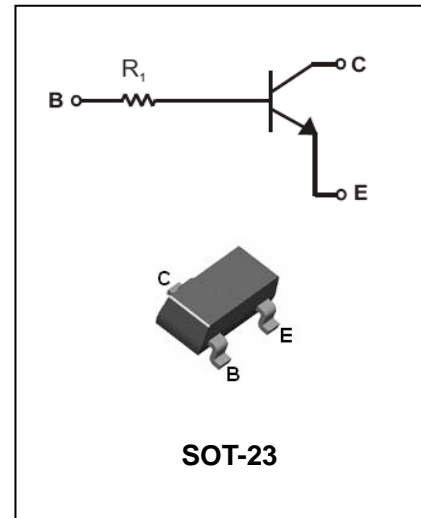


Digital Transistor

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
DTC143TCA	03	SOT-23
DTC114TCA	04	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

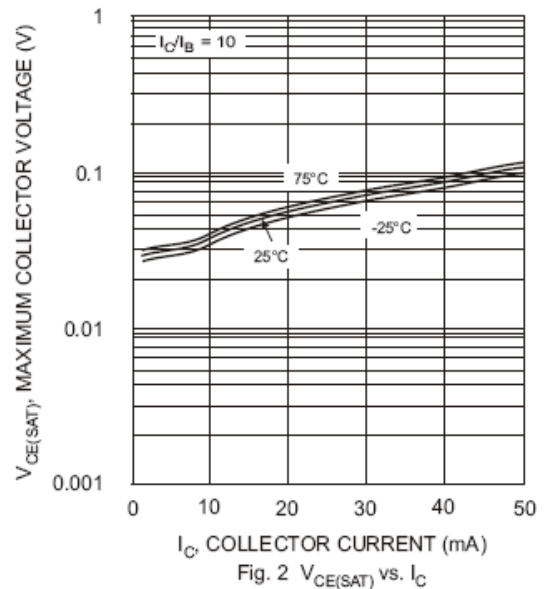
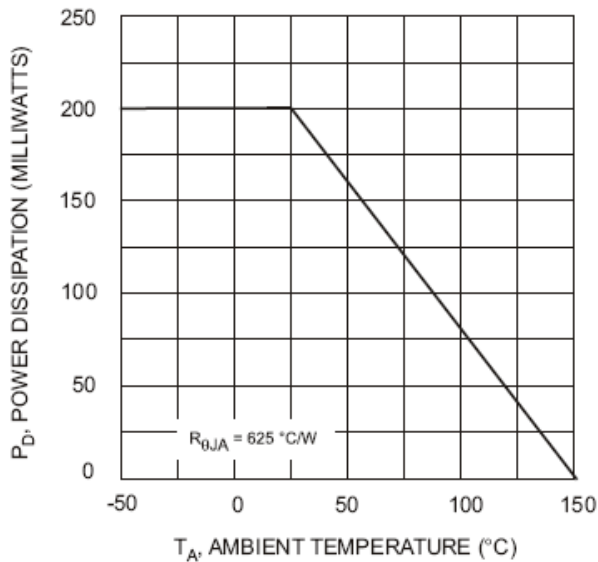
Digital Transistor

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 DTC143TCA DTC114TCA DTC144TCA	$V_{CE(sat)}$	$I_C/I_B=2.5mA/0.25mA$ $I_C/I_B=1mA/0.1mA$ $I_C/I_B=2.5mA/0.25mA$			0.3	V
DC Current Gain	h_{FE}	$I_C=1mA, V_{CE}=5V$	100	250	600	
Input Resistor(R ₁) DTC143TCA DTC114TCA DTC144TCA	R_1			4.7 10 47		k Ω
Input Resistor(R ₁)Tolerance	ΔR_1		-30		+30	%
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_E=5mA,$ $f=100MHz$	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



