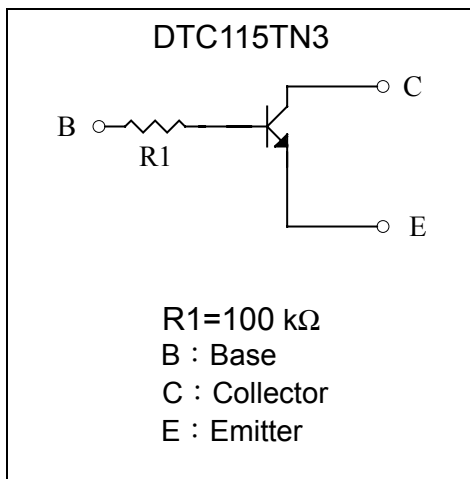
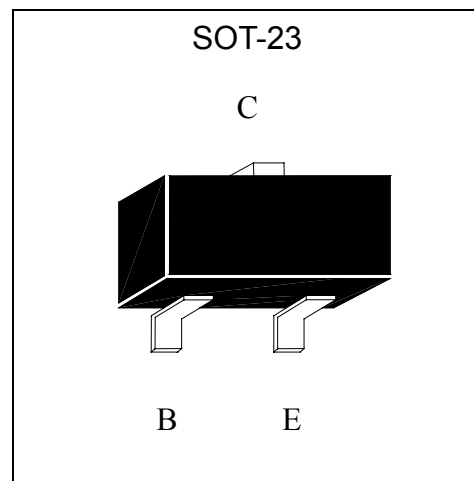


**NPN Digital Transistors (Built-in Resistors)**

# DTC115TN3

**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.
- Complements the DTA115TN3
- Pb-free package

**Equivalent Circuit**

**Outline**

**Absolute Maximum Ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	100	mA
Power Dissipation	P <sub>d</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C



**Electrical Characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	V <sub>CB0</sub>	50	-	-	V	I <sub>C</sub> =50μA
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	50	-	-	V	I <sub>C</sub> =1mA
Emitter-Base Breakdown Voltage	V <sub>EB0</sub>	5	-	-	V	I <sub>E</sub> =50μA
Collector-Base Cutoff Current	I <sub>CB0</sub>	-	-	0.5	μA	V <sub>CB</sub> =50V
Emitter-Base Cutoff Current	I <sub>EB0</sub>	-	-	0.5	μA	V <sub>EB</sub> =4V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	-	-	0.3	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0.1mA
DC Current Gain	h <sub>FE</sub>	100	-	600	-	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA
Input Resistance	R	70	100	130	kΩ	-
Transition Frequency	f <sub>T</sub>	-	250	-	MHz	V <sub>CE</sub> =10V, I <sub>C</sub> =5mA, f=100MHz *

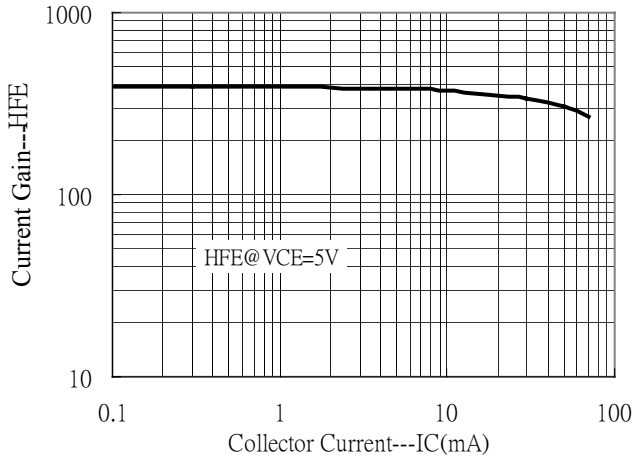
\* Transition frequency of the device

**Ordering Information**

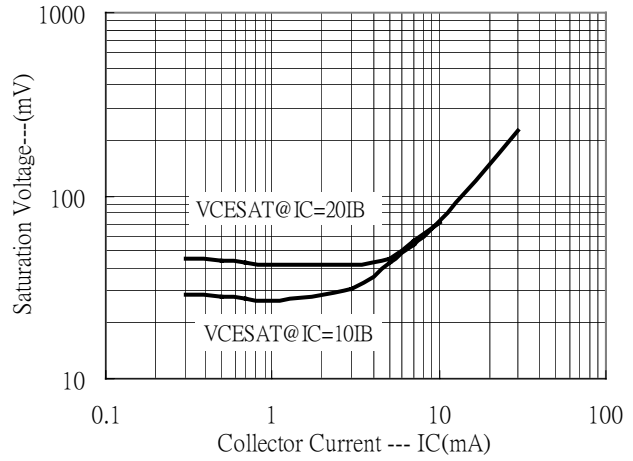
Device	Package	Shipping	Marking
DTC115TN3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	8U

