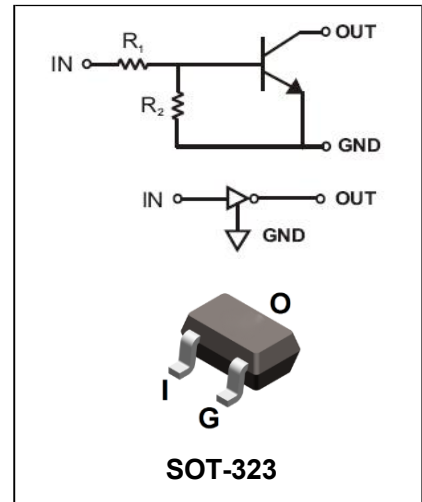


Digital Transistor

DTC(R₁=R₂ SERIES)UA

FEATURES

- Epitaxial planar die construction.
- Complementary PNP types available(DTA).
- Built-in biasing resistors,R₁=R₂.
- Also available in lead free version.



APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC114EUA	24	SOT-323
DTC124EUA	25	SOT-323
DTC143EUA	23	SOT-323
DTC144EUA	26	SOT-323
DTC115EUA	29	SOT-323

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units	
V _{CC}	Supply Voltage	50	V	
V _{IN}	Input Voltage	DTC114EUA DTC124EUA DTC143EUA DTC144EUA DTC115EUA	-10 to+40 -10 to+40 -10 to+30 -10 to+40 -10 to +40	V
I _O	Output Current	DTC114EUA DTC124EUA DTC143EUA DTC144EUA DTC115EUA	50 30 100 30 100	mA
I _C (Max.)	Output current	ALL	100	mA
P _D	Power Dissipation		200	mW
R _{θJA}	Thermal Resistance, Junction to Ambient Air *1		280	°C/W
R _{θJC}	Thermal Resistance, Junction to Case *1		160	°C/W
R _{θJL}	Thermal Resistance, Junction to Lead *1		210	°C/W
T _J , T _{STG}	Operating and Storage and Temperature Range		-55 to +150	°C



Digital Transistor

DTC(R₁=R₂ SERIES)UA

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	V _{I(off)}	V _{CC} =5V, I _o =100μA	0.5	-	-	V
Input Voltage	V _{I(on)}	DTC114EUA V _O =0.3V, I _o =10mA	-	-	3	
		DTC124EUA V _O =0.2V, I _o =5mA				
		DTC143EUA V _O =0.3V, I _o =20mA				
		DTC144EUA V _O =0.3V, I _o =2mA				
		DTC115EUA V _O =0.3V, I _o =1mA				
Output Voltage	V _{O(on)}	DTC114EUA I _b /I _i =10mA/0.5mA	-	-	0.3	V
		DTC124EUA I _b /I _i =10mA/0.5mA				
		DTC143EUA I _b /I _i =10mA/0.5mA				
		DTC144EUA I _b /I _i =10mA/0.5mA				
		DTC115EUA I _b /I _i =5mA/0.25mA				
Input Current	I _i	V _i =5V	-	-	0.88	mA
					0.36	
					1.8	
					0.18	
					0.15	
Output Current	I _{o(off)}	V _{CC} =50V, V _i =0V	-	-	0.5	μA
DC Current Gain	G _i	DTC114EUA V _O =5V, I _o =5mA	30	-	-	-
		DTC124EUA V _O =5V, I _o =5mA	56			
		DTC143EUA V _O =5V, I _o =10mA	20			
		DTC144EUA V _O =5V, I _o =5mA	68			
		DTC115EUA V _O =5V, I _o =5mA	82			
Input Resistor	R ₁ (R ₂)		7	10	13	kΩ
			15.4	22	28.6	
			3.29	4.7	6.11	
			32.9	47	61.1	
			70	100	130	
Resistance Ratio	R ₂ /R ₁	-	0.8	1	1.2	
Transition frequency	f _T	V _O =10V, I _o =5mA, f=100MHz	-	250	-	MHz

