DTC124EM / DTC124EE / DTC124EUA / DTC124EKA / DTC124ESA

100mA / 50V Digital transistors (with built-in resistors) DTC124EM / DTC124EE / DTC124EUA / DTC124EKA / DTC124ESA

Applications

Inverter, Interface, Driver

Features

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

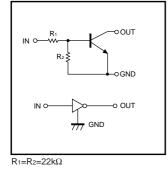
Structure

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

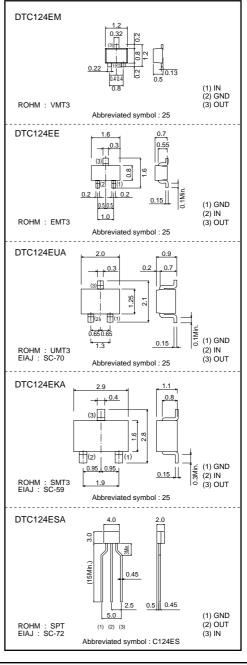
Packaging specifications

	Package	VMT3	EMT3	UMT3	SMT3	SPT
	Packaging type	Taping	Taping	Taping	Taping	Taping
	Code	T2L	TL	T106	T146	TP
Туре	Basic ordering unit (pieces)	8000	3000	3000	3000	5000
DTC124EM		0	-	-	-	-
DTC124EE		-	0	-	-	-
DTC124EUA		-	-	0	-	-
DTC124EKA		-	-	-	0	-
DTC124ESA		-			-	0

Equivalent circuit



•External dimensions (Unit : mm)



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Transistor

●Absolute maximum ratings (Ta=25°C)

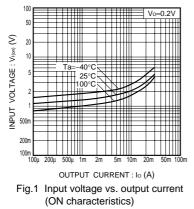
Parameter	Symbol	Limits				
Parameter		DTC124EM DTC124EE	DTC124EUA	DTC124EKA	DTC124ESA	Unit
Supply voltage	Vcc	50				V
Input voltage	Vin	-10 to +40				V
Output ourroot	lo	30				mA
Output current	IC(Max.)	100				
Power dissipation	Pd	150	200		300	mW
Junction temperature	Tj	150				°C
Storage temperature	Tstg	-55 to +150				°C

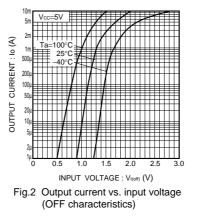
•Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Input voltage	VI(off)	-	-	0.5	v	Vcc=5V, Io=100μA
Input voltage	VI(on)	3	-	-	v	Vo=0.2V, Io=5mA
Output voltage	VO(on)	-	0.1	0.3	V	lo/l=10mA/0.5mA
Input current	h	-	-	0.36	mA	Vi=5V
Output current	IO(off)	-	-	0.5	μΑ	Vcc=50V, Vi=0V
DC current gain	Gı	56	-	-	-	Vo=5V, Io=5mA
Input resistance	R1	15.4	22	28.6	kΩ	_
Resistance ratio	R2/R1	0.8	1	1.2	-	_
Transition frequency	f⊤ *	-	250	-	MHz	Vce=10V, Ie=-5mA, f=100MHz

* Characteristics of built-in transistor

•Electrical characteristic curves





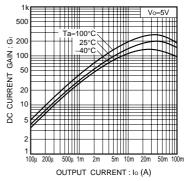
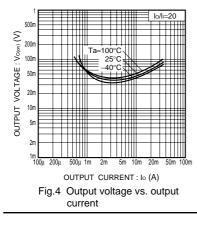


Fig.3 DC current gain vs. output current



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