Digital Transistor

DTC(R₁-only SERIES)CA

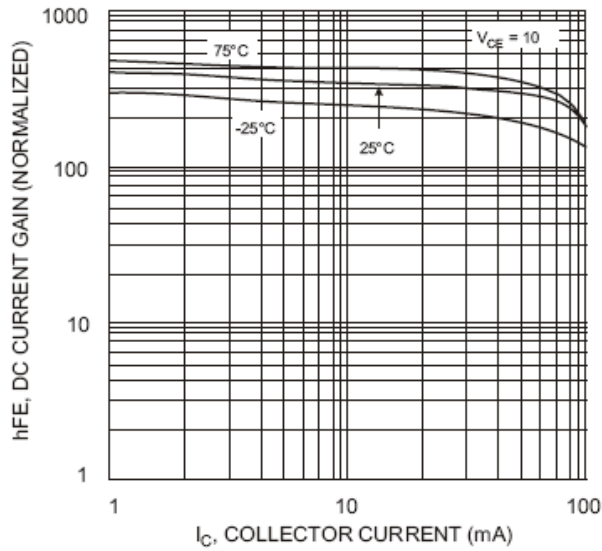


Fig. 3 DC Current Gain

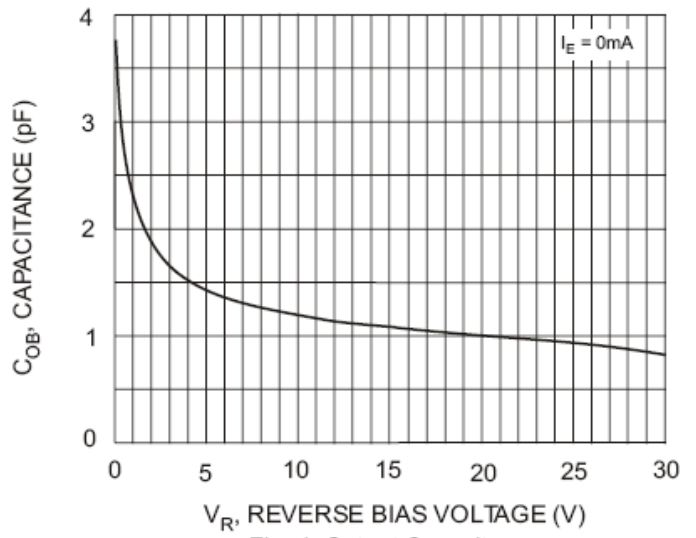


Fig. 4 Output Capacitance

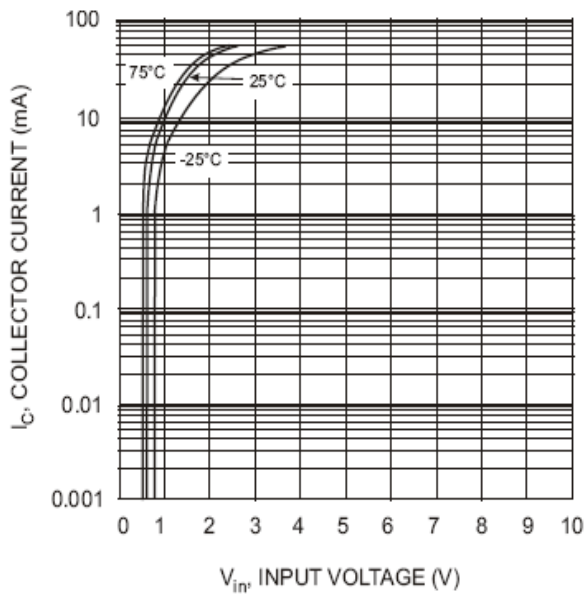


Fig. 5 Collector Current Vs. Input Voltage

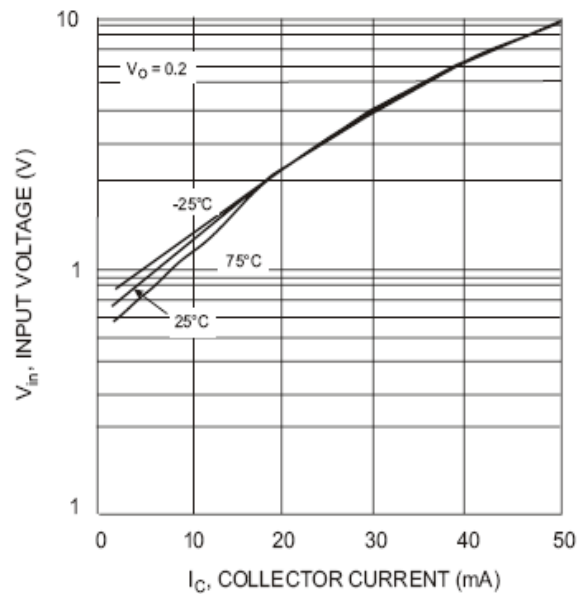


