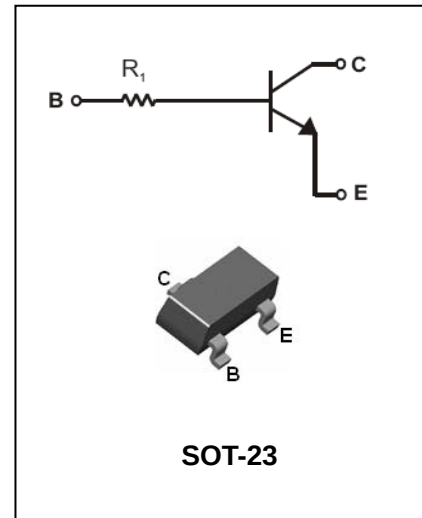


Digital Transistor

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

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CBO}	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	625	°C/W
T _j , T _{stg}	Operating and Storage and Temperature Range	-55 to +150	°C

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	$V_{CE(sat)}$	$I_C/I_B=10mA/1mA$ $I_C/I_B=5mA/0.25mA$ $I_C/I_B=5mA/0.5mA$			0.3	V
DC Current Gain	h_{FE}	$I_C=1mA, V_{CE}=5V$	100	250	600	
Input Resistor(R ₁) DTC114TCA DTC143TCA DTC144TCA	R_1		7 3.29 32.9	10 4.7 47	13 6.11 61.1	k Ω
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_E=-5mA,$ $f=100MHz$	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

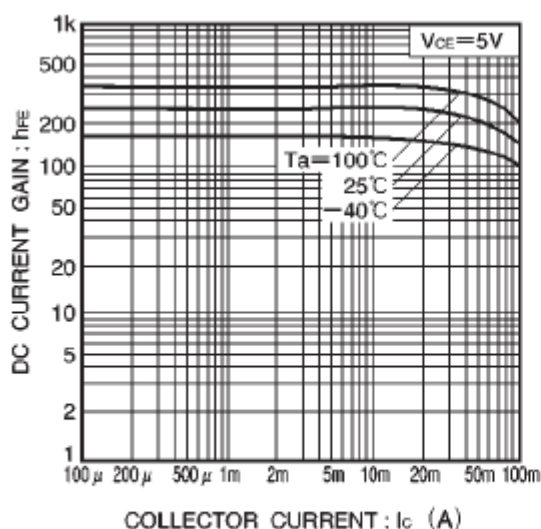


Fig.1 DC current gain vs. collector current

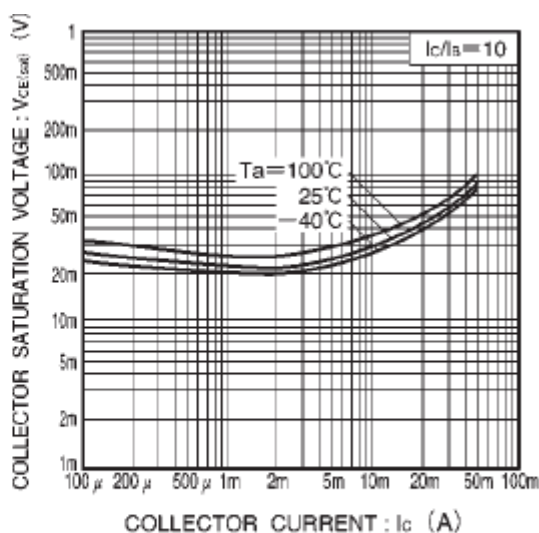


Fig.2 Collector-emitter saturation voltage vs. collector current

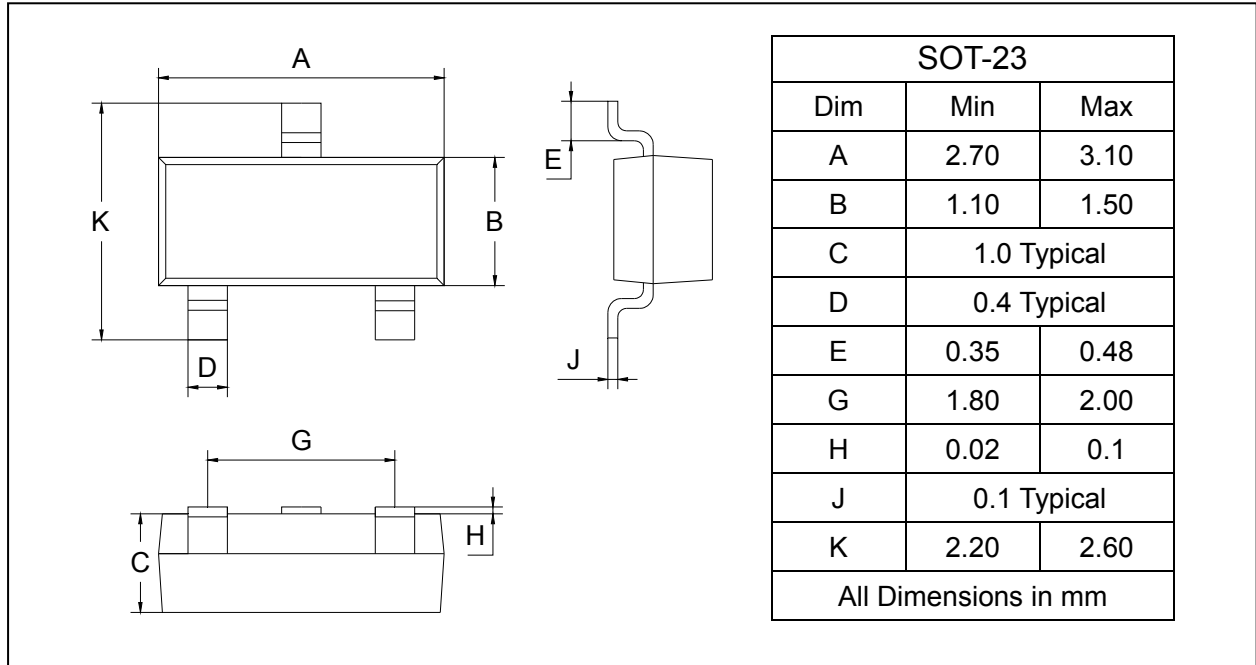
Digital Transistor

DTC(R₁-only SERIES)CA

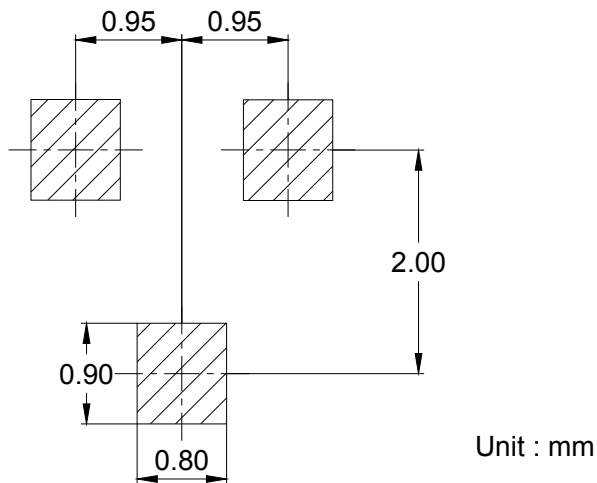
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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