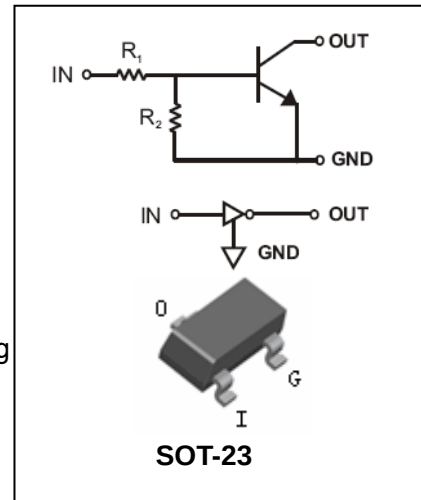


100mA/50V Digital Transistors

DTC143EUA

FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating Parasitic effects.
- Only the on/off conditions need to be set for operation, Making the device design easy.



APPLICATIONS

- Inverter, Interface, Driver.
- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC143EUA	23	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CC}	Supply Voltage	50	V
V _{IN}	Input Voltage	-10 to+30	V
I _O	Output Current	100	mA
I _C (Max.)	Output current	100	mA
P _D	Power Dissipation	200	mW
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55 to +150	°C



100mA/50V Digital Transistors

DTC143EUA

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	V
Input Voltage	$V_{I(on)}$	$V_O=0.3V, I_O=20mA$	3	-	-	
Output Voltage	$V_{O(on)}$	$I_O/I_I=10mA/0.5mA$	-	0.1	0.3	V
Input Current	I_I	$V_I=5V$	-	-	1.8	mA
Output Current	$I_{O(off)}$	$V_{CC}=50V, V_I=0V$	-	-	0.5	μA
DC Current Gain	G_I	$V_O=5V, I_O=10mA$	30	-	-	-
Input Resistor	$R_1(R_2)$	-	3.29	4.7	6.11	k Ω
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

100mA/50V Digital Transistors

DTC143EUA

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

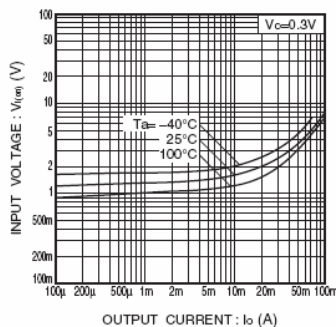


Fig.1 Input voltage vs. output current (ON characteristics)

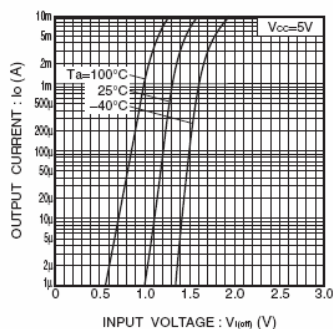


Fig.2 Output current vs. input voltage (OFF characteristics)

