

DTC144EUA-TP Datasheet

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DiGi Electronics Part Number	DTC144EUA-TP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	DTC144EUA-TP
Description	TRANS PREBIAS NPN 50V SOT323
Detailed Description	Pre-Biased Bipolar Transistor (BJT) NPN - Pre-Biased 50 V 100 mA 250 MHz 200 mW Surface Mount SOT-323



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Purchase and inquiry

Manufacturer Product Number:

DTC144EUA-TP

Series:

-

Transistor Type:

NPN - Pre-Biased

Voltage - Collector Emitter Breakdown (Max):

50 V

Resistor - Emitter Base (R2):

47 kOhms

Vce Saturation (Max) @ Ib, Ic:

300mV @ 500µA, 10mA

Frequency - Transition:

250 MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-323

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

100 mA

Resistor - Base (R1):

47 kOhms

DC Current Gain (hFE) (Min) @ Ic, Vce:

68 @ 5mA, 5V

Current - Collector Cutoff (Max):

500nA

Power - Max:

200 mW

Package / Case:

SC-70, SOT-323

Base Product Number:

DTC144

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

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 Device Design Easy
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

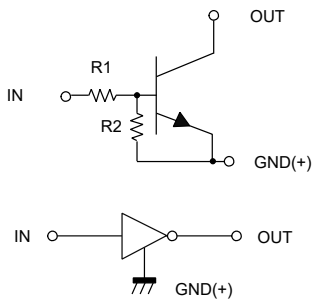
Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	---	50	---	V
Input Voltage	V_{IN}	-10	---	40	V
Collector Current	I_C	---	100	---	mA
Power Dissipation	P_D	---	200	---	mW
Junction Temperature	T_J	---	---	150	°C
Storage Temperature	T_{stg}	-55	---	150	°C

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

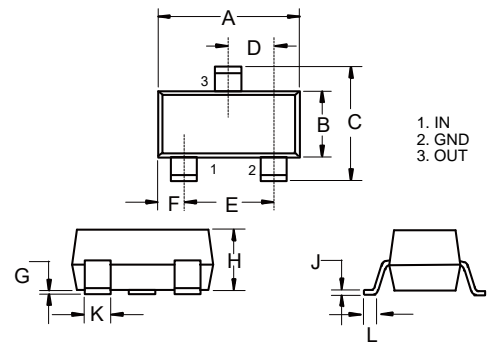
Device Marking: 26

Internal Structure



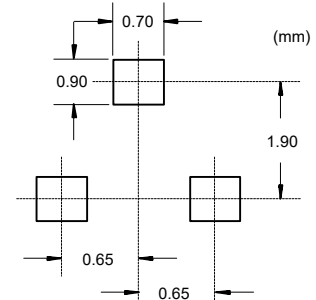
NPN Digital Transistor

SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.5	---	---	V	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$	---	---	3.0	V	$V_O=0.3V, I_O=2mA$
Output Voltage	$V_{O(on)}$	---	---	0.3	V	$I_O=10mA, I_I=0.5mA$
Input Current	I_I	---	---	0.18	mA	$V_I=5V$
Output Current	$I_{O(off)}$	---	---	0.5	μA	$V_{CC}=50V, V_I=0$
DC Current Gain	G_I	68	---	---		$V_O=5V, I_O=5mA$
Input Resistance	R_1	32.9	47	61.1	K Ω	
Resistance Ratio	R_2/R_1	0.8	1.0	1.2		
Transition Frequency	f_T	---	250	---	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$

