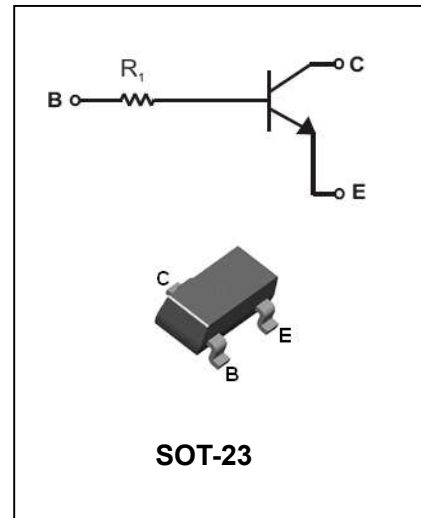


## Digital Transistor

## TDTC(R<sub>1</sub>-only SERIES)CAG

### FEATURES

- Epitaxial planar die construction.
- Complementary PNP types available(DTA).
- Built-in biasing resistor,R<sub>1</sub> only.
- Also available in lead free version.
- Non-Halogen.
- Qualified to AEC-Q101 Standards for High Reliability.



### APPLICATIONS

- The NPN style digital transistor.

### ORDERING INFORMATION

Type No.	Marking	Package Code
TDTC114TCAG	04	SOT-23
TDTC143TCAG	03	SOT-23
TDTC144TCAG	06	SOT-23

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	50	V
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C(Max.)</sub>	Collector Current	100	mA
P <sub>D</sub>	Power Dissipation	200	mW
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient Air	625	°C/W
T <sub>j</sub> ,T <sub>stg</sub>	Operating and Storage and Temperature Range	-55 to +150	°C

Digital Transistor

**TDTC(R<sub>1</sub>-only SERIES)CAG**

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =50μA	50			V
Collector-Emitter breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =1mA	50			V
Emitter-Base breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =50μA	5			V
Collector cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =50V	-	-	0.5	μA
Emitter cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V	-	-	0.5	μA
Collector-Emitter saturation voltage DTC114TCA DTC143TCA DTC144TCA	V <sub>CE(sat)</sub>	I <sub>C</sub> /I <sub>B</sub> =10mA/1mA I <sub>C</sub> /I <sub>B</sub> =5mA/0.25mA I <sub>C</sub> /I <sub>B</sub> =5mA/0.5mA			0.3	V
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> =1mA, V <sub>CE</sub> =5V	100	250	600	
Input Resistor(R <sub>1</sub> ) DTC114TCA DTC143TCA DTC144TCA	R <sub>1</sub>		7 3.29 32.9	10 4.7 47	13 6.11 61.1	kΩ
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>E</sub> =-5mA, f=100MHz	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

