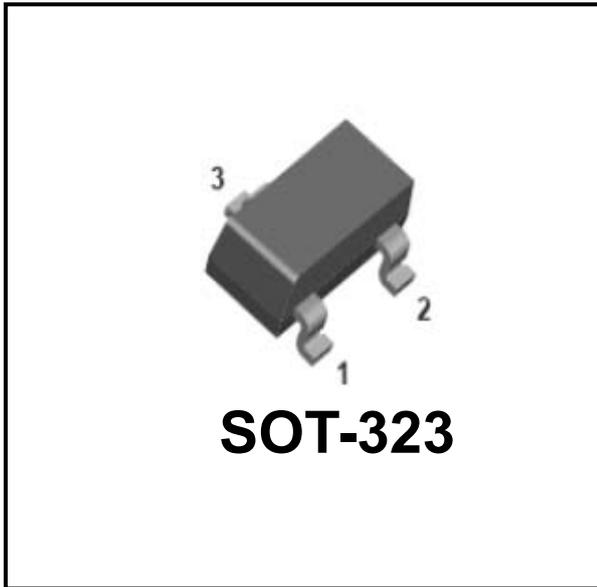


## NPN Digital Transistors (Built-in Resistors)



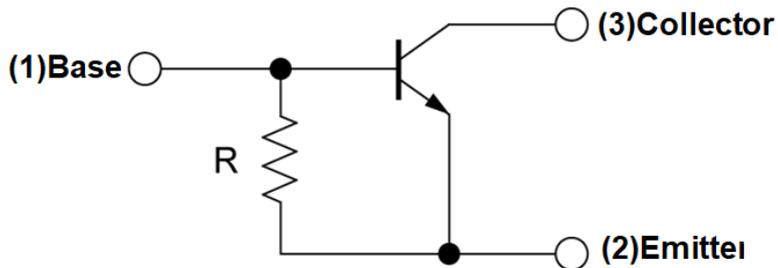
### Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- Surface mount package ideally Suited for Automatic Insertion

### Mechanical Data

- **Package:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K24

### Equivalent circuit



### Maximum Ratings (Ta=25°C Unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Collector-Base Voltage	$V_{CBO}$	V		50
Collector-Emitter Voltage	$V_{CEO}$	V		50
Emitter-Base Voltage	$V_{EBO}$	V		5
Collector Current	$I_C$	mA		100
Power Dissipation	$P_D$	mW		200
Junction Temperature	$T_J$	°C		150
Storage Temperature	$T_{STG}$	°C		-55 to +150



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## ■ Electrical Characteristics (Ta=25°C unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Collector-Base Breakdown Voltage	$V_{CBO}$	V	$I_C=50\mu A$	50		
Collector-Emitter Breakdown Voltage	$V_{CEO}$	V	$I_C=1mA$	50		
Emitter-Base Breakdown Voltage	$V_{EBO}$	V	$I_E=720\mu A$	5		
Collector Cut-off Current	$I_{CBO}$	$\mu A$	$V_{CB}=50V$			0.5
Emitter Cut-off Current	$I_{EBO}$	$\mu A$	$V_{EB}=4V$			0.5
DC current gain	$h_{FE}$		$V_{CE}=5V, I_C=5mA$	30		
Input resistance	R	$k\Omega$		7	10	13
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=10mA, I_B=0.5mA$			0.3
Transition frequency	$f_T$	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$		250	

