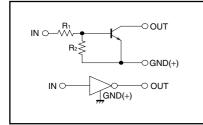
Digital transistors (built-in resistors) DTC114WE/DTC114WUA/DTC114WKA/DTC114WSA

Features

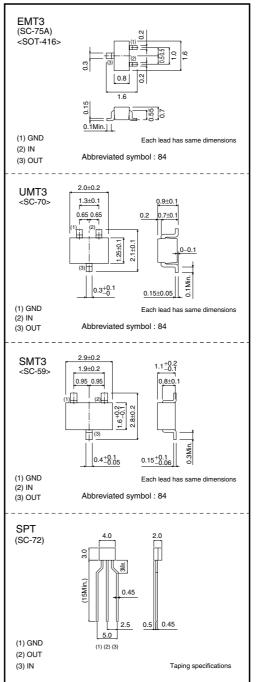
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input, and parasitic effects are almost completely eliminated.
- 3) Only the on / off conditions need to be set for operation, making device design easy.
- 4) Higher mounting densities can be achieved.

Circuit schematic



 $R_1=10k\Omega / R_2=4.7k\Omega$

•External dimensions (Unit : mm)





DTC114WE / DTC114WUA / DTC114WKA / DTC114WSA

Transistors

•Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit	
Supply voltage		Vcc	50	V	
Input voltage		Vi	-10 to +30	V	
Output current		lo	100	mA	
		IC(Max.)	100		
Power dissipation	DTC114WE		150*		
	DTC114WUA / DTC114WKA	Pd	200*	mW	
	DTC114WSA]	300*	1	
Junction temperature		Tj	150	°C	
Storage temperature		Tstg	-55 to +150	°C	

* Recommended land

•Package, marking, and packaging specifications

Part No.	DTC114WE	DTC114WUA	DTC114WKA	DTC114WSA					
Package	EMT3	UMT3	SMT3	SPT					
Marking	84	84	84	C114WS					
Packaging code	TL	T106	T146	TP					
Basic ordering unit (pieces)	3000	3000	3000	5000					

•External characteristics (Unit: mm)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
	VI(off)	-	-	0.8	v	Vcc=5V, Io=100μA	
Input voltage	VI(on)	3	-	_		Vo=0.3V, Io=2mA	
Output voltage	VO(on)	-	0.1	0.3	V	lo=10mA, li=0.5mA	
Input current	h	-	-	0.88	mA	Vi=5V	
Output current	IO(off)	-	-	0.5	μA	Vcc=50V, VI=0V	
DC current gain	Gi	24	_	_	-	lo=10mA, Vo=5V	
Input resistance	R1	7	10	13	kΩ	-	
Resistance ratio	R2/R1	0.37	0.47	0.57	-	-	
Transition frequency	fт	_	250	-	MHz	Vce=10V, Ie= -5mA, f=100MHz *	

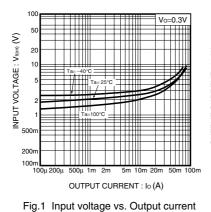
* Transition frequency of the device.

rohm

2/3

Transistors

•Electrical characteristics curves



(ON characteristics)

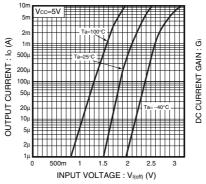


Fig.2 Output current vs. Input voltage (OFF characteristics)

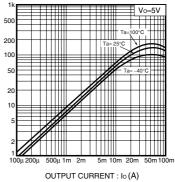


Fig.3 DC current gain vs. Output current

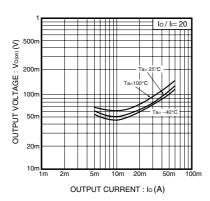


Fig.4 Output voltage vs. Output current

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