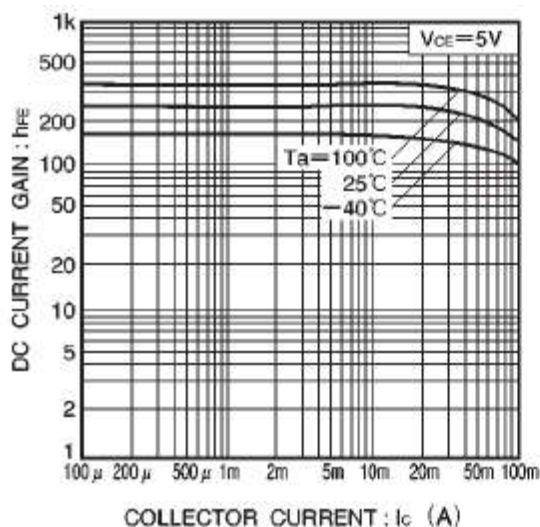


Fig.1 DC current gain vs. collector current

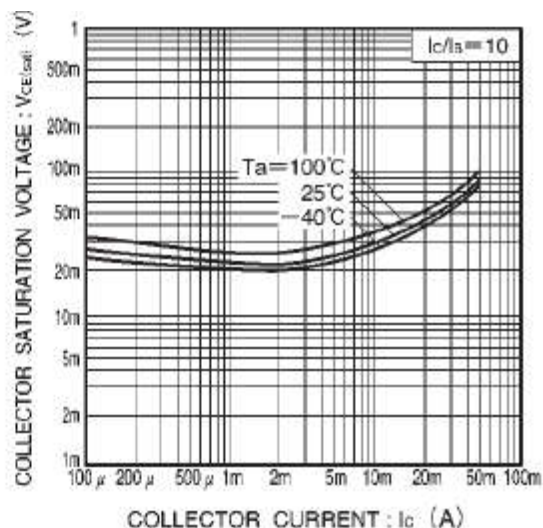


Fig.2 Collector-emitter saturation voltage vs. collector current

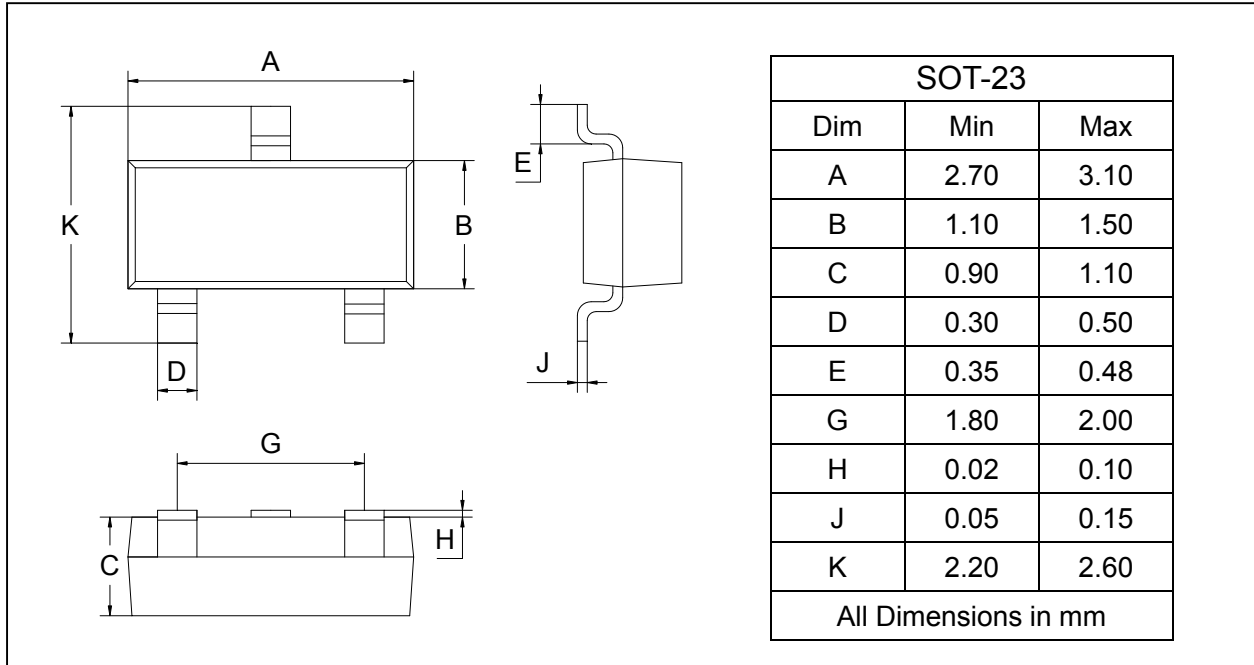
Digital Transistor

**TDTC(R<sub>1</sub>-only SERIES)CAG**

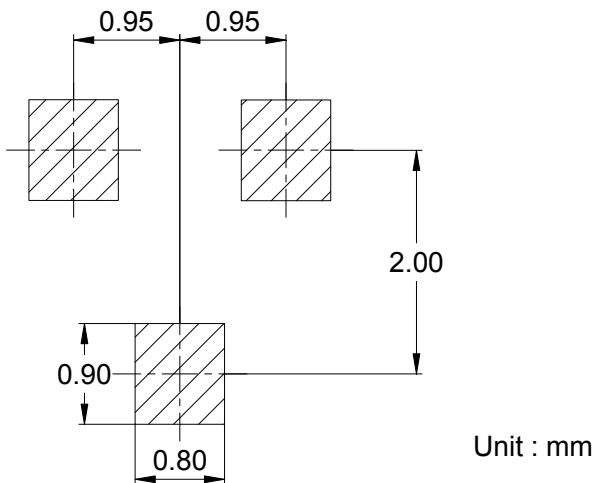
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
TDTC143TCAG/114TCAG/144TCAG	SOT-23	3000/Tape&Reel