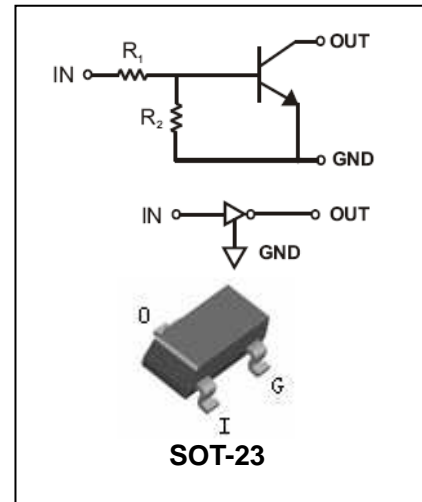


Digital Transistor

DTC(R₁=R₂ SERIES)CA

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
DTC114ECA	24	SOT-23
DTC124ECA	25	SOT-23
DTC143ECA	23	SOT-23
DTC144ECA	26	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units	
V _{CC}	Supply Voltage	50	V	
V _{IN}	Input Voltage	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	-10 to+40 -10 to+40 -10 to+30 -10 to+40	V
I _O	Output Current	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	50 30 100 100	mA
I _C (Max.)	Output current	ALL	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=R₂ SERIES)CA

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	1.1	-	V	
Input Voltage	V _{I(on)}	DTC114ECA V _O =0.3V, I _O =10mA	-	1.9	3		
Input Voltage		DTC124ECA V _O =0.2V, I _O =5mA					
Input Voltage		DTC143ECA V _O =0.3V, I _O =20mA					
Input Voltage		DTC144ECA V _O =0.3V, I _O =2mA					
Output Voltage	V _{O(on)}	I _O /I _I =10mA/0.5mA,	-	0.1	0.3	V	
Input Current	I _I	V _I =5V	-	-	0.88	mA	
Input Current					DTC124ECA		0.36
Input Current					DTC143ECA		1.8
Input Current					DTC144ECA		0.18
Output Current	I _{O(off)}	V _{CC} =50V, V _I =0V	-	-	0.5	μA	
DC Current Gain	G _I	DTC114ECA V _O =5V, I _O =5mA	30	-	-		
DC Current Gain		DTC124ECA V _O =5V, I _O =5mA	56				
DC Current Gain		DTC143ECA V _O =5V, I _O =10mA	20				
DC Current Gain		DTC144ECA V _O =5V, I _O =5mA	68				
Input Resistor	R ₁ (R ₂)		7	10	13	kΩ	
Input Resistor			DTC124ECA	15.4	22		28.6
Input Resistor			DTC143ECA	3.29	4.7		6.11
Input Resistor			DTC144ECA	32.9	47		61.1
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°C unless otherwise specified

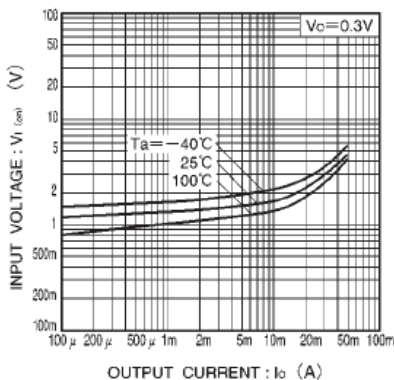


Fig.1 Input voltage vs. output current (ON characteristics)

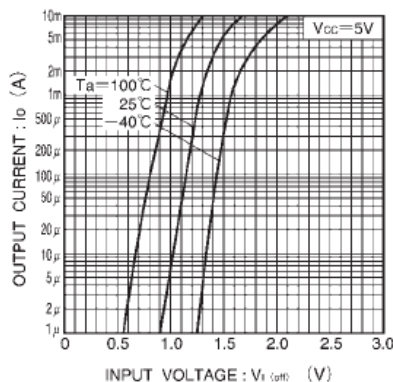


Fig.2 Output current vs. input voltage (OFF characteristics)

