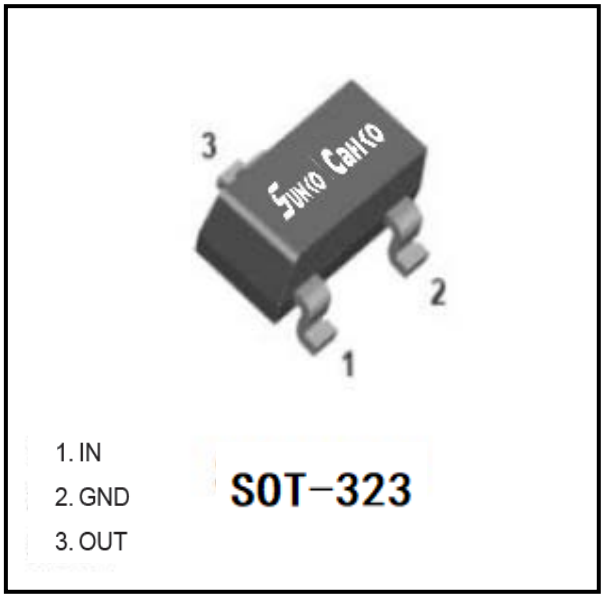
Digital Transistors (Built-in Resistors)



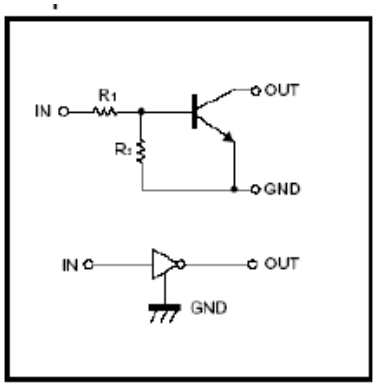
Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors
- Surface mount package ideally Suited for Automatic Insertion
- NPN

Mechanical Data

- **Package**: SOT-323
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:** 64

■Equivalent circuit



■Maximum Ratings (Ta=25℃ Unless otherwise specified）

Item	Symbol	Unit	Conditions	Value
Supply Voltage	V_{CC}	V		50
Input Voltage	V_{IN}	V		-6 to +40
Output Current	I_O	mA		100
Power Dissipation	P_D	mW		200
Junction Temperature	Tj	℃		150
Storage Temperature	T_{STG}	℃		-55 to +150

■Electrical Characteristics (Ta=25℃ unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	$V_{I(off)}$	V	V_{CC}=5V,I_C=100uA	0.3		
	$V_{I(on)}$	V	V_O=0.3V,I_C=1mA			1.4
Output voltage	$V_{O(on)}$	V	I_O /I_I =5mA/0.25 mA			0.3
Input current	I_I	mA	V_I=5V			0.88
Output current	$I_{O(off)}$	uA	V_{CC}=50V, V_I=0			0.5
DC current gain	G_I		V_O=5V, I_O =5mA	68		
Input resistance	R_1	kΩ		7	10	13
Resistance ratio	R_2/R_1			3.7	4.7	5.7
Transition frequency	fT	MHz	V_O=10V,I_O=5mA,f=100MHz		250	

■ Ordering Information (Example)

Prefered P/N	Packing Code	Unit Weight(G)	Minimum Package(Pcs)	Inner Box Quantity(Pcs)	Outer Carton Quantity(Pcs)	Delivery Mode
DTC114YUA	F2	Approximate 0.005	3000	30000	120000	7” reel

■ **Characteristics** (Typical)

