

-100mA / -50V Digital transistors

(with built-in resistors)

DTA124XM / DTA124XE / DTA124XUA / DTA124XKA

Applications

Inverter, Interface, Driver

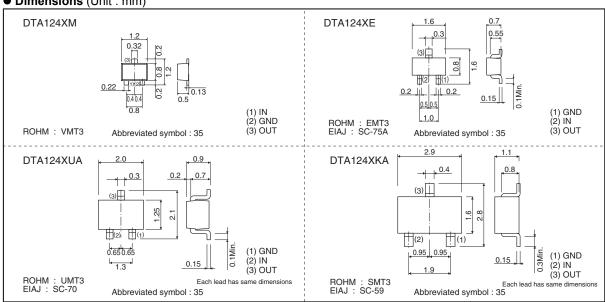
Features

- 1)Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- 2)The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- 3)Only the on/off conditions need to be set for operation, making the device design easy.

Structure

PNP epitaxial planar silicon transistor (Resistor built-in type)

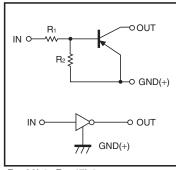
• Dimensions (Unit : mm)



Packaging specifications

	Package	VMT3	EMT3	UMT3	SMT3
	Packaging type	Taping	Taping	Taping	Taping
	Code		TL	T106	T146
Part No.	Basic ordering unit (pieces)	8000	3000	3000	3000
DTA124XM		0	-	_	-
DTA124XE		-	0	-	-
DTA124XUA		-	-	0	-
DTA124XKA	-	-	-	0	

Inner circuit



 $R_1=22k\Omega$ $R_2=47k\Omega$

• Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Lin	Unit	
		DTA124XM DTA124XE	DTA124XUA DTA124XKA	
Supply voltage	Vcc	-£	V	
Input voltage	VIN	-40 to	V	
Output current	lo		mA	
	IC(Max.)	-1		
Power dissipation	Po	150	200	mW
Junction temperature	Tj	15	°C	
Storage temperature	Tstg	−55 to	°C	

• Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Innut valtage	VI(off)	-	-	-0.4	V	Vcc=-5V, Io=-100μA	
Input voltage	VI(on)	-2.5	-	_		Vo=-0.3V, Io=-2mA	
Output voltage	V _{O(on)}	-	-0.1	-0.3	V	lo/l:=-10mA/-0.5mA	
Input current	lı .	-	-	-0.36	mA	VI=-5V	
Output current	IO(off)	-	-	-0.5	μΑ	Vcc=-50V, Vi=0V	
DC current gain	Gı	68	-	-	-	Vo=-5V, Io=-5mA	
Input resistance	R ₁	15.4	22	28.6	kΩ	_	
Resistance ratio	R2/R1	1.7	2.1	2.6	-	_	
Transition frequency	f⊤ *	-	250	_	MHz	Vce=-10V, Ie=5mA, f=100MHz	

^{*} Characteristics of built-in transistor

• Electrical characteristic curves

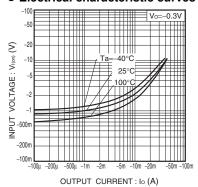


Fig.1 Input voltage vs. output current (ON characteristics)

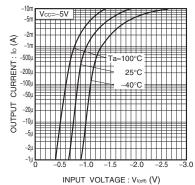


Fig.2 Output current vs. input voltage (OFF characteristics)

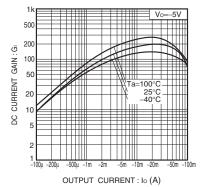


Fig.3 DC current gain vs. output current

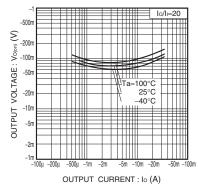


Fig.4 Output voltage vs. output current

Notes

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