

# DTC123JM-TP Datasheet

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DiGi Electronics Part Number	DTC123JM-TP-DG
Manufacturer	<a href="#">Micro Commercial Co</a>
Manufacturer Product Number	DTC123JM-TP
Description	TRANS PREBIAS NPN 50V SOT723
Detailed Description	Pre-Biased Bipolar Transistor (BJT) NPN - Pre-Biased 50 V 100 mA 250 MHz 100 mW Surface Mount SOT-723

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## Purchase and inquiry

Manufacturer Product Number:

DTC123JM-TP

Series:

-

Transistor Type:

NPN - Pre-Biased

Voltage - Collector Emitter Breakdown (Max):

50 V

Vce Saturation (Max) @ Ib, Ic:

300mV @ 250µA, 5mA

Frequency - Transition:

250 MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-723

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

100 mA

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

80 @ 10mA, 5V

Current - Collector Cutoff (Max):

500nA

Power - Max:

100 mW

Package / Case:

SOT-723

Base Product Number:

DTC123

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

## Features

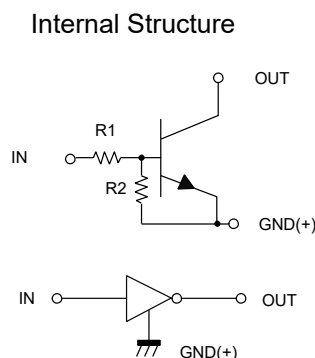
- Built-In Bias Resistors Enable the Configuration of an Inverter Circuit Without Connecting External Input Resistors
- The Bias Resistors Consist of Thin-Film Resistors With Complete Isolation to Allow Negative Biasing of the Input. They Also Have the Advantage of Almost Completely Eliminating Parasitic 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	$V_{IN}$	-5	---	12	V
Output Current	$I_o$	---	100	---	mA
Power Dissipation	$P_D$	---	100	---	mW
Junction Temperature	$T_J$	---	---	150	°C
Storage Temperature	$T_{stg}$	-55	---	150	°C

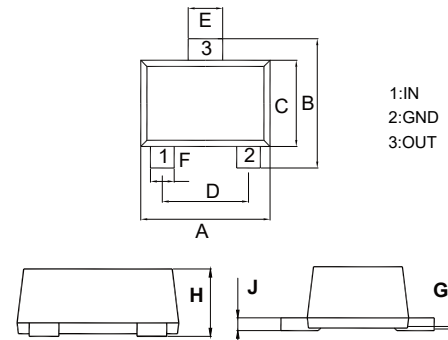
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Device Marking: E42



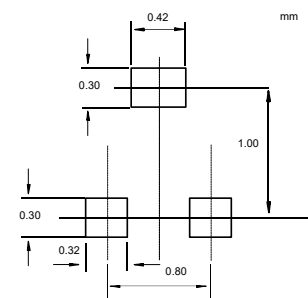
## NPN Digital Transistor

### SOT-723



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.043	0.051	1.10	1.30	
B	0.043	0.051	1.10	1.30	
C	0.028	0.035	0.70	0.90	
D	0.031		0.80		TYP.
E	0.009	0.017	0.22	0.42	
F	0.005	0.013	0.12	0.32	
G	0.000	0.002	0.00	0.05	
H	0.017	0.021	0.43	0.54	
J	0.003	0.006	0.08	0.15	

### 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	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$	---	---	1.1	V	$V_O=0.3V, I_O=5mA$
Output Voltage	$V_{O(on)}$	---	0.1	0.3	V	$I_O=5mA, I_I=0.25mA$
Input Current	$I_I$	---	---	3.6	mA	$V_I=5V$
Output Current	$I_{O(off)}$	---	---	0.5	$\mu A$	$V_{CC}=50V, V_I=0$
DC Current Gain	$G_I$	80	---	---		$V_O=5V, I_O=10mA$
Input Resistance	$R_1$	1.54	2.2	2.86	K $\Omega$	
Resistance Ratio	$R_2/R_1$	17	21	26		
Transition Frequency	$f_T$	---	250	---	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$