Curve Characteristics

Fig. 1 - DC Current Gain Characteristics

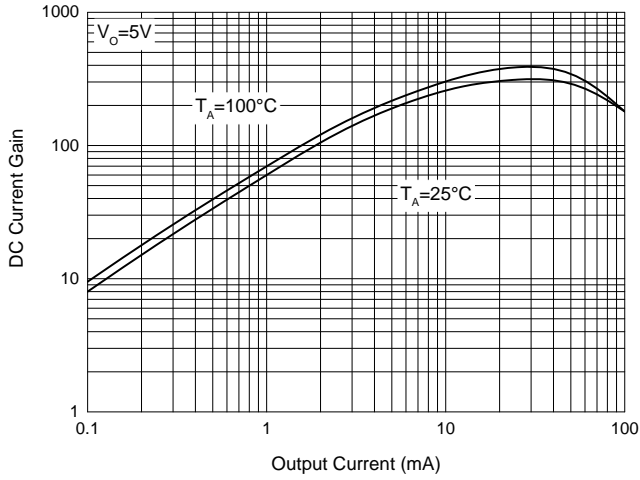


Fig. 2 - Input Voltage (on) Characteristics

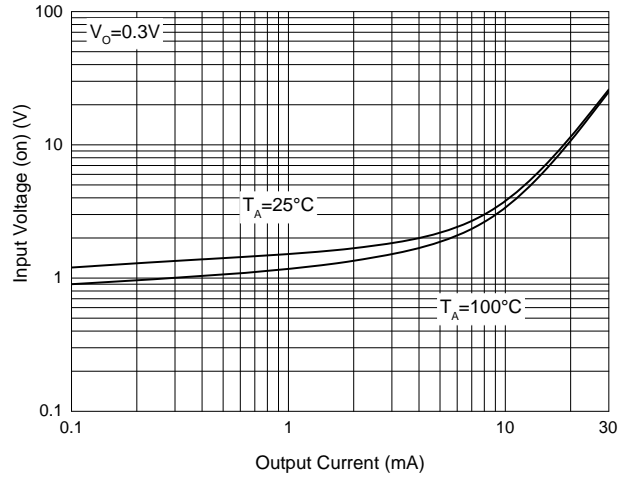


Fig. 3 - Input Voltage (off) Characteristics

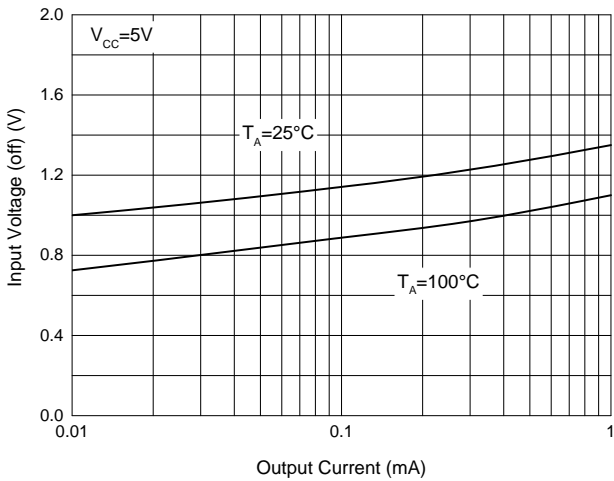


Fig. 4 - Output Voltage Characteristics

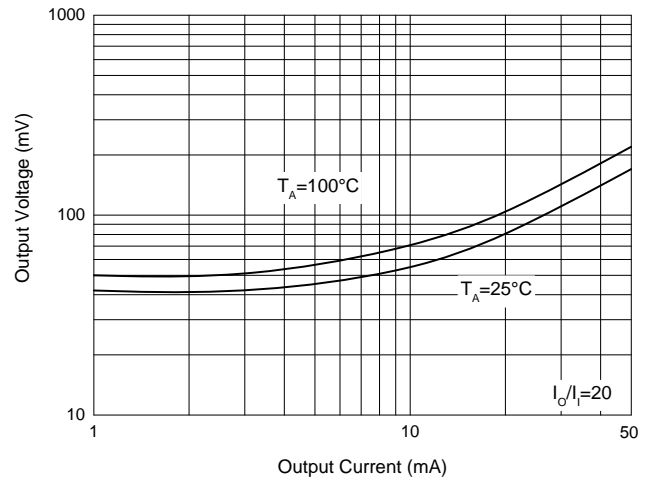
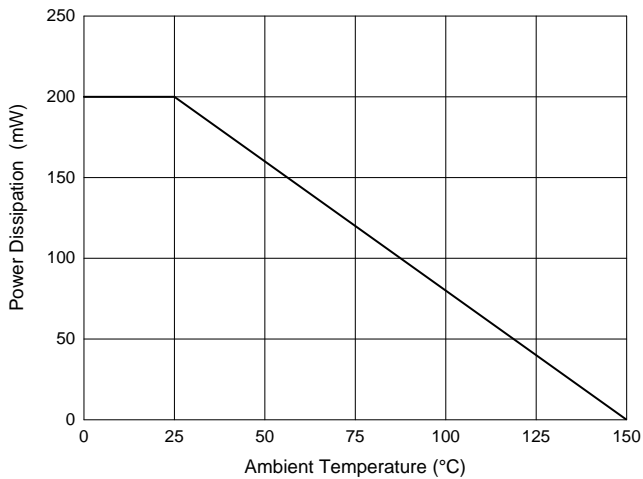


Fig. 5 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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