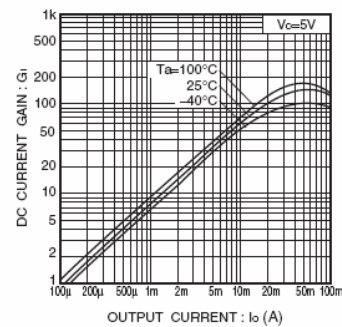


Fig.3 DC current gain vs. output current

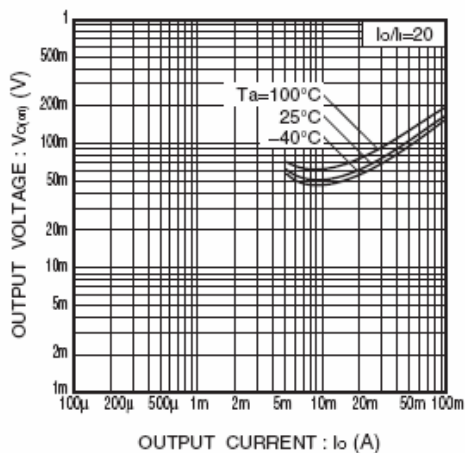


Fig.4 Output voltage vs. output current

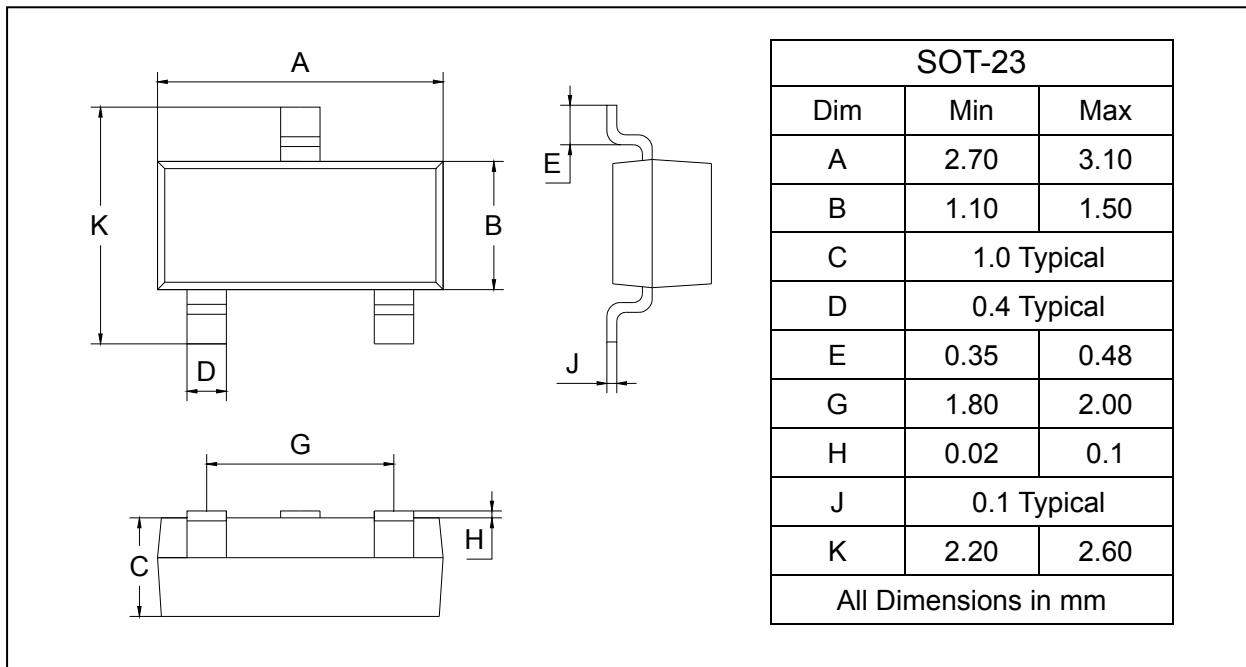
100mA/50V Digital Transistors

DTC143EUA

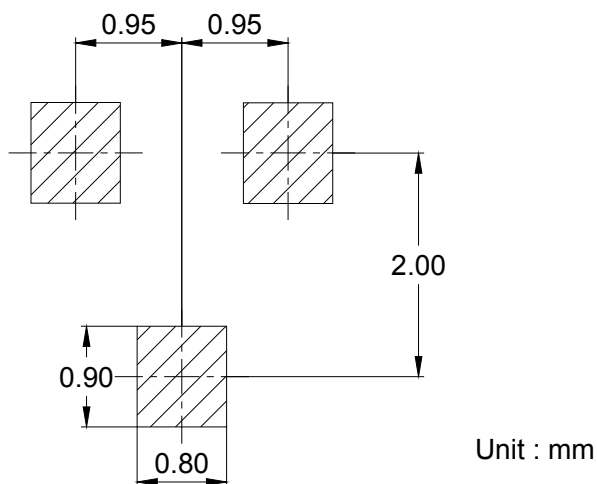
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
DTC143EUA	SOT-23	3000/Tape&Reel