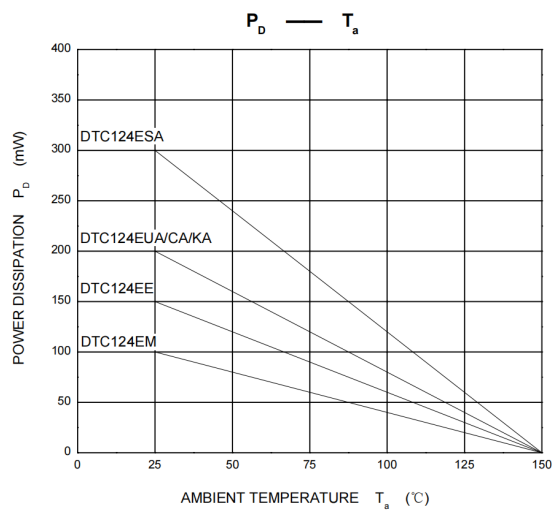
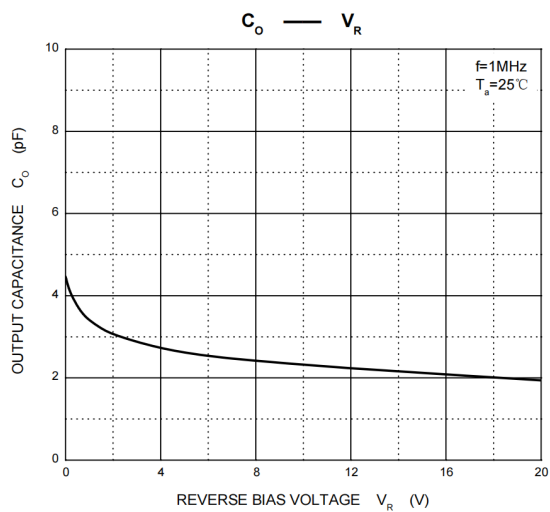
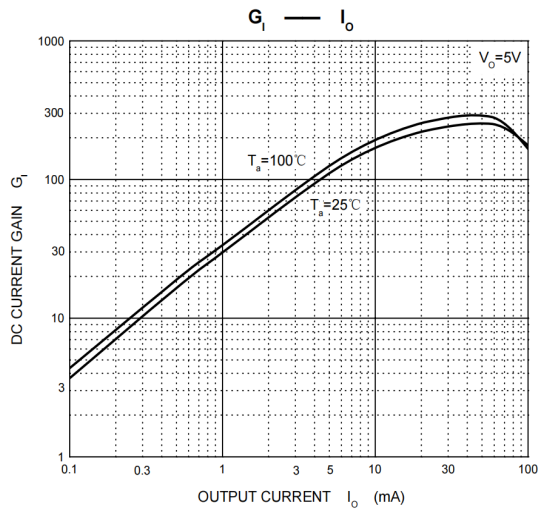
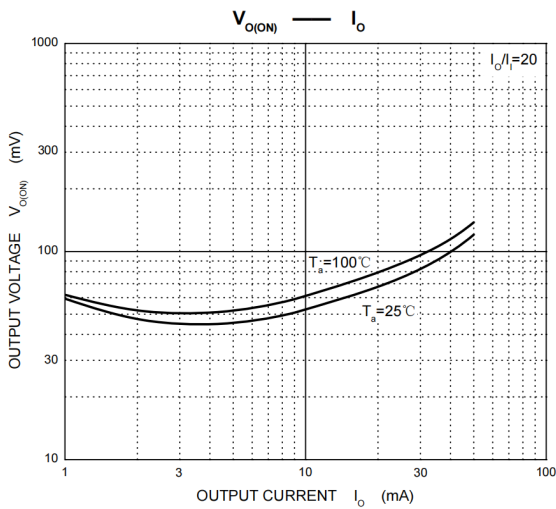
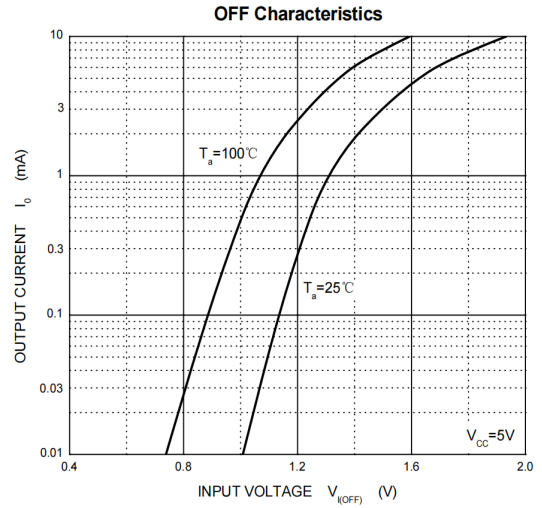
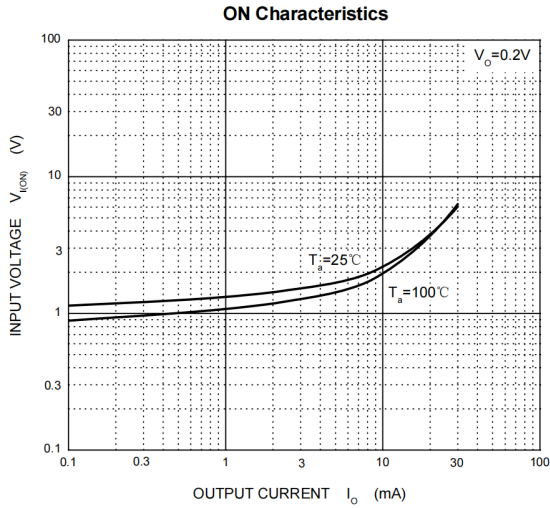
Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B



