

DESCRIPTION

The M54573L is a semiconductor integrated circuit capable of three-band switching in TV and VCR tuners.

FEATURES

- Low output saturation voltage ($V_{CE(sat)} \leq 0.5V$ at $I_{O} = -30mA$)
- High output sustaining voltage ($BV_{CEO} \geq 28V$)

APPLICATION

Switching bands in TV and VCR tuners

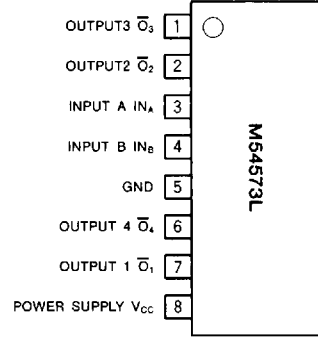
FUNCTION

The M54573L is an IC designed for three-band switching in TV and VCR tuners. Since the output (outputs1~3) drives the power supply of each tuner band, a low saturation voltage ($V_{CC}-V_o$) is necessary. This need is satisfied through a first stage to change of PNP transistors.

Output 4 can be used to change modes using the same power supply since the NPN transistor has an open collector output. The input mode can be switched between three modes as shown in the truth table. The "0", "1" mode and the "1", "1" mode are the same.

The selection mode can be altered by making an OR connection on outputs 1~3.

PIN CONFIGURATION (TOP VIEW)



Outline 8P5

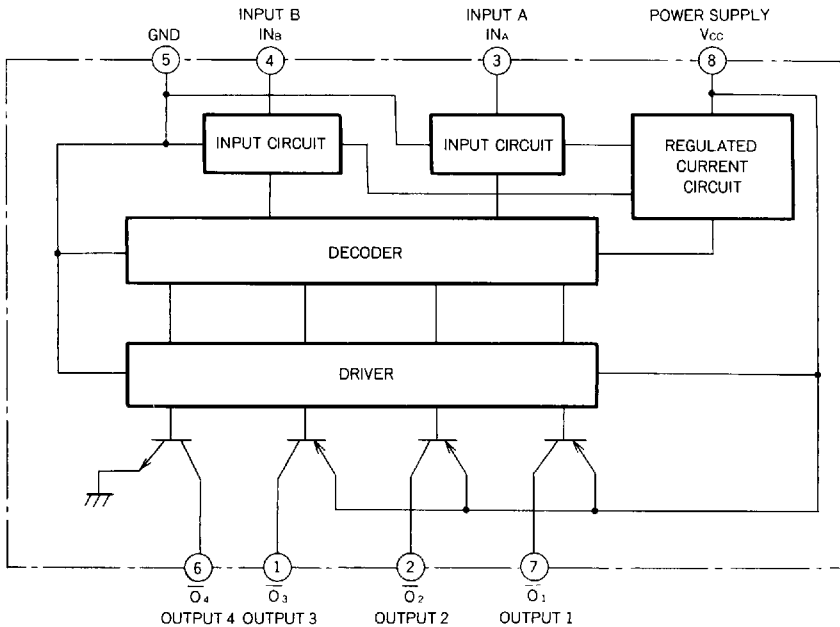
TRUTH TABLE

Input		Output			
IN _A	IN _B	O ₁	O ₂	O ₃	O ₄
0	0	1	Z	Z	0
0	1	Z	Z	1	0
1	0	Z	1	Z	Z
1	1	Z	Z	1	0

Input "0" = 1V (max.)
"1" = 3V (min.)

