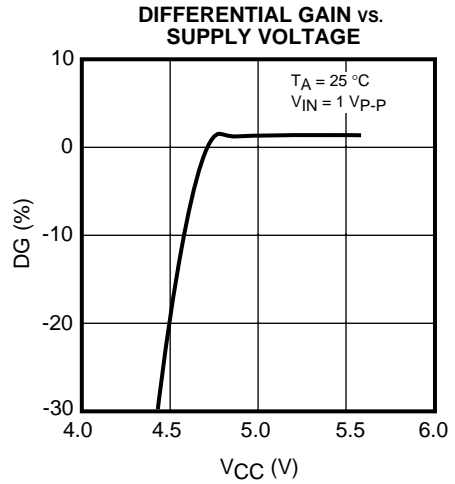
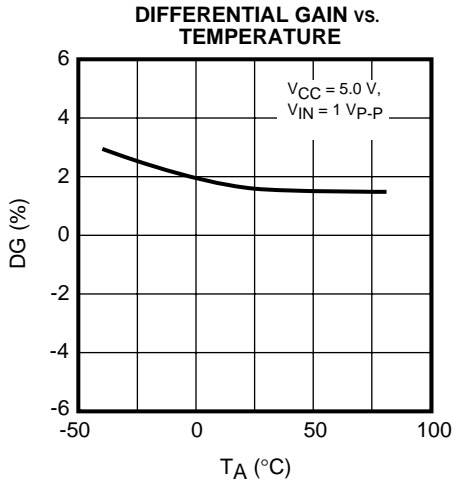
SW1 is closed to change the input bias voltage.

The differential phase is measured at TP3 when a staircase waveform of 10 steps is applied to TP1.

TYPICAL PERFORMANCE CHARACTERISTICS

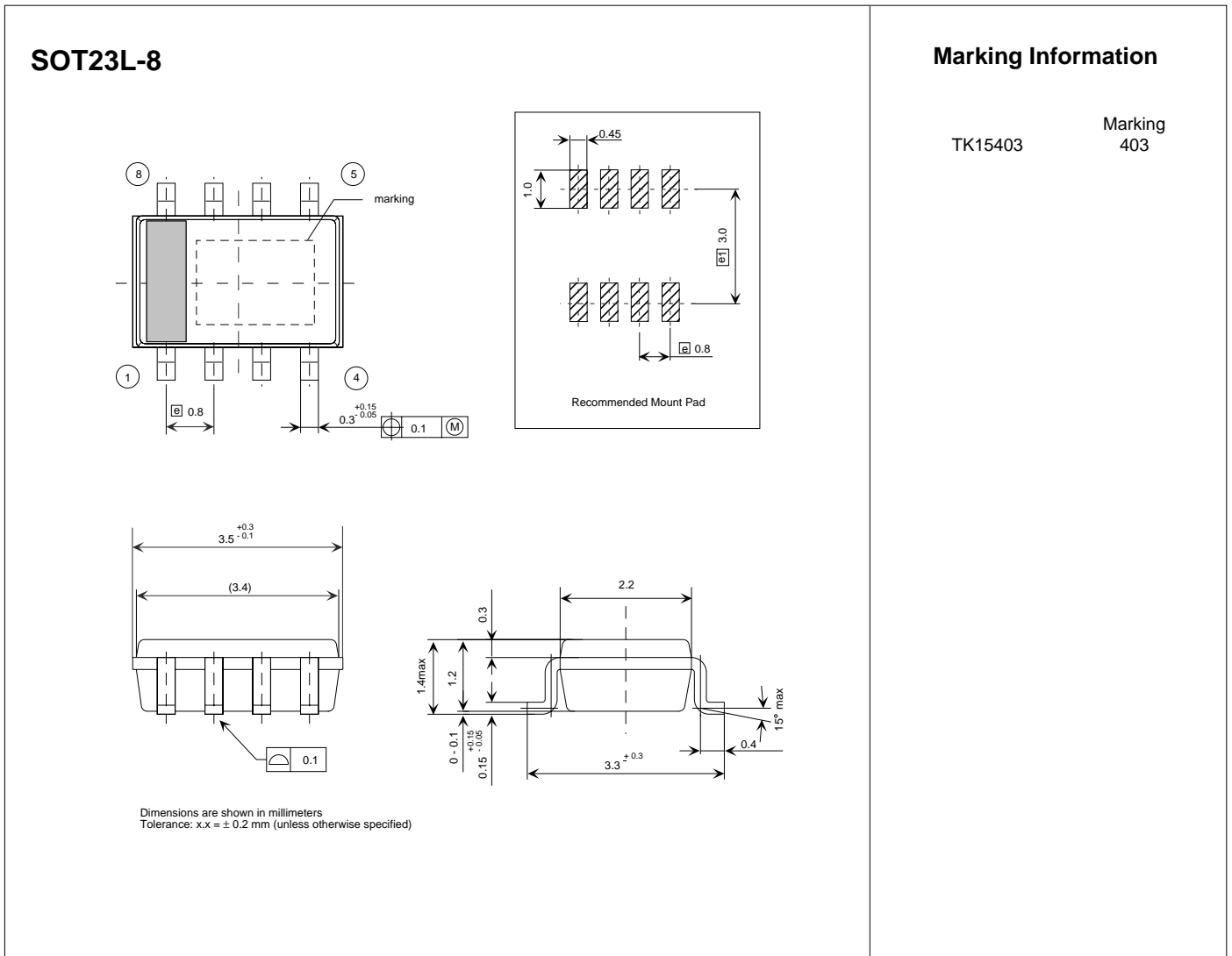


TYPICAL PERFORMANCE CHARACTERISTICS (CONT.)



TERMINAL			INTERNAL EQUIVALENT CIRCUIT	DESCRIPTION
PIN NO.	SYMBOL	VOLTAGE		
1 2	-INPUT +INPUT			Pin 1 is the inverting input for Channel A. Pin 2 is the non-inverting input for Channel A.
3 4	+INPUT -INPUT			Pin 3 is the non-inverting input for Channel B. Pin 4 is the inverting input for Channel B.
5	OUTPUT			Output terminal for Channel B. Pin 5 is available to drive 75 Ω + 75 Ω load.
6	GND	GND		GND terminal.
7	V_{CC}	V_{CC}		Power supply terminal.
8	OUTPUT			Output terminal for Channel A. Pin 8 is available to drive 75 Ω + 75 Ω load.

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