RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

DTC143ZKA

SOT-23-3L DIGITAL TRANSISTORS
TRANSISTOR (NPN)

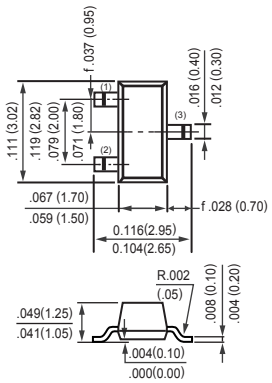
FEATURES

* 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 marking 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: 0.009 gram

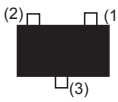
SOT-23-3L



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.



(1) IN
(2) GND
(3) OUT

MAXIMUM RATINGES (@ T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Collector-base Voltage	$V_{(BR)CBO}$	50	V
Collector-emitter Voltage	$V_{(BR)CEO}$	50	V
Emitter-base Voltage	$V_{(BR)EBO}$	5	V
Collector Current	I_C	100	mA
Collector Power dissipation	P_C	200	mW
Junction temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 to +150	°C

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

CHARACTERISTICS		SYMBOL	MIN.	TYP.	MAX.	UNITS
Input voltage	(V_{CC}= 5V,I_O=100mA)	$V_{I(off)}$	0.5	-	-	V
	(V_O= 0.3V,I_O=5mA)	$V_{I(on)}$	-	-	1.3	V
Output voltage (I_O/I_I=5mA/0.25mA)		$V_{O(on)}$	-	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	uA
DC current gain (V_O= 5V,I_O= 10mA)		G_I	80	-	-	
Resistance ratio		R_2/R_1	8	10	12	
Transition 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 (DTC143ZKA)

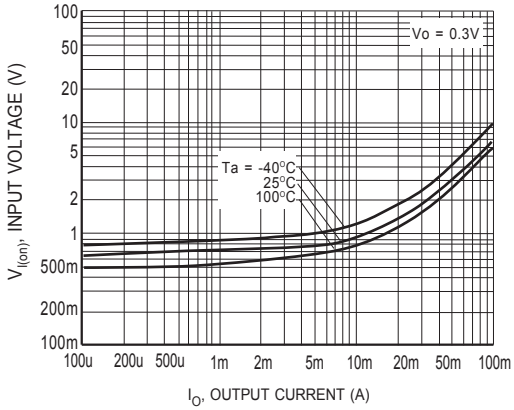


Figure1 Input voltage vs. output current (ON characteristics)

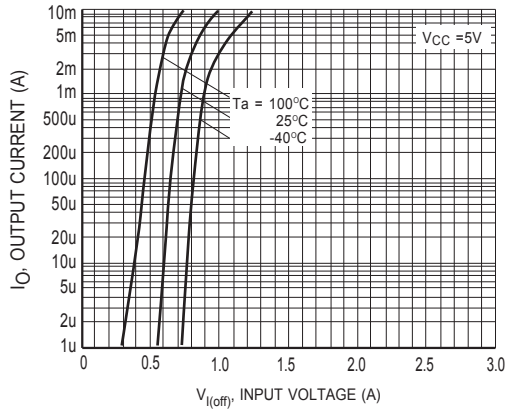


Figure2 Output current vs. input voltage (OFF characteristics)

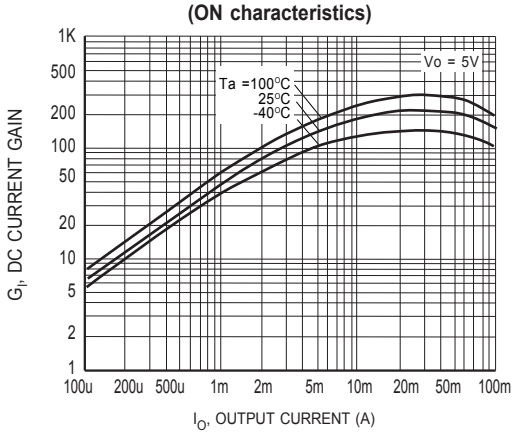


Figure3 DC current gain vs. output current

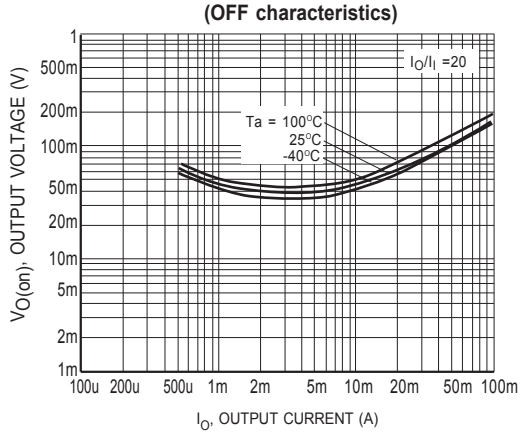


Figure4 Output voltage vs. output current

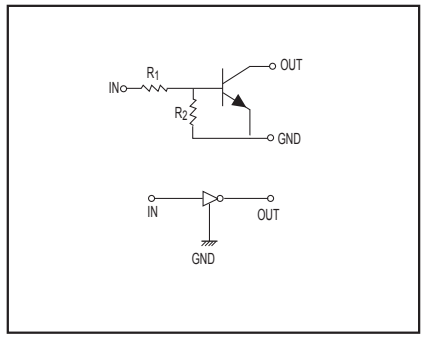


Figure5 Equivalent circuit

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