**Characteristic Curves**

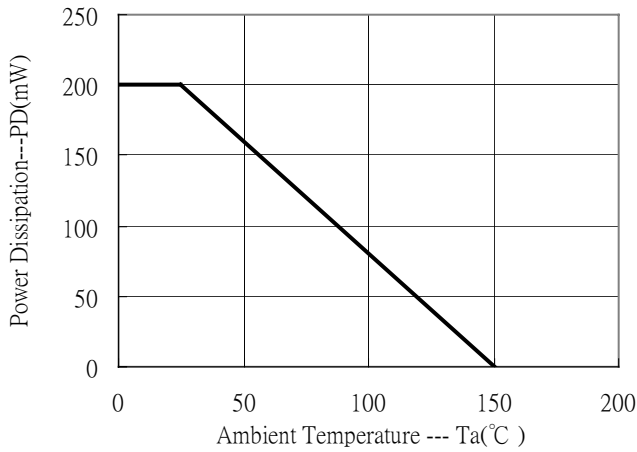
Current Gain vs Collector Current



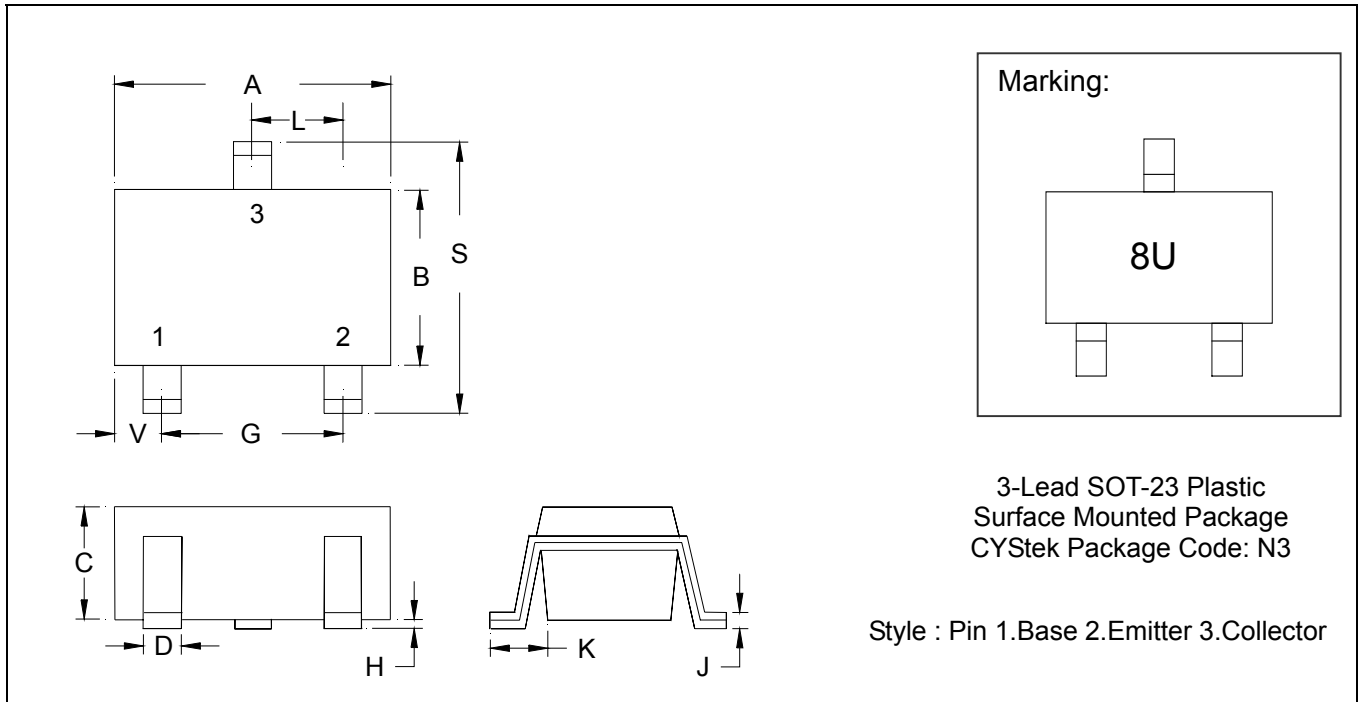
Saturation Voltage vs Collector Current



Power Derating Curve



**SOT-23 Dimension**



\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

- Notes : 1.Controlling dimension : millimeters.  
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material :**

- Lead : 42 Alloy ; solder plating
- Mold Compound : Epoxy resin family, flammability solid burning class:UL94V-0

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