Fig. 1 - DC Current Gain Characteristics

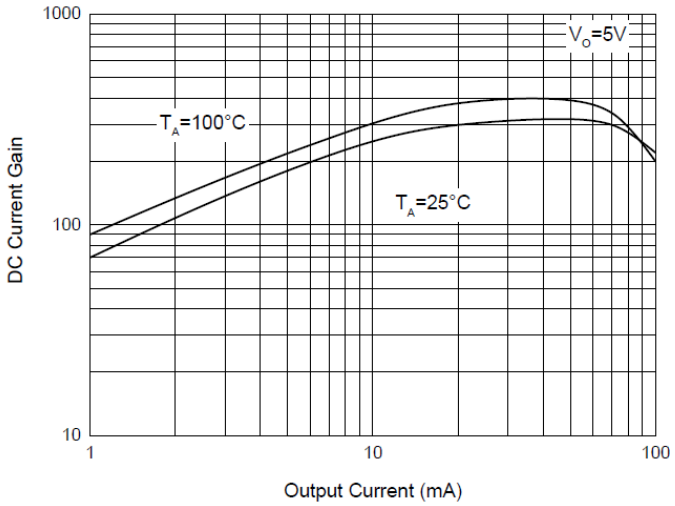


Fig. 2 - Input Voltage (on) Characteristics

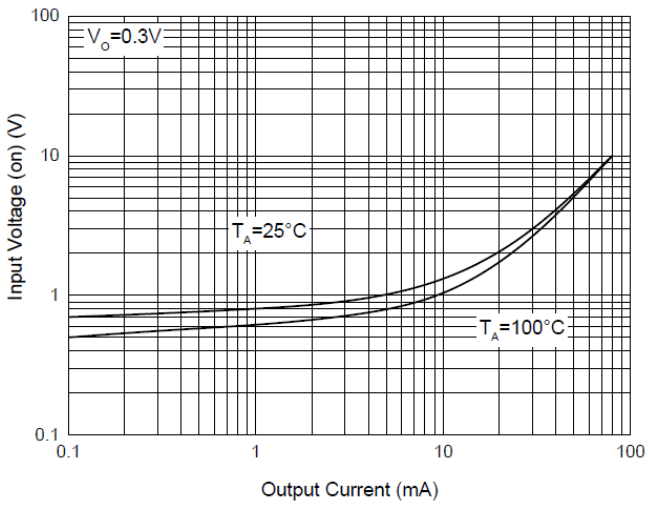


Fig. 3 - Input Voltage (off) Characteristics

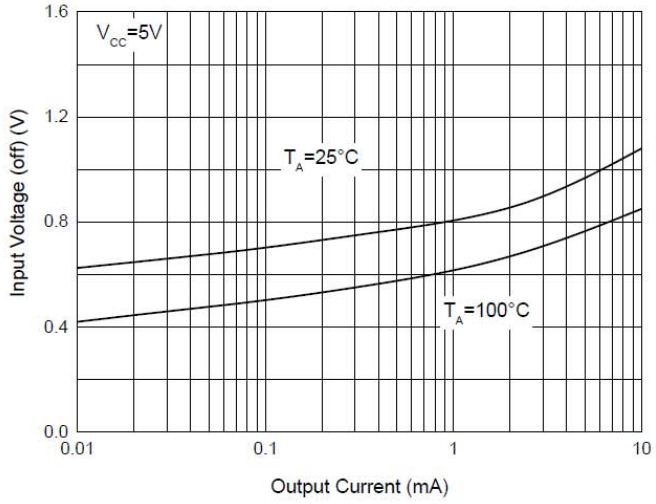


Fig. 4 - Output Voltage Characteristics

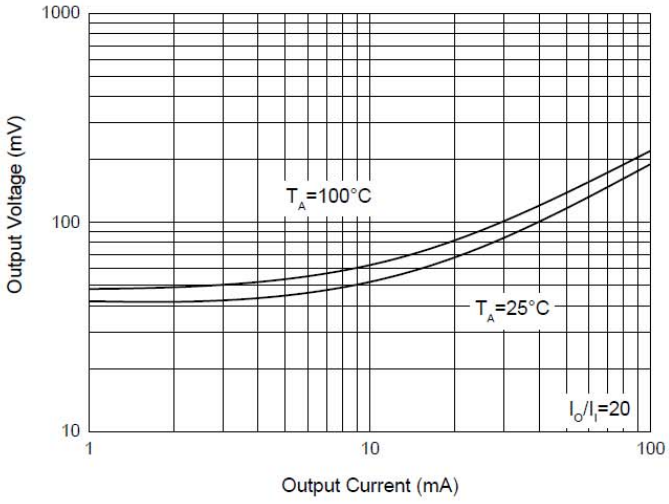
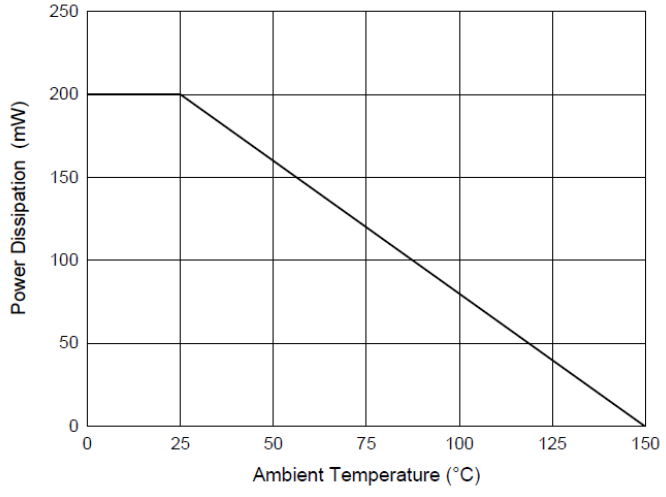
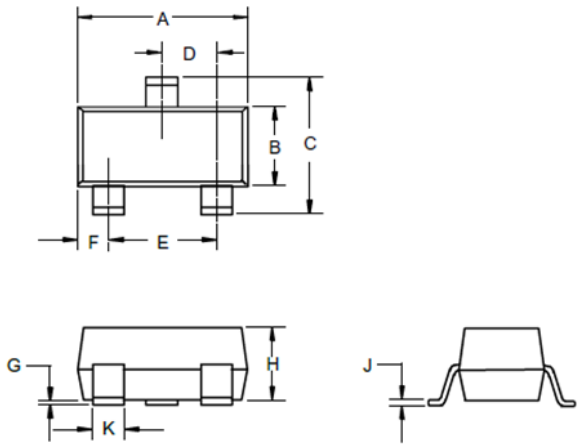


Fig. 5 - Power Derating Curve

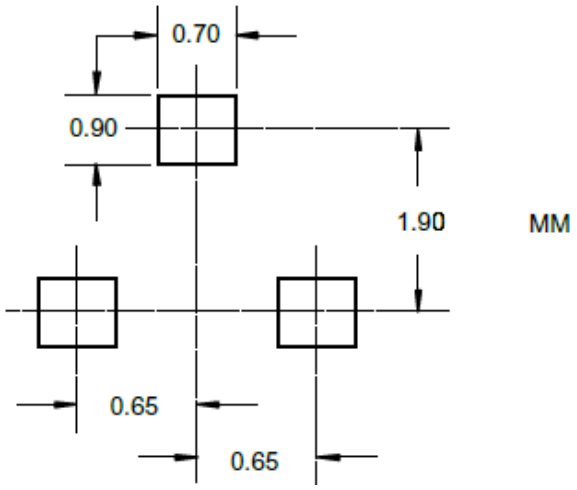


■ SOT-323 Package Outline Dimensions



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	0.026Nominal		0.65Nominal		
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	0.039	0.90	1.00	
J	0.004	0.010	0.10	0.250	
K	0.006	0.016	0.15	0.40	

■ SOT-323 Soldering Footprint



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