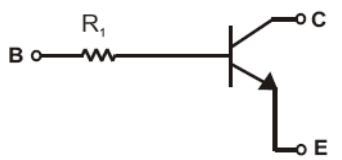
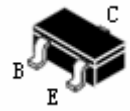
Digital Transistor **DTC(R_1-only SERIES)UA**

FEATURES

- Epitaxial planar die construction.
- Complementary PNP types available(DTA).
- Built-in biasing resistor,R_1 only.
- Also available in lead free version.

Lead-free





SOT-323

APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC143TUA	43	SOT-323
DTC114TUA	04	SOT-323
DTC144TUA	06	SOT-323

MAXIMUM RATING @ Ta=25℃ 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
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air	625	℃/W
T_j,T_{stg}	Operating and Storage and Temperature Range	-55 to +150	℃

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Digital Transistor **DTC(R_1-only SERIES)UA**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-Base breakdown Voltage	BV_{CBO}	I_C=50μA	50			V
Collector-Emitter breakdown Voltage	BV_{CEO}	I_C=1mA	50			V
Emitter-Base breakdown Voltage	BV_{EBO}	I_E=50μA	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 DTC143TUA DTC114TUA DTC144TUA	$V_{CE(sat)}$	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) DTC143TUA DTC114TUA DTC144TUA	R_1			4.7 10 47		kΩ
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℃ unless otherwise specified

