

## **Digital Transistor**

#### **Features**

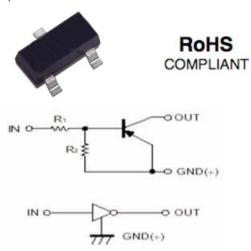
- · Epitaxial planar die construction.
- · Complementary NPN types available (DTC).
- Built-in biasing resistors,R1=R2.
- · RoHS compliant package

### **Applications**

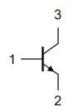
- · Case: SOT-23 Molded plastic
- Epoxy: UL94V-O rate flame retardant

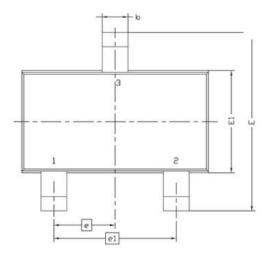
#### **Packing & Order Information**

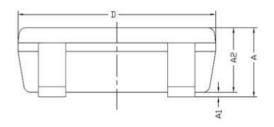
### 3,000/Reel

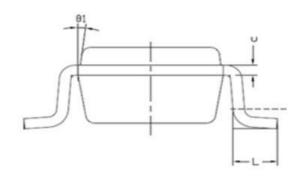


### **Graphic symbol**









Cumbal	MILLIMETERS		
Symbol	MIN	MAX	
Α	0.8	1.2	
A1	0	0.1	
A2	0.7	1.1	
b	0.3	0.5	
С	0.1	0.2	
D	2.7	3.1	
E	2.6	3	
E1	1.4	1.8	
е	0.95 BSC		
e1	1.9 BSC		
L	0.3	0.6	
θ1	7° NOM		



## **Digital Transistor**

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum Ratings (Tc=25°C unless otherwise noted)					
Symbol	Parameter		Value	Unit	
VCC	Supply Voltage		-50	V	
VIN	TA114ECA	TA114ECA	+10 to -40		
	TA124ECA	TA124ECA	+10 to -40	\/	
	TA143ECA	TA143ECA	+10 to -30	V	
	TA144ECA	TA144ECA	+10 to -40		
Ю	TA114ECA	TA114ECA	-50		
	TA124ECA	TA124ECA	-30	A	
	TA143ECA	TA143ECA	-100	mA mA	
	TA144ECA	TA144ECA	-30		
IC(Max.)	Output current ALL		-100	mA	
PD	Power Dissipation		200	mW	
RθJA	Thermal Resistance, Junction to Ambient Air		625	°C/W	
Tj,Tstg	Operating and Storage and Temperature Range		-55 to +150	°C	

Symbol	Parameter		Conditions	MIN	TYP	MAX	UNIT
VI(off)	Input Voltage		IC=100μA,IE=0	-0.5	-1.1		V
VI(on)		TA114ECA	IC=1mA,IB=0		-1.9	-3.0	V
	Input Voltage	TA124ECA	IE=100μA,IC=0		-1.9	-3.0	V
		TA143ECA	VCB=60V,IE=0		-1.9	-3.0	V
		TA144ECA	VEB=5V,IC=0		-1.9	-3.0	V
VO(on)	Output Voltage		Io/II=-10mA/-0.5mA		-0.1	-0.3	V
II	Input Current	TA114ECA	VI=-5V			-0.88	mA
		TA124ECA				-0.36	mA
		TA143ECA				-1.8	mA
		TA144ECA				-0.18	mA
IO(off)	Output Current		VCC=-50V,VI=0V			-0.5	uA
GI	DC Current Gain	TA114ECA	VO=-5V,IO=-5mA	30			
		TA124ECA	VO=-5V,IO=-5mA	56			
		TA143ECA	VO=-5V,IO=-10mA	20			
		TA144ECA	VO=-5V,IO=-5mA	68			



## Digital Transistor

Electrica	Electrical characteristics (Tc=25°C unless otherwise noted)						
Symbol	Parameter		Conditions	MIN	TYP	MAX	UNIT
RI(R2)	Input Resistor	TA114ECA		7	10	13	
		TA124ECA		15.4	22	28.6	kΩ
		TA143ECA		3.29	4.7	6.11	
		TA144ECA		32.9	47	61.1	
R2/R1	Resistance Ratio			0.8	1.0	1.2	
fT	Gain-Bandwidth Product		VCE=-10V,IE=5mA,f=100MHz		250		MHz

DEVICE MARK				
TA114ECA	14			
TA124ECA	15			
TA143ECA	13			
TA144ECA	16			



### **Digital Transistor**

■RATINGS AND CHARACTERISTIC CURVES

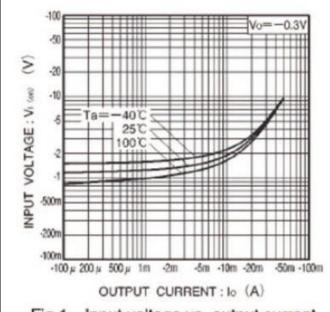


Fig.1 Input voltage vs. output current (ON characteristics)

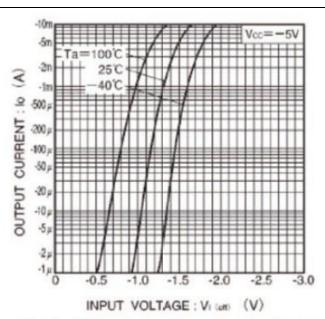
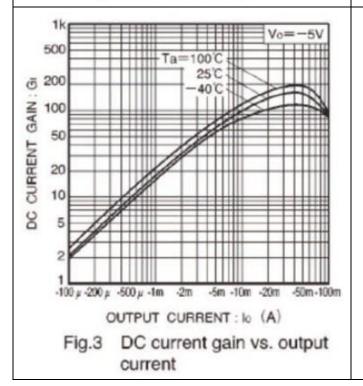


Fig.2 Output current vs. input voltage (OFF characteristics)





### **Digital Transistor**

#### **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE. Bruckewell Technology Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Bruckewell"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product. Bruckewell makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Bruckewell disclaims

- (i) Any and all liability arising out of the application or use of any product.
- (ii) Any and all liability, including without limitation special, consequential or incidental damages.
- (iii) Any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Bruckewell's knowledge of typical requirements that are often placed on Bruckewell products in generic applications.

Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time.

Product specifications do not expand or otherwise modify Bruckewell's terms and conditions of purchase, including but not limited to the warranty expressed therein.