

SOT-23 DIGITAL TRANSISTORS TRANSISTOR (NPN)

FEATURES

- * Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.(see equivalent circuit)
- * 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 device design easy.

MECHANICAL DATA

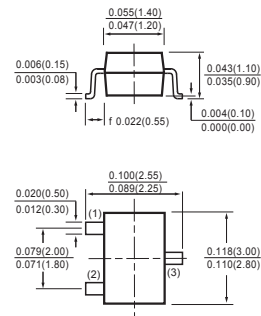
- * Case: Molded plastic
- * Epoxy: UL 94V-O rate flame retardant
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.008 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.



SOT-23



MAXIMUM RATINGS (@ TA = 25°C unless otherwise noted)

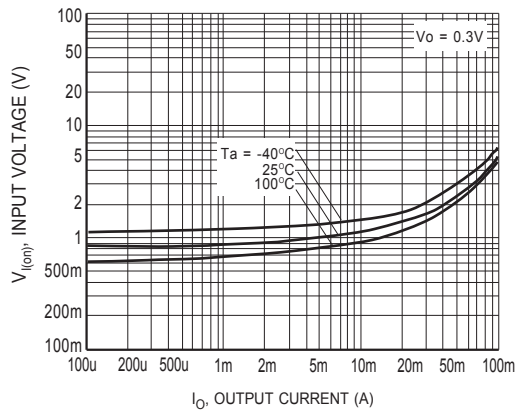
RATINGS	SYMBOL	VALUE	UNITS
Supply Voltage	V _{CC}	50	V
Input Voltage	V _{IN}	-7~+20	V
Output Current	I _O	100	mA
	I _{C(MAX)}	100	
Power dissipation	P _d	200	mW
Junction temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (@ TA = 25°C unless otherwise noted)

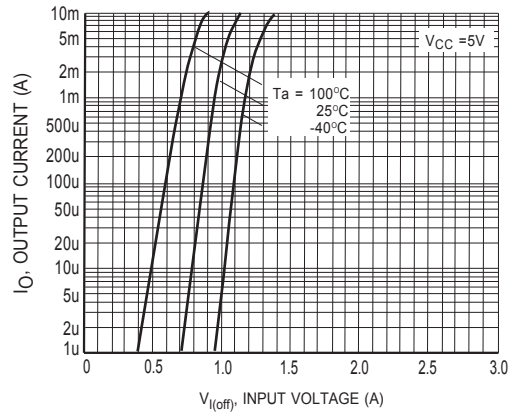
CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Input voltage (V _{CC} = 5V, I _O =100uA)	V _{I(off)}	-	-	0.3	V
	V _{I(on)}	2.5	-	-	V
Output voltage (I _O /I _I =10mA/0.5mA)	V _{O(on)}	-	0.1	0.3	V
Input current (V _I = 5V)	I _I	-	-	1.8	mA
Output current (V _{CC} = 50V, V _I =0)	I _{O(off)}	-	-	0.5	mA
DC current gain (V _O = 5V, I _O = 10mA)	G _I	30	-	-	
Resistance ratio	R ₂ /R ₁	1.7	2.1	2.6	
Transistion frequency (V _O = 10V, I _O = 5mA, f=100MHz)	f _T	-	250	-	MHz
Input resistance	R ₁	3.29	4.7	6.11	KΩ

NOTE: "Fully ROHS compliant", "100% Sn plating (Pb-free)".

RATING AND CHARACTERISTICS CURVES (DTC143XCA)



**Figure1 Input voltage vs. output current
(ON characteristics)**



**Figure2 Output current vs. input voltage
(OFF characteristics)**

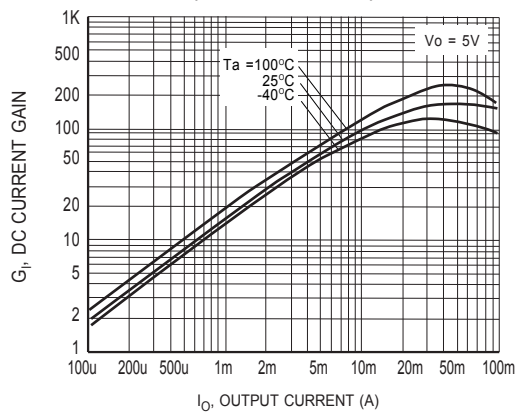


Figure3 DC current gain vs. output current

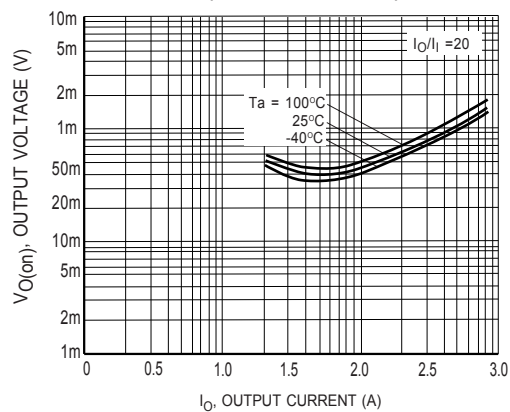


Figure4 Output voltage vs. output current

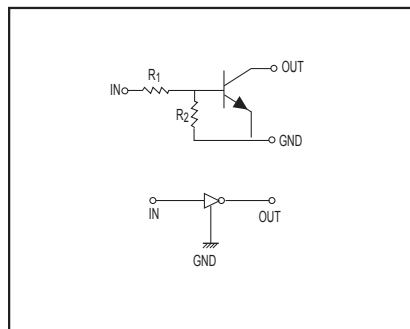


Figure5 Equivalent circuit

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