### Curve Characteristics

Fig. 1 - DC Current Gain Characteristics

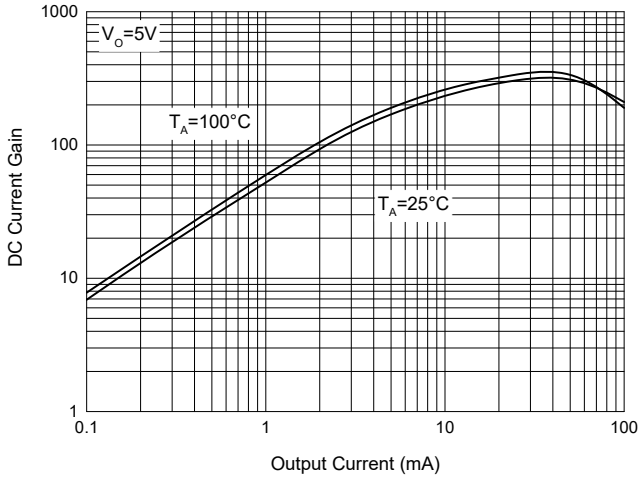


Fig. 2 - Input Voltage (on) Characteristics

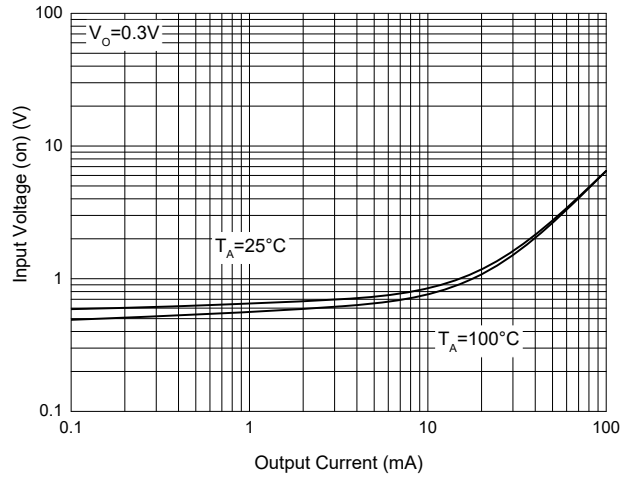


Fig. 3 - Input Voltage (off) Characteristics

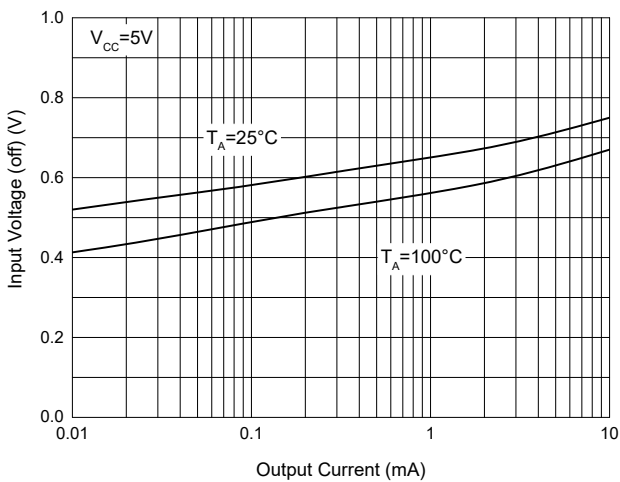


Fig. 4 - Output Voltage Characteristics

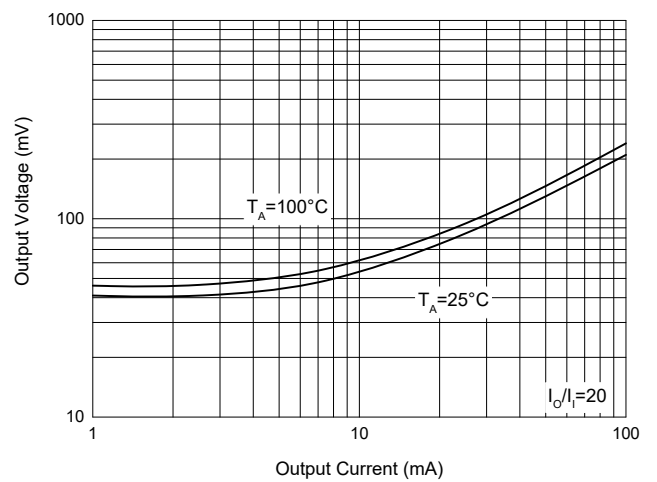
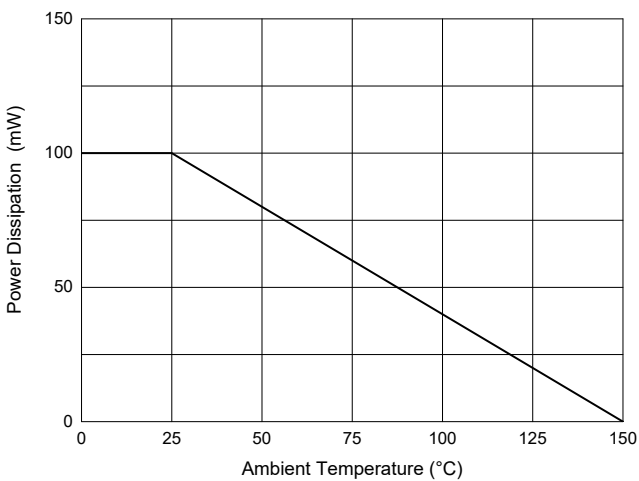


Fig. 5 - Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:8Kpcs/Reel

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