Digital Transistor

DTC(R₁=R₂ SERIES)UA

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



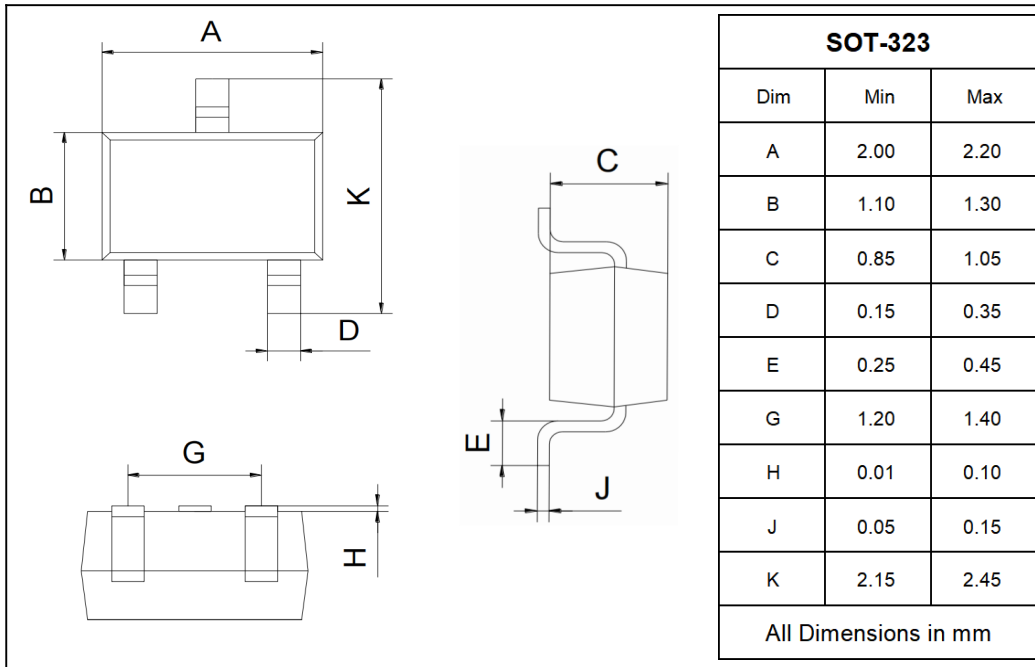
Digital Transistor

DTC(R₁=R₂ SERIES)UA

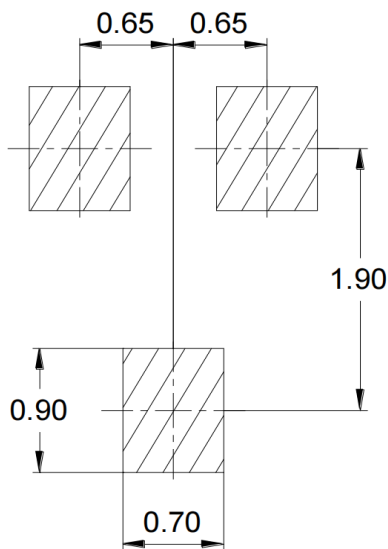
PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
DTCXXXEUA	SOT-323	3000 pcs / Tape & Reel