Output "0" = current sink
"1" = current source
"Z" = high impedance

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

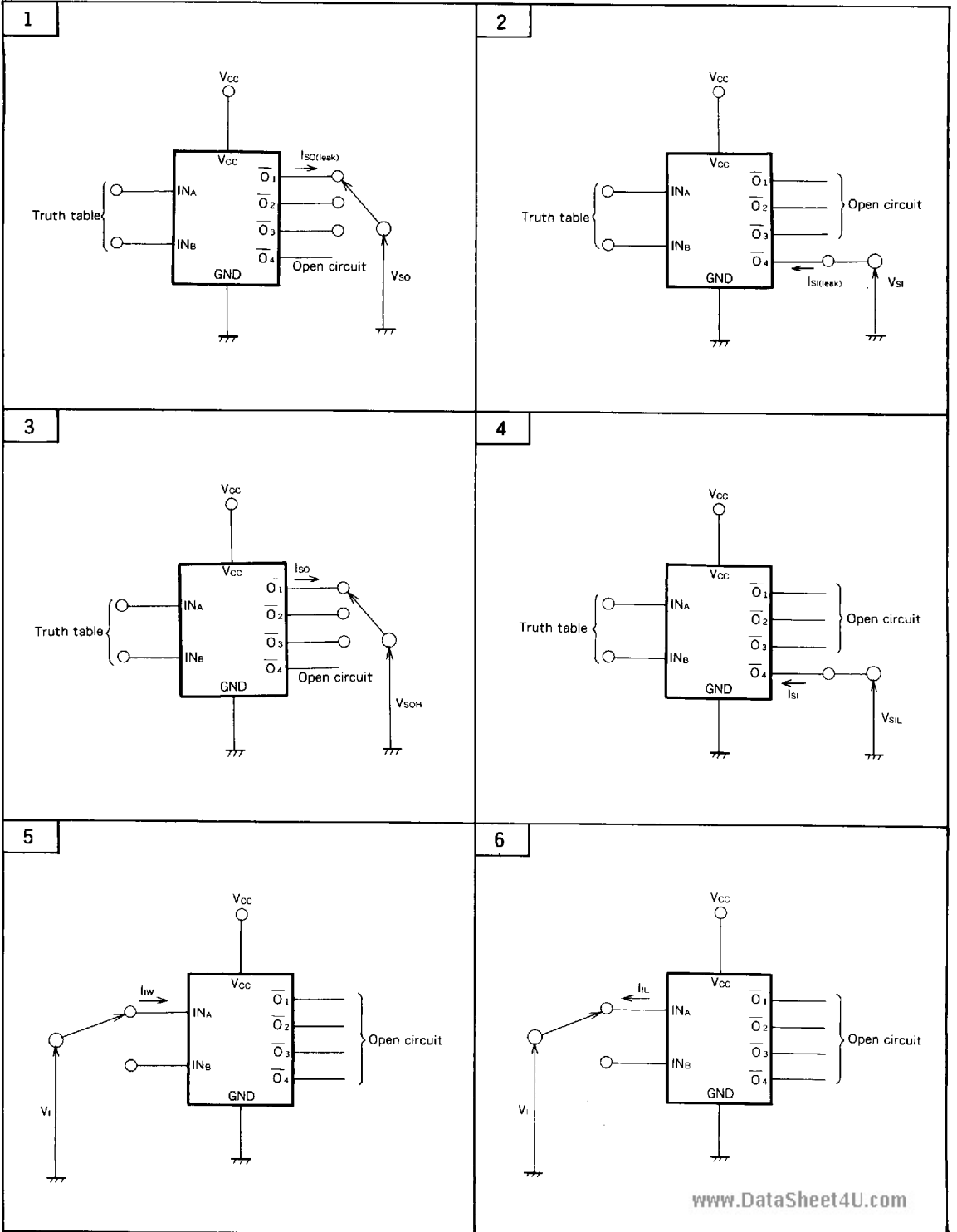
Symbol	Parameter	Ratings	Unit
V _{CC}	Supply voltage	18	V
V _{CEO}	Output sustaining voltage	-0.5~28	V
V _I	Input voltage	18	V
I _{SO}	Output source current	-40	mA
I _{SI}	Output sink current	40	mA
T _{opr}	Operating temperature	-10~60	°C
T _{stg}	Storage temperature	-55~125	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C, V_{CC}=12V, unless otherwise noted)