Fig. 6 Input Voltage vs. Collector Current

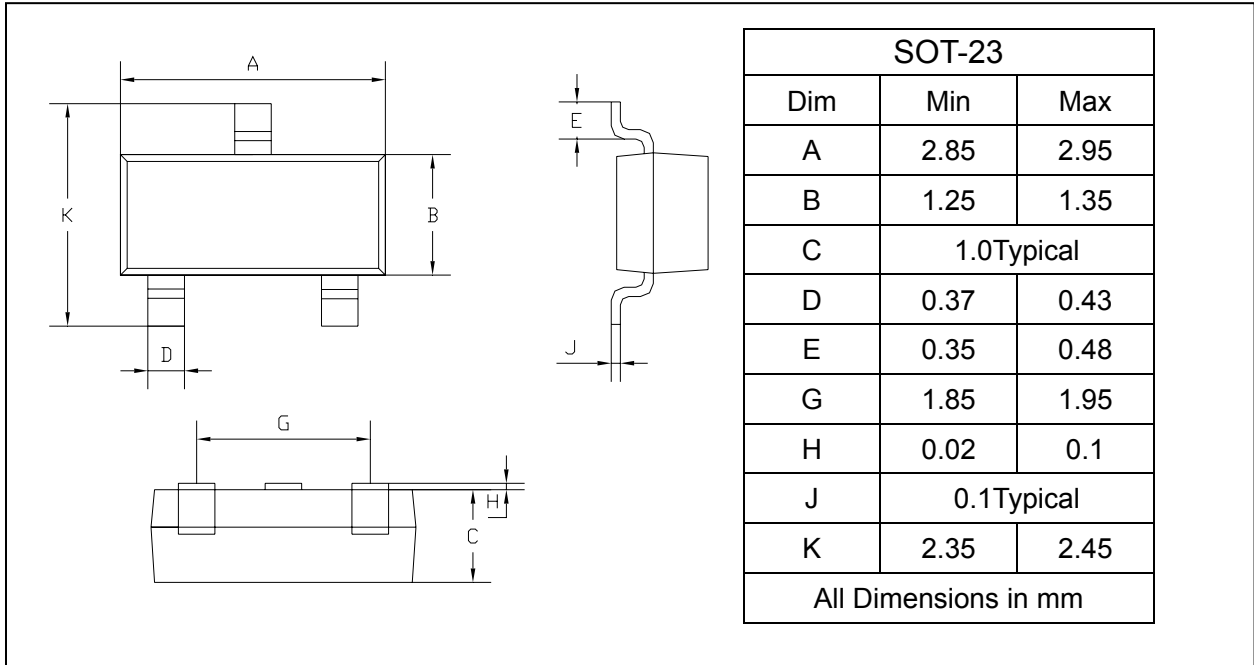
Digital Transistor

DTC(R₁-only SERIES)CA

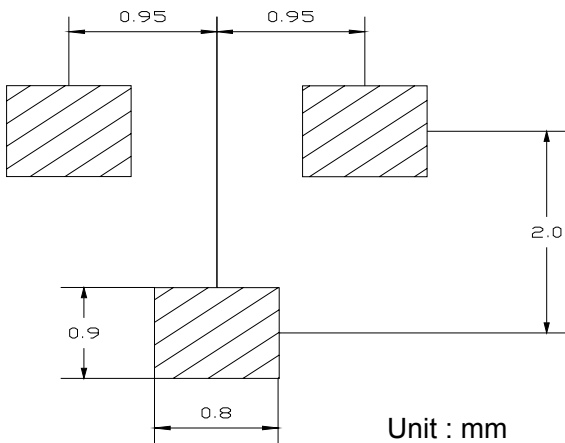
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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