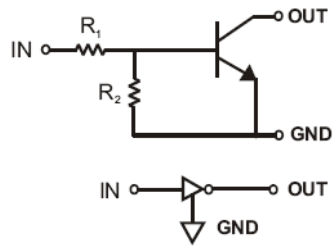
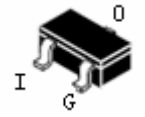
Digital Transistor DTC(R_1=R_2 SERIES)UA

FEATURES

- Epitaxial planar die construction.
- Complementary PNP types available(DTA).
- Built-in biasing resistors,R_1=R_2
- Also available in lead free version.

Lead-free





SOT-323

APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC114EUA	24	SOT-323
DTC143EUA	23	SOT-323
DTC124EUA	25	SOT-323
DTC144EUA	26	SOT-323

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CC}	Supply Voltage		50	V
V_{IN}	Input Voltage	DTC114EUA	-10 to+40	V
		DTC124EUA	-10 to+40	
		DTC143EUA	-10 to+30	
		DTC144EUA	-10 to+40	
I_O	Output Current	DTC114EUA	50	mA
		DTC124EUA	30	
		DTC143EUA	100	
		DTC144EUA	100	
I_C(Max.)	Output current	ALL	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	℃

Digital Transistor **DTC(R_1=R_2 SERIES)UA**

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter		Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage		$V_{I(off)}$	V_{CC}=5V,I_O=100μA	0.5	1.1	-	V
Input Voltage	DTC143EUA DTC114EUA DTC144EUA DTC124EUA	$V_{I(on)}$	V_O=0.3V,I_O=20mA V_O=0.3V,I_O=10mA V_O=0.3V,I_O=2mA V_O=0.3V,I_O=5mA	-	1.9	3	
Output Voltage	DTC143EUA DTC114EUA DTC144EUA DTC124EUA	$V_{O(on)}$	I_o/I_I=10mA/0.5mA,	-	0.1	0.3	V
Input Current	DTC143EUA DTC114EUA DTC144EUA DTC124EUA	I_I	V_I=5V	-	-	1.8 0.88 0.18 0.36	mA
Output Current		$I_{O(off)}$	V_{CC}=50V,V_I=0V	-	-	0.5	μA
DC Current Gain	DTC143EUA DTC114EUA DTC144EUA DTC124EUA	G_I	V_O=5V,I_O=10mA V_O=5V,I_O=5mA V_O=5V,I_O=5mA V_O=5V,I_O=5mA	20 20 68 56	-	-	
Input Resistor	DTC143EUA DTC114EUA DTC144EUA DTC124EUA	R_1(R_2)			4.7 10 47 22		kΩ
Input Resistor (R_1) Tolerance		ΔR_1	-	-30		+30	%
Resistance Ratio		R_2/R_1	-	0.8	1	1.2	
Gain-Bandwidth Product		f_T	V_{CE}=10V,I_E=5mA, f=100MHz	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Digital Transistor **DTC(R_1=R_2 SERIES)UA**