Symbol	Parameter	Test conditions	Test circuit	Limits			Unit
				Min.	Typ.*	Max.	
I _{SO (leak)}	Source output leakage current	V _{SO} =-12V	1			-100	μA
I _{SI (leak)}	Sink output leakage current	V _{SI} =25V	2			100	μA
V _{SOH}	Source output High-level voltage	I _{SO} =-30mA	3	11.5	11.8		V
V _{SIL}	Sink output Low-level voltage	I _{SI} =30mA	4		0.2	0.5	V
I _{IH}	High-level input current	V _I =3V	5			10	μA
I _{IL}	Low-level input current	V _I =1V	6			100	μA
I _{CC}	Supply current	V _{CC} =13V, V _{IA} =3V, V _{IB} =0V, output opened	7			28	mA

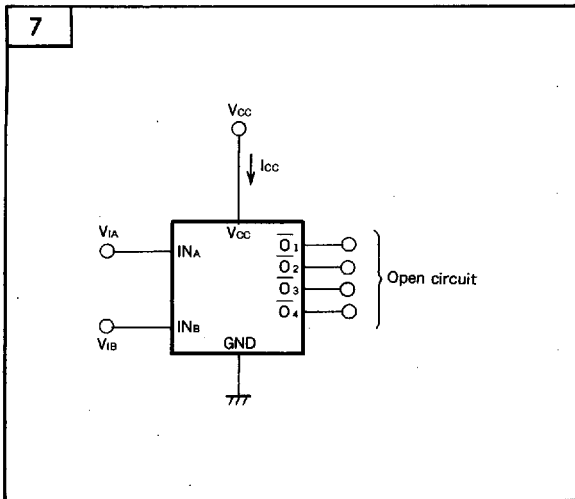
* : A typical value at T_a=25°C.

TEST CIRCUIT



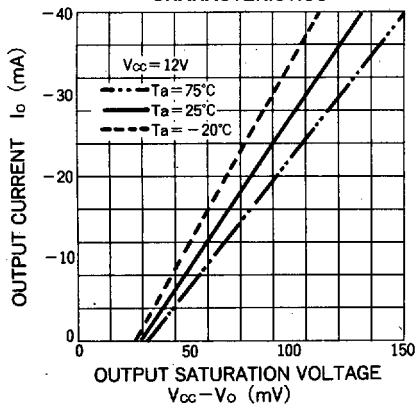
Input level is the same as shown in recommended operation condition.

TEST CIRCUIT (cont.)

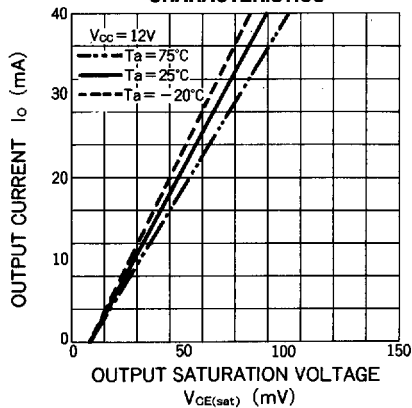


TYPICAL CHARACTERISTICS

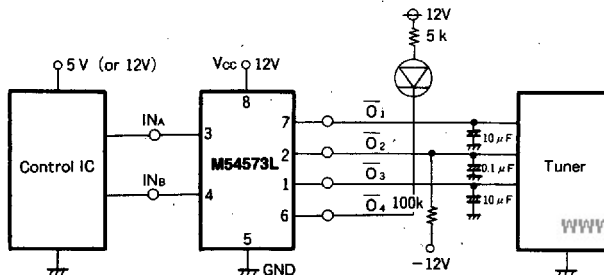
SOURCE OUTPUT SATURATION CHARACTERISTICS



SINK OUTPUT SATURATION CHARACTERISTICS



APPLICATION EXAMPLE (Examples using three bands)



DESCRIPTION OF PIN

Pin No.	Pin name	Name	Function
①	$\overline{\text{OUT3}}$	Output pin 3	Tuner band switchover output pin
②	$\overline{\text{OUT2}}$	Output pin 2	Tuner band switchover output pin
③	INA	Input pin A	Output switchover input pin
④	INB	Input pin B	Output switchover input pin
⑤	GND	Grounding	Grounding
⑥	$\overline{\text{OUT4}}$	Output pin 4	Indication element driving output pin
⑦	$\overline{\text{OUT1}}$	Output pin 1	Tuner band switchover output pin
⑧	Vcc	Power supply pin	Power supply