



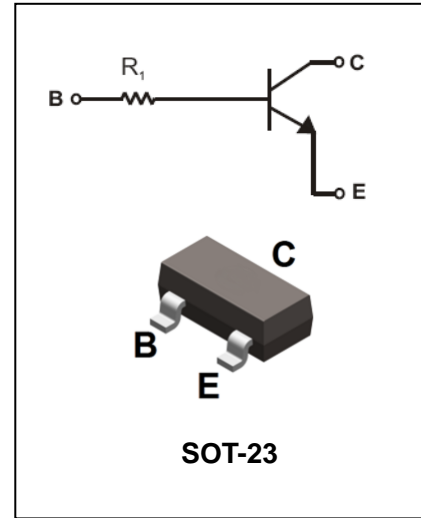
### FEATURES

- Epitaxial planar die construction
- Complementary PNP types available(DTA)
- Built-in biasing resistor, R<sub>1</sub> only
- Also available in lead free version

### APPLICATIONS

- The NPN style digital transistor

### ORDERING INFORMATION



Type No.	Marking	Package Code
DTC114TCA	04	SOT-23
DTC143TCA	03	SOT-23
DTC144TCA	06	SOT-23
DTC123TCA	02	SOT-23

### MAXIMUM RATING @ T<sub>A</sub> = 25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>CB0</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 *1	409	°C/W
R <sub>θJC</sub>	Thermal Resistance, Junction to Case *1	225	°C/W
R <sub>θJL</sub>	Thermal Resistance, Junction to Lead *1	197	°C/W
T <sub>J, TSTG</sub>	Operating and Storage and Temperature Range	-55 to +150	°C

Note 1: The data tested by surface mounted on a 15mm \* 15mm \* 1mm FR4-epoxy P.C.B



### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base breakdown Voltage	$BV_{CBO}$	$I_C=50\mu A$	50	-	-	V
Collector-Emitter breakdown Voltage	$BV_{CEO}$	$I_C=1mA$	50	-	-	V
Emitter-Base breakdown Voltage	$BV_{EBO}$	$I_E=50\mu A$	5	-	-	V
Collector cutoff Current	$I_{CBO}$	$V_{CB}=50V$	-	-	0.5	$\mu A$
Emitter cutoff Current	$I_{EBO}$	$V_{EB}=4V$	-	-	0.5	$\mu A$
Collector-Emitter saturation voltage DTC114TCA DTC143TCA DTC144TCA DTC123TCA	$V_{CE(sat)}$	$I_C/I_B=10mA/1mA$ $I_C/I_B=5mA/0.25mA$ $I_C/I_B=5mA/0.5mA$ $I_C/I_B=5mA/0.25mA$	-	-	0.3	V
DC Current Gain	$h_{FE}$	$I_C=1mA, V_{CE}=5V$	100	250	600	
Input Resistor( $R_1$ ) DTC114TCA DTC143TCA DTC144TCA DTC123TCA	$R_1$		7 3.29 32.9 1.54	10 4.7 47 2.2	13 6.11 61.1 2.86	$k\Omega$
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_E=-5mA,$ $f=100MHz$	-	250	-	MHz

### TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

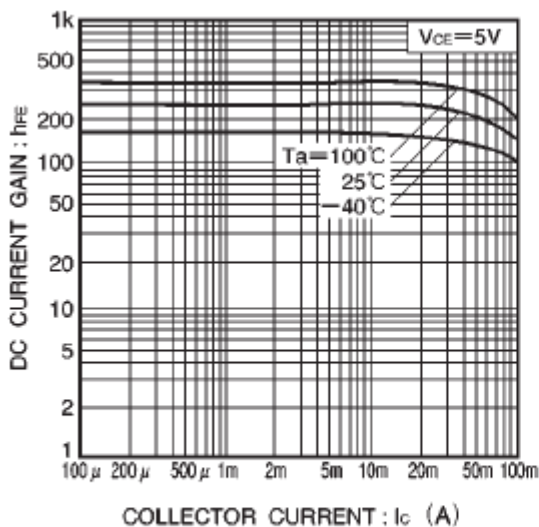


Fig.1 DC current gain vs. collector current

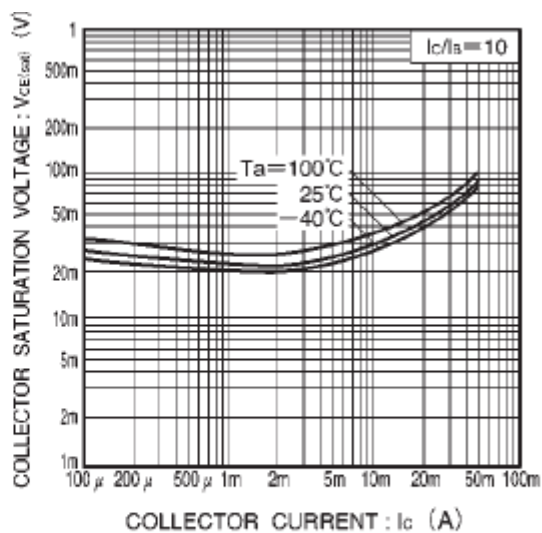


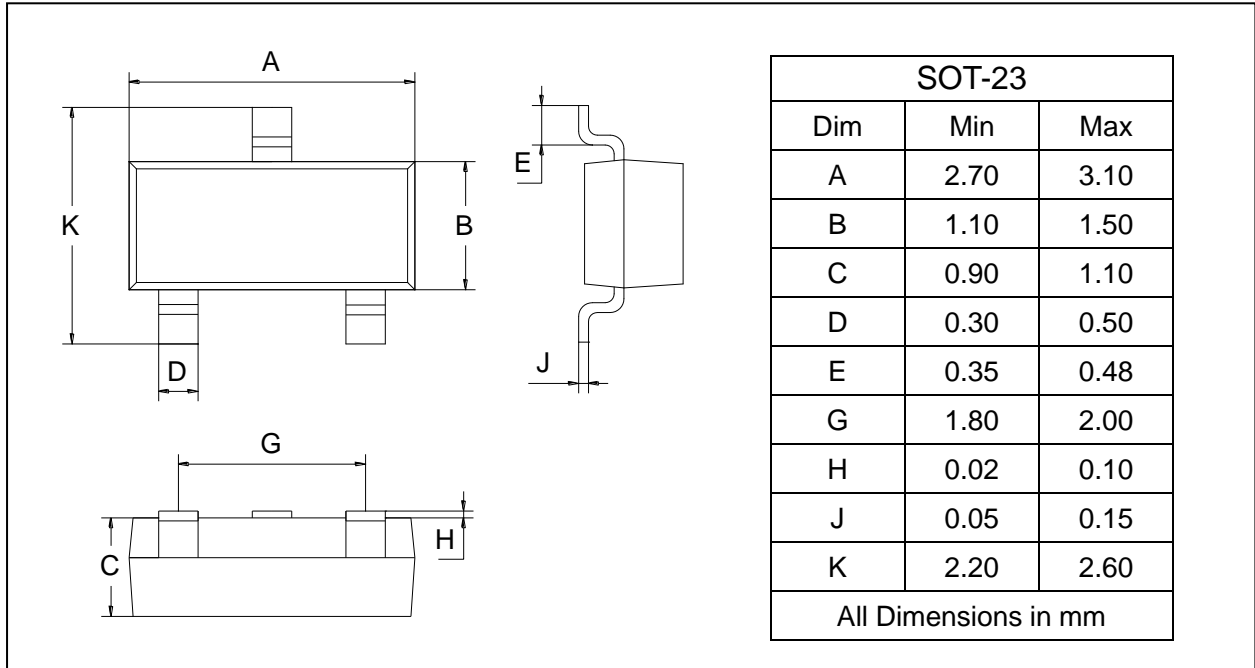
Fig.2 Collector-emitter saturation voltage vs. collector current



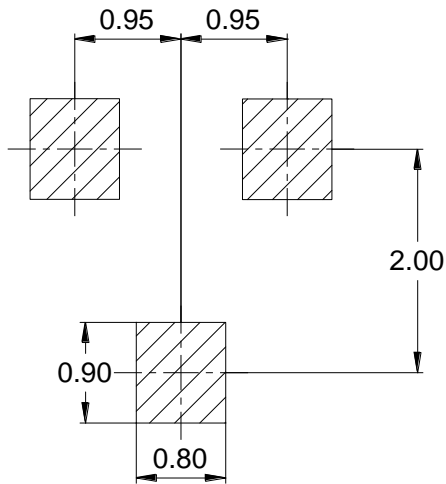
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
DTC143TCA/114TCA/144TCA/123TCA	SOT-23	3000 pcs / Tape & Reel