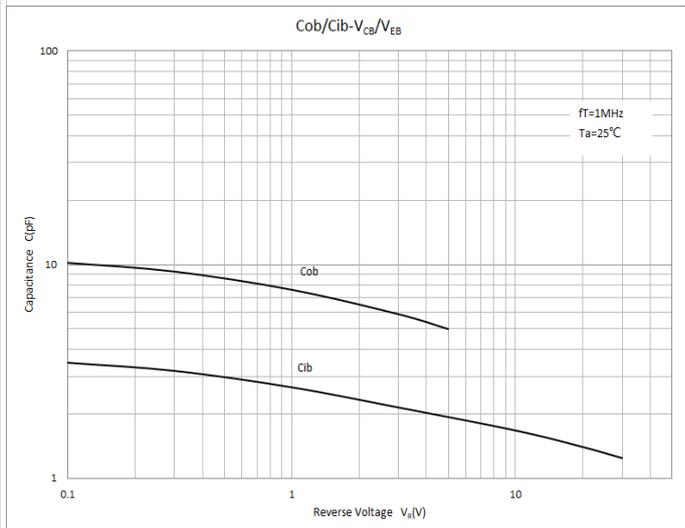
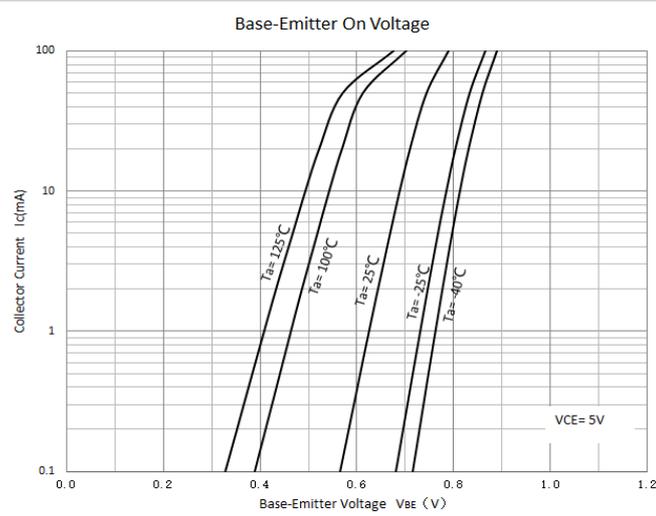
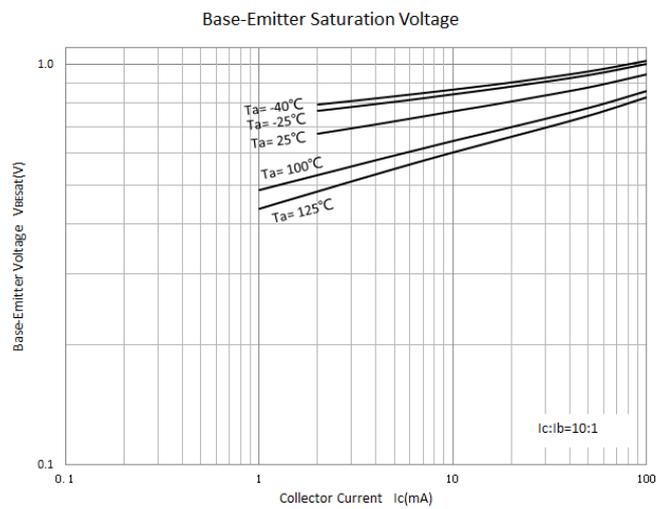
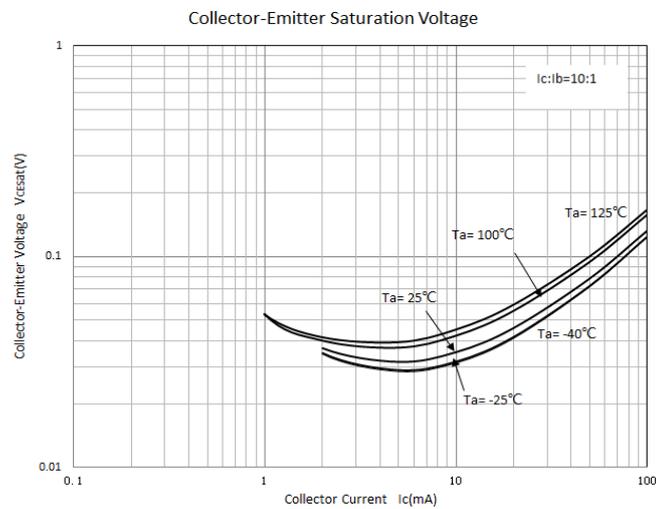
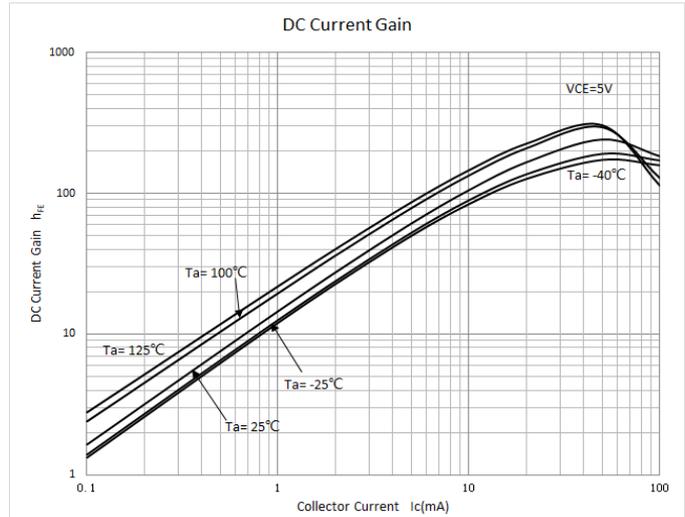
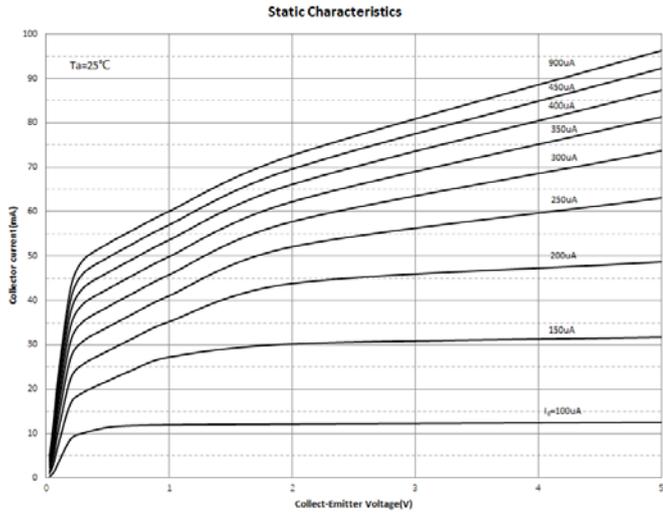
## ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
DTC114GUA	F2	Approximate 0.005	3000	30000	120000	7" reel