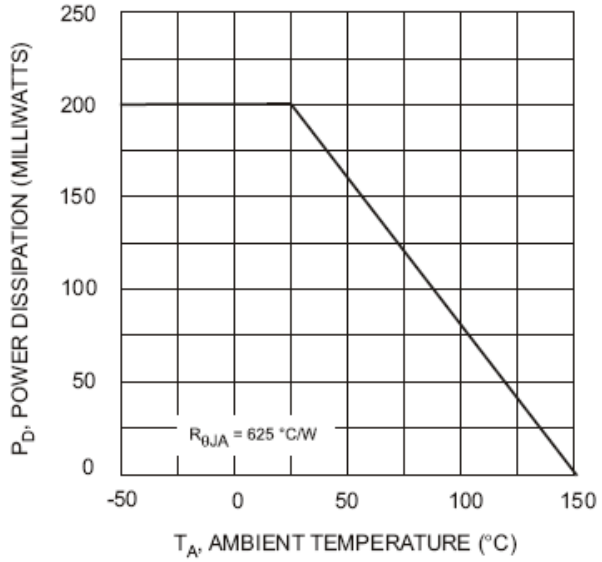


Fig. 1 Derating Curve

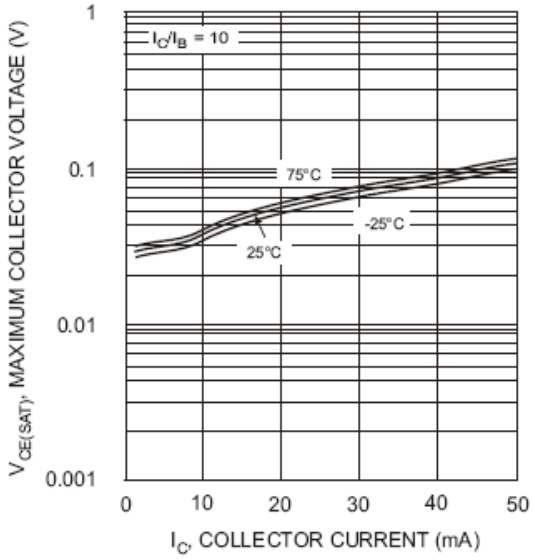


Fig. 2 $V_{CE(SAT)}$ vs. I_C

Digital Transistor **DTC(R_1-only SERIES)UA**

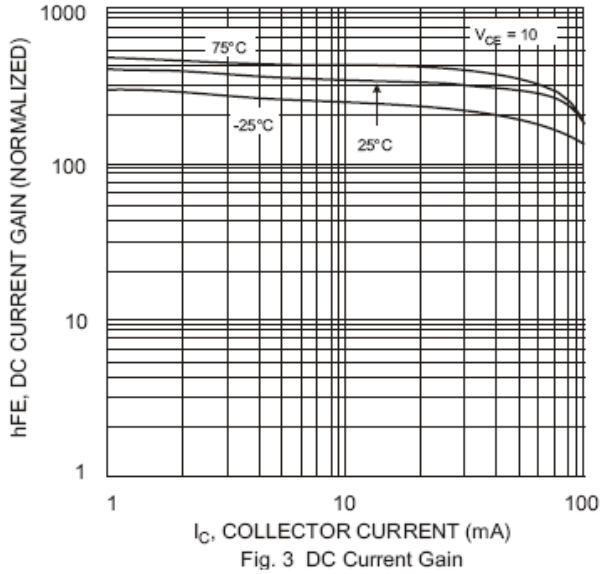


Fig. 3 DC Current Gain

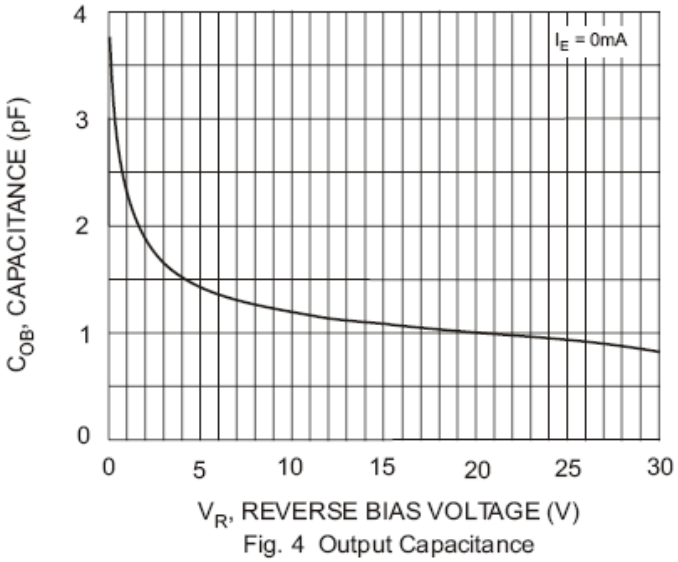


Fig. 4 Output Capacitance

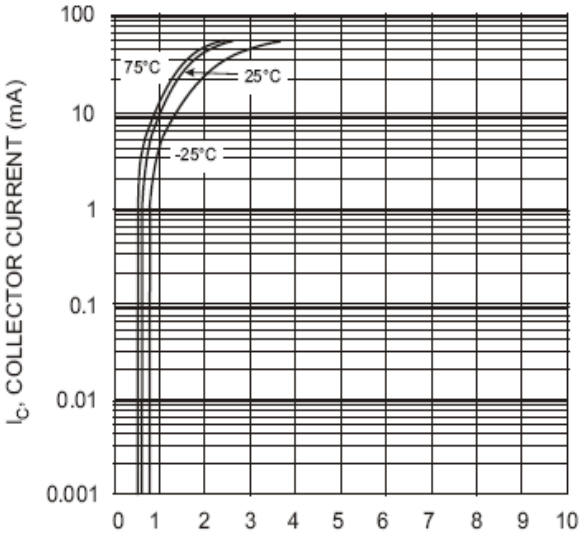


Fig. 5 Collector Current Vs. Input Voltage

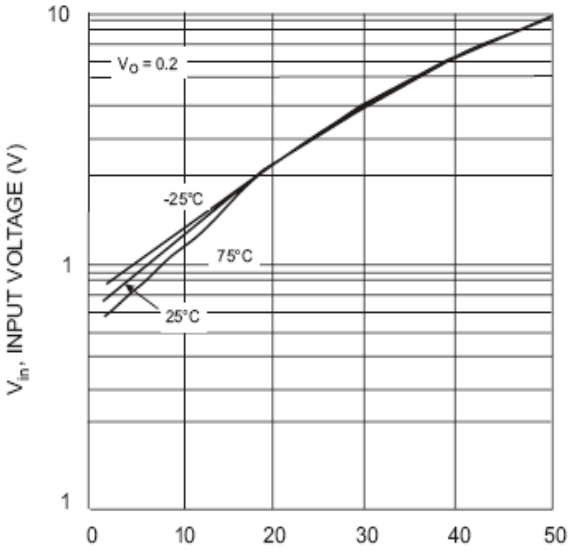
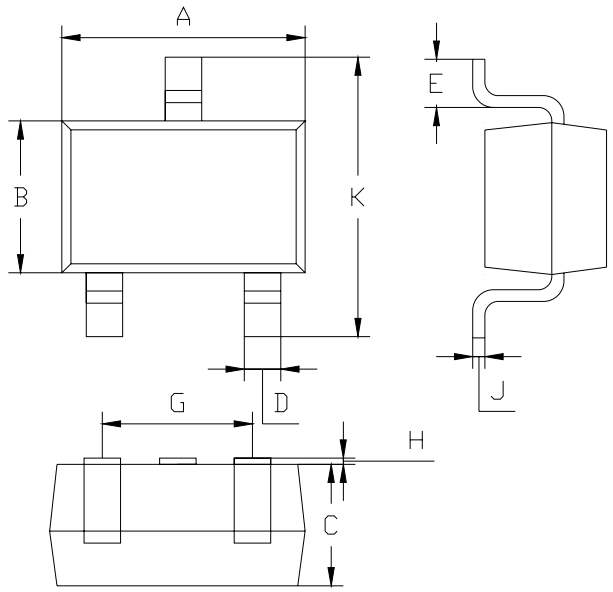


Fig. 6 Input Voltage vs. Collector Current

Digital Transistor **DTC(R_1-only SERIES)UA**

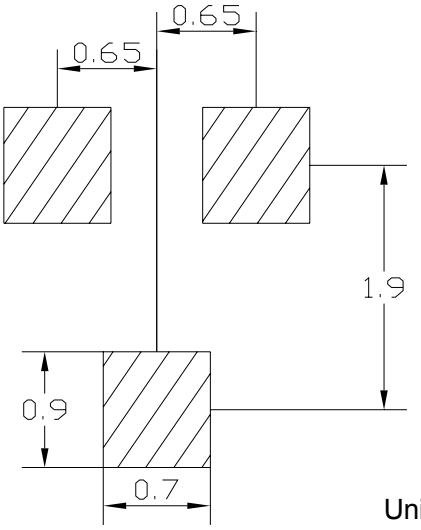
PACKAGE OUTLINE

Plastic surface mounted package SOT-323



SOT-323		
Dim	Min	Max
A	1.8	2.2
B	1.15	1.35
C	1.0Typical	
D	0.15	0.35
E	0.25	0.40
G	1.2	1.4
H	0.02	0.1
J	0.1Typical	
K	2.1	2.3
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
DTCXXXTUA	SOT-323	3000/Tape&Reel