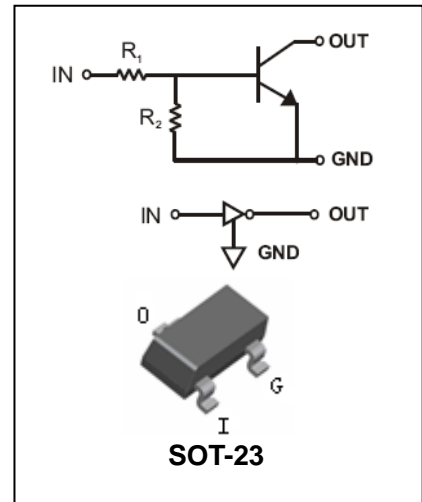


Digital Transistor

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

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(off)}$	$V_{CC}=5V, I_O=100\mu A$	0.5	1.1	-	V
Input Voltage	$V_{I(on)}$	$V_O=0.3V, I_O=10mA$	-	1.9	3	
DTC124ECA		$V_O=0.2V, I_O=5mA$				
DTC143ECA		$V_O=0.3V, I_O=20mA$				
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
DTC124ECA					0.36	
DTC143ECA					1.8	
DTC144ECA					0.18	
Output Current	$I_{O(off)}$	$V_{CC}=50V, V_I=0V$	-	-	0.5	μA
DC Current Gain	G_I	$V_O=5V, I_O=5mA$	30	-	-	
DTC124ECA			56			
DTC143ECA			20			
DTC144ECA			68			
Input Resistor	$R_1(R_2)$		7	10	13	k Ω
DTC124ECA			15.4	22	28.6	
DTC143ECA			3.29	4.7	6.11	
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

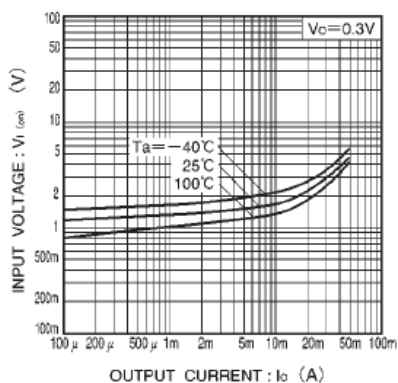


Fig.1 Input voltage vs. output current (ON characteristics)

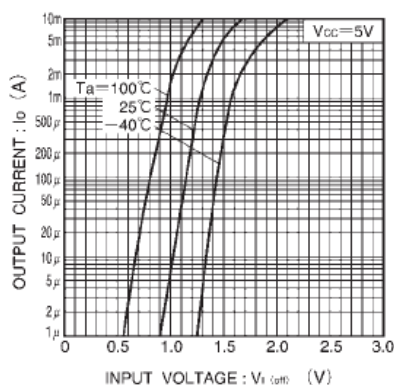


Fig.2 Output current vs. input voltage (OFF characteristics)

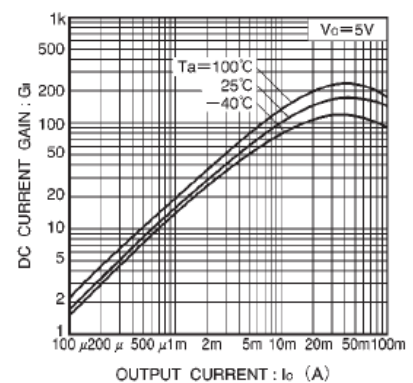
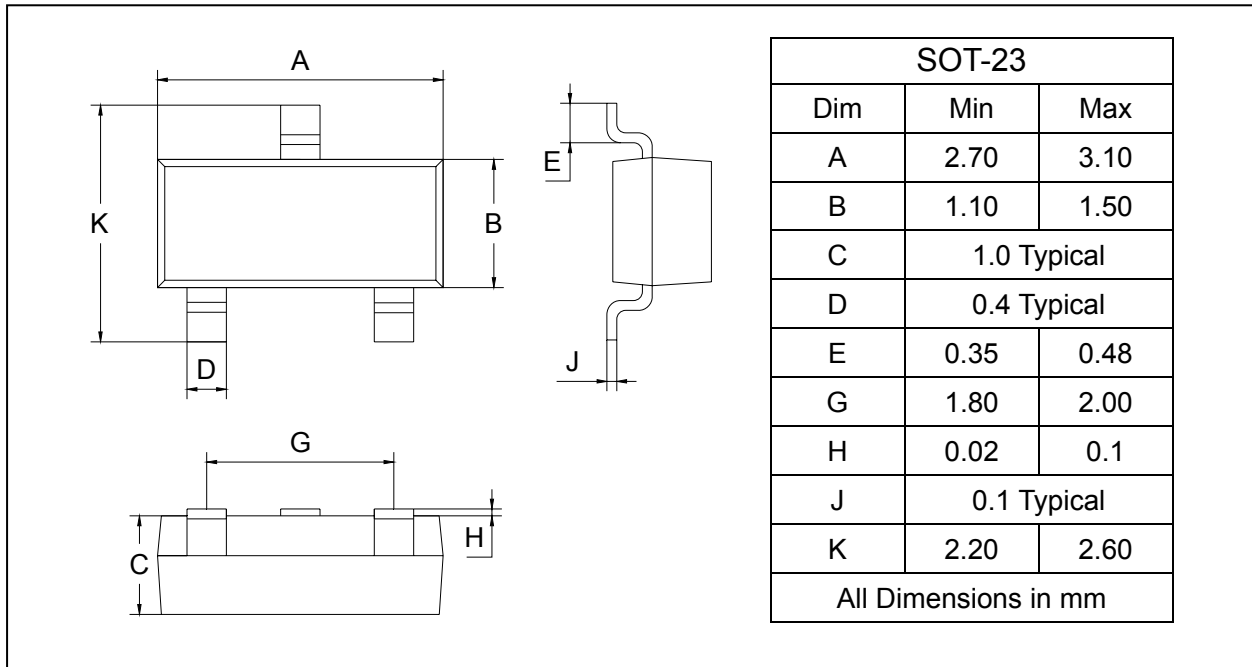


Fig.3 DC current gain vs. output current

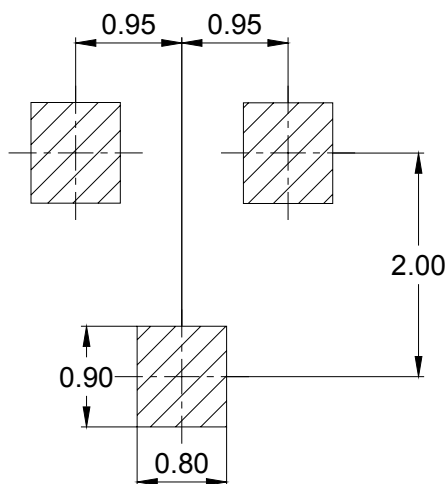
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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