RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

DTC143TUA

SOT-323 DIGITAL TRANSISTOR TRANSISTORS(NPN)

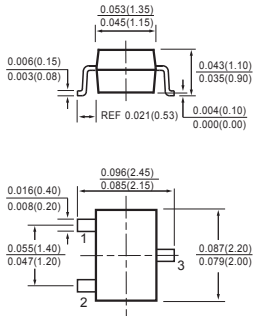
FEATURES

* 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 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: 0.006 gram

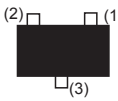
SOT-323



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.



(1) Base
(2) Emitter
(3) Collector

MAXIMUM RATINGES (@ TA = 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	Tj	150	°C
Storage temperature	T_{stg}	-55~150	°C

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

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector-base breakdown voltage (I_C= 50μA)	$V_{(BR)CBO}$	50	-	-	V
Collector-emitter breakdown voltage (I_C= 1mA)	$V_{(BR)CEO}$	50	-	-	V
Emitter-base breakdown voltage (I_E= 50μA)	$V_{(BR)EBO}$	5	-	-	V
Collector cut-off current (V_{CB}= 50V)	I_{CBO}	-	-	0.5	μA
Emitter cut-off current (V_{EB}= 4V)	I_{EBO}	-	-	0.5	μA
Collector-emitter saturation voltage (I_C= 5mA,I_B= 0.25mA)	h_{FE}	-	-	0.3	V
DC current gain (V_{CE}= 5V,I_C= 1mA)	$V_{CE(sat)}$	100	-	600	-
Input resistor	R_1	3.29	4.7	6.11	KΩ
Transition frequency (V_O= 10V, I_O= 5mA, f=100MHz)	f_T	-	250	-	MHz

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

RATING AND CHARACTERISTICS CURVES (DTC143TUA)

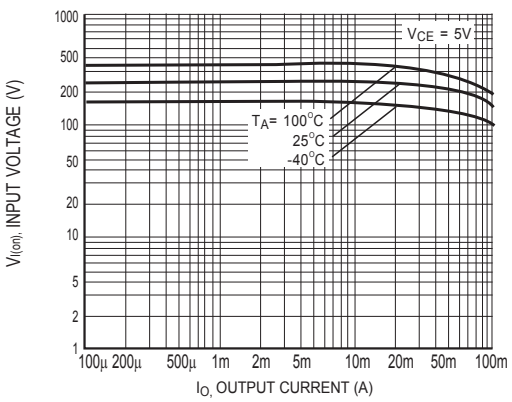


Figure1 Input voltage vs. output current (ON Characteristics)

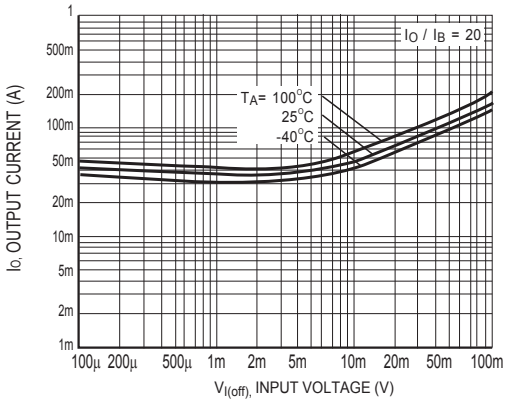


Figure2 Output current vs. input voltage (OFF Characteristics)

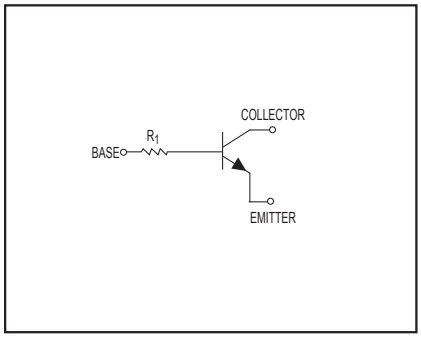


Figure3 Equivalent circuit

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