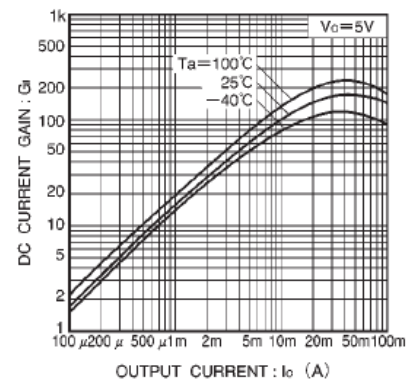


Fig.3 DC current gain vs. output current

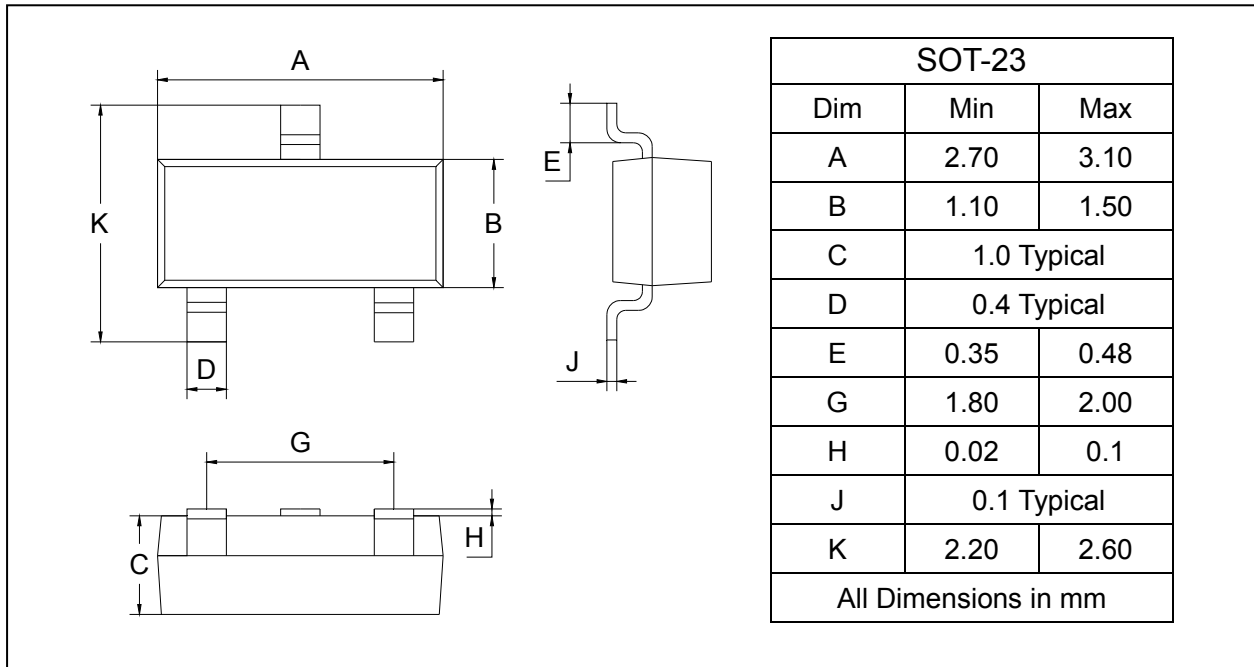
Digital Transistor

DTC(R₁=R₂ SERIES)CA

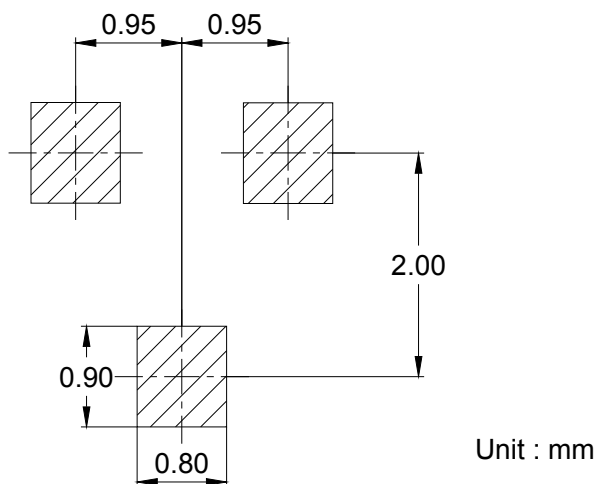
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
DTC114ECA/124ECA/143ECA/144ECA	SOT-23	3000/Tape&Reel