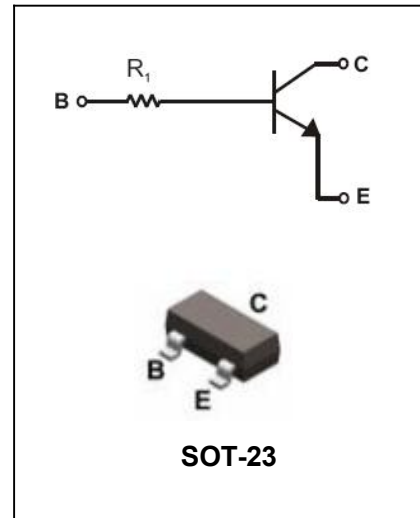


Digital Transistor

DTC(R₁-only SERIES)CA

FEATURES

- Epitaxial planar die construction
- Complementary PNP types available(DTA)
- Built-in biasing resistor, R₁ 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

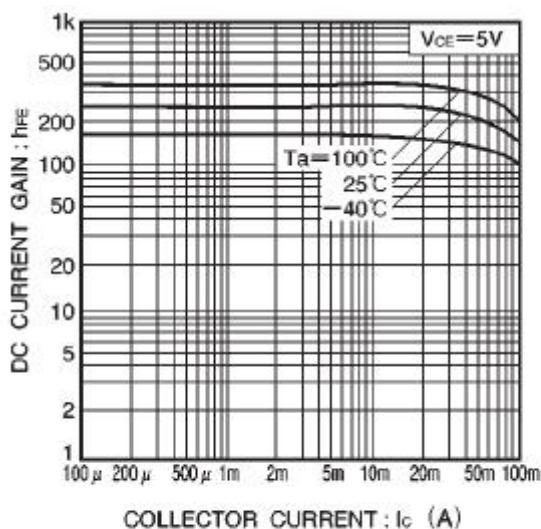
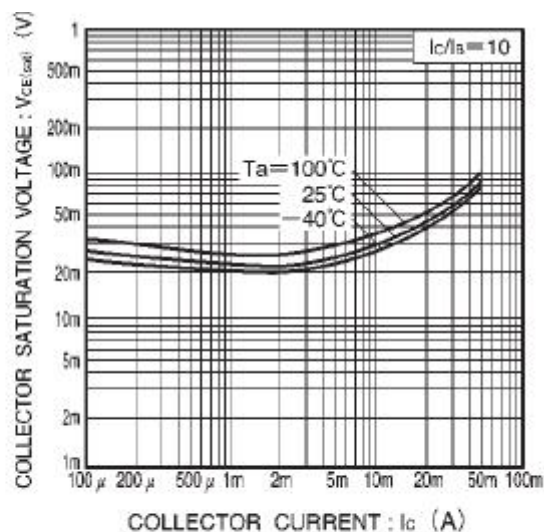
MAXIMUM RATING @ T_A = 25°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	50	V
V _{CEO}	Collector-Emitter Voltage	50	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C (Max.)	Collector Current	100	mA
P _D	Power Dissipation	200	mW
R _{θJA}	Thermal Resistance, Junction to Ambient Air *1	409	°C/W
R _{θJC}	Thermal Resistance, Junction to Case *1	225	°C/W
R _{θJL}	Thermal Resistance, Junction to Lead *1	197	°C/W
T _J , T _{STG}	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

Digital Transistor
DTC(R₁-only SERIES)CA
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	μA
Emitter cutoff Current	I_{EBO}	$V_{EB}=4V$	-	-	0.5	μA
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 Ω
Transition frequency	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

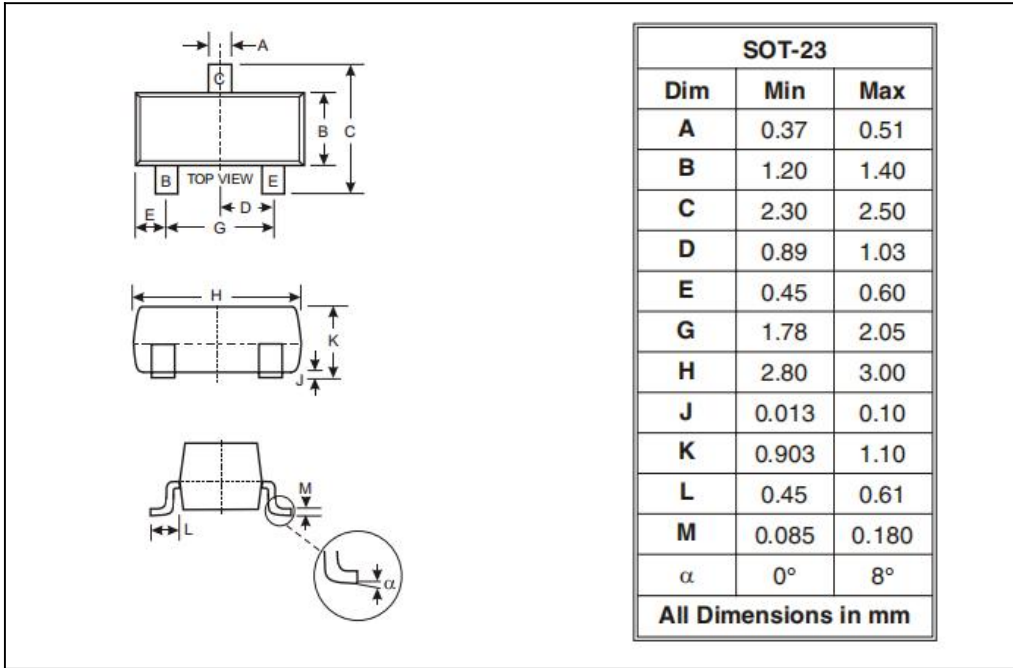
Digital Transistor

DTC(R₁-only SERIES)CA

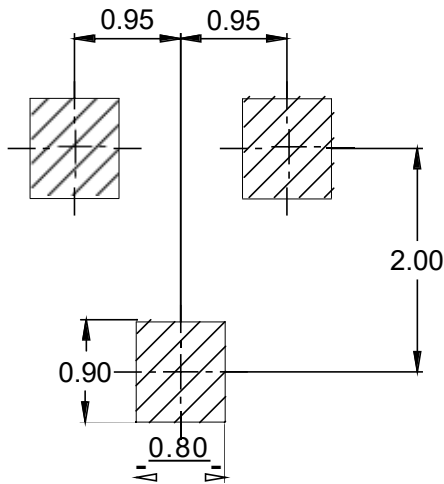
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

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