# DTC114GUA

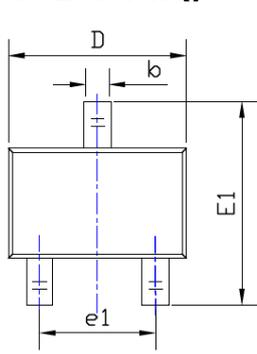
## ■ Characteristics (Typical)



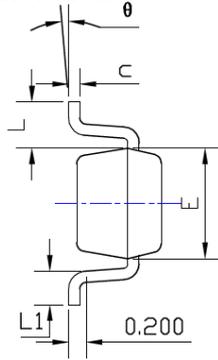


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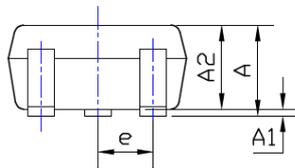
## ■SOT-323 Package Outline Dimensions



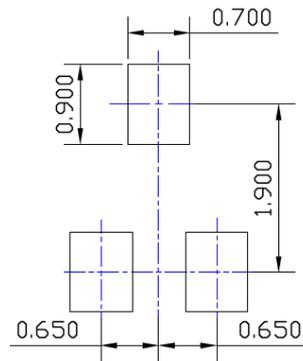
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

### NOTE:

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.

2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.

3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

Note:

1. All dimensions are in millimeters (mm) unless otherwise specified.

[所有尺寸均以毫米为单位, 除非另有说明]

2. General tolerances: ±0.10mm unless otherwise specified.

[通用公差为±0.10mm, 除非另有说明]

3. Dimensions and tolerances per ASME Y14.5M-2018.

[尺寸和公差遵循 ASME Y14.5M-2018 标准]

4. All dimensions shown are exclusive of burrs and gate residues.

Burrs and gate vestiges shall not exceed 0.15 mm in maximum.

[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]

5. Dimension b does not include dambar protrusion of max 0.100 mm per side.

[尺寸b不包括单边最大0.100 MM的中筋凸出部分]

6. Dimensions D and E are the overall extreme outer dimensions of the

mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.

[D和E是塑封体的外部极限尺寸, 不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺, 但是包含了包封错位的最大尺寸]

7. Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.

[成型的管脚应为同一平面, 共面性最大为0.1mm]

8. ★It is the key size.

[★ 标记为关键尺寸]



## DTC114GUA

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