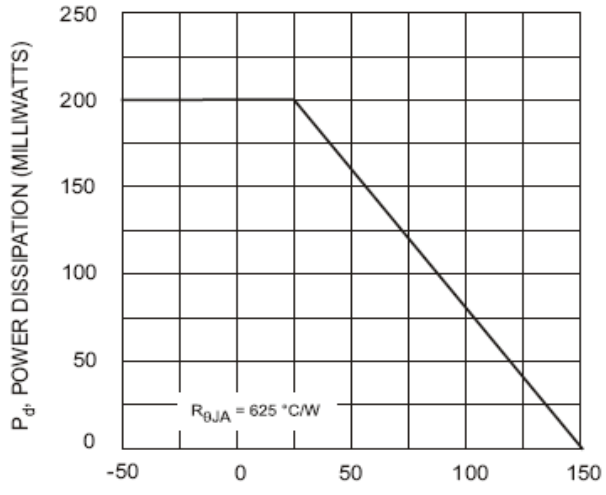


Fig. 1 Derating Curve

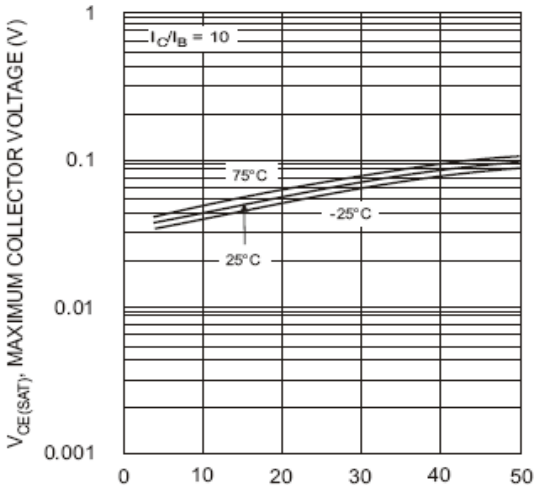


Fig. 2 $V_{CE(SAT)}$ vs. I_C

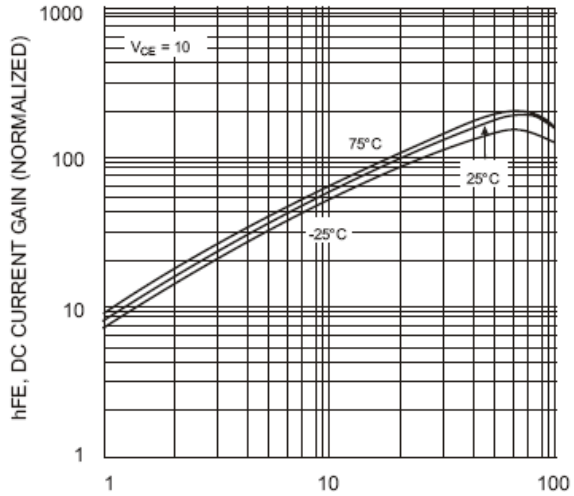


Fig. 3 DC CURRENT GAIN

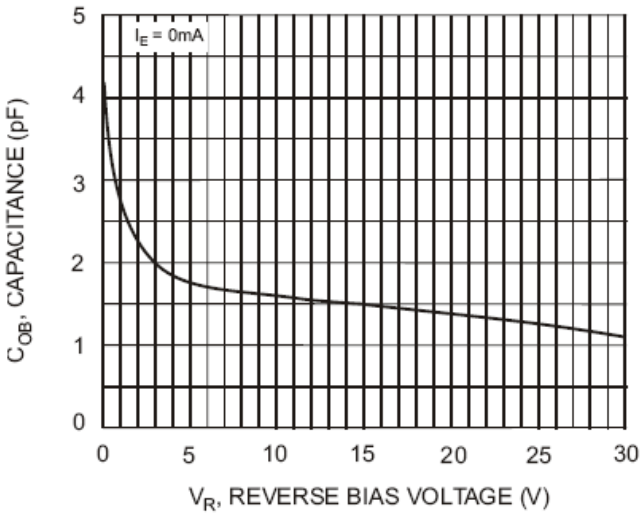


Fig. 4 Output Capacitance

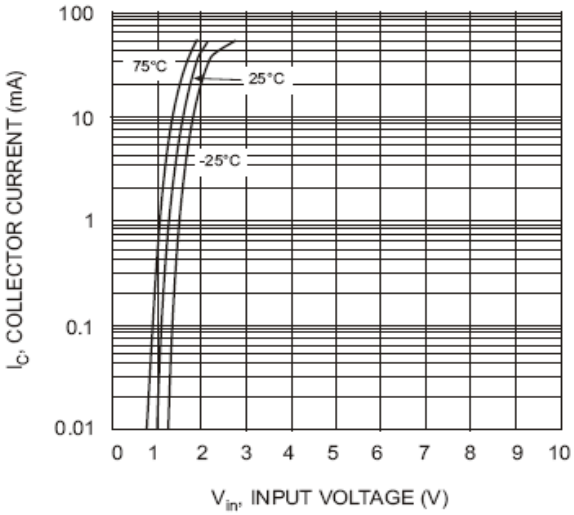


Fig. 5 Collector Current Vs. Input Voltage

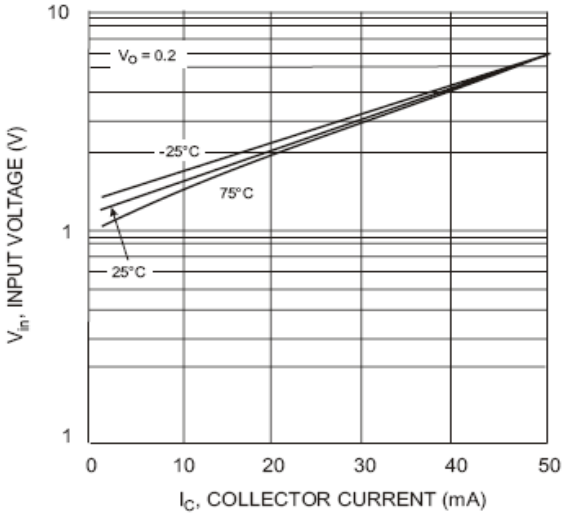
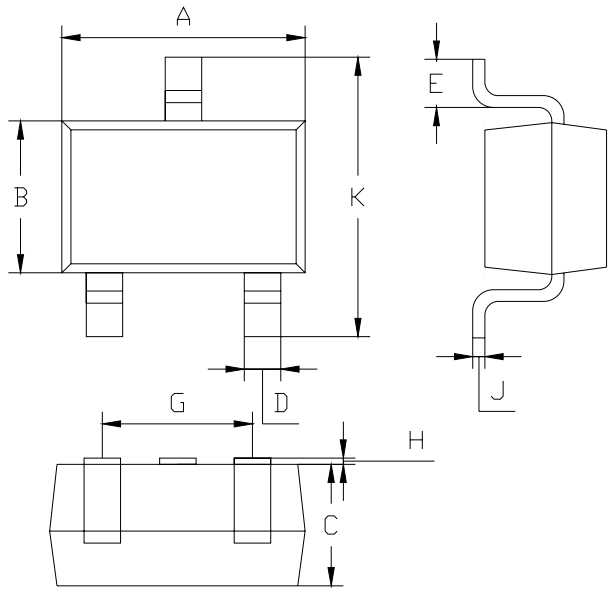


Fig. 6 Input Voltage vs. Collector Current

Digital Transistor **DTC(R_1=R_2 SERIES)UA**

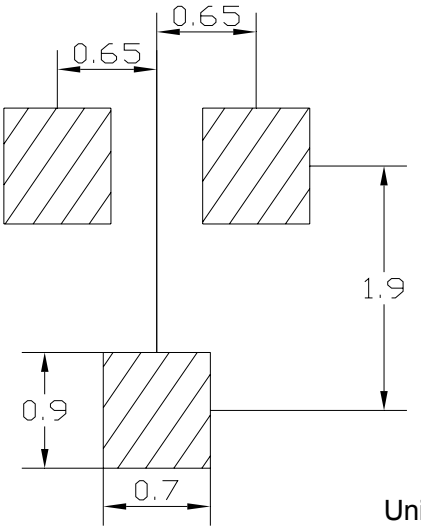
PACKAGE OUTLINE

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
DTC114EUA/124EUA/143EUA/144EUA	SOT-323	3000/Tape&Reel