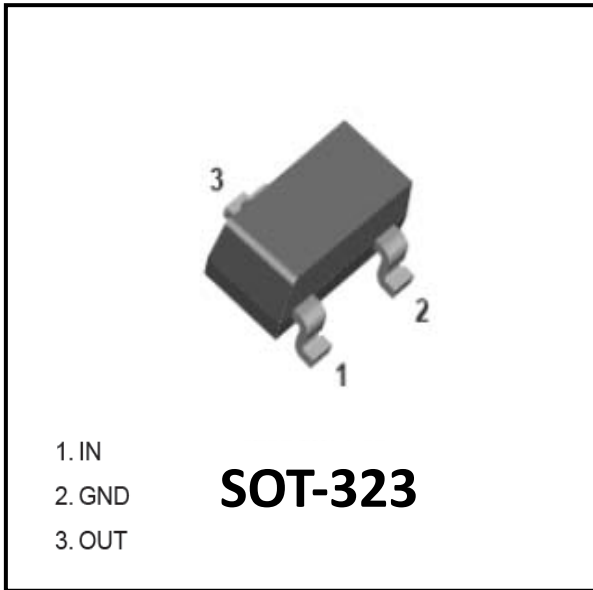


Digital Transistors (Built-in Resistors)



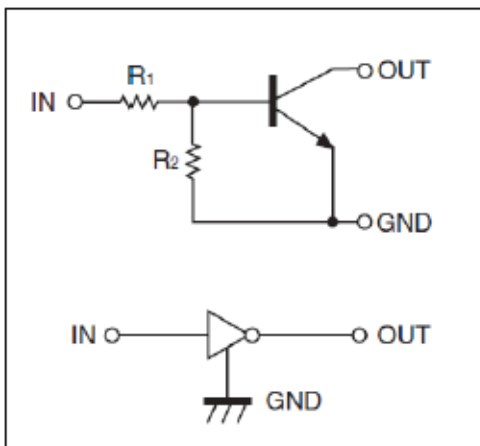
Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture 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
- **Marking:** E42

■Equivalent circuit



■Maximum Ratings (Ta=25°C Unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Supply Voltage	V_{CC}	V		50
Input Voltage	V_{IN}	V		-5 to +12
Collector Current	I_C	mA		100
Power Dissipation	P_D	mW		200
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		625
Junction Temperature	T_J	°C		150
Storage Temperature	T_{stg}	°C		-55 to +150



DTC123JUA

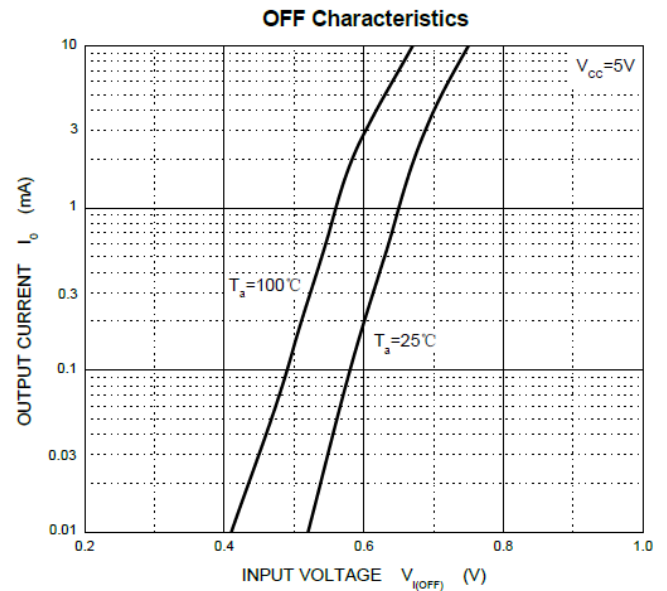
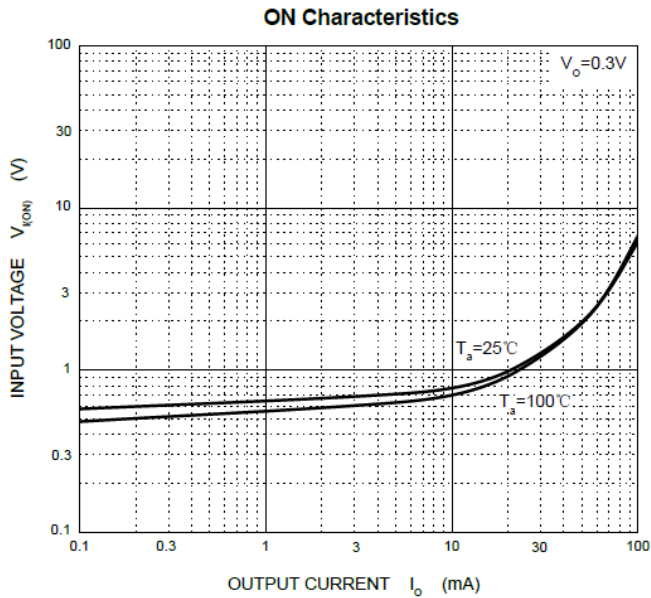
■ Electrical Characteristics (Ta=25°C unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Input voltage	$V_{I(off)}$	V	VCC=5V, I _o =100uA	0.5		
	$V_{I(on)}$	V	V _o =0.3V, I _o =5mA			1.1
Output voltage	$V_{O(on)}$	V	I _o / I _i = 5mA / 0.25 mA			0.3
Input current	I _i	mA	V _i =5V			3.6
Output current	I _{O(off)}	uA	VCC=50V, V _i =0			0.5
DC current gain	G _i		V _o =5V, I _o = 10mA	80		
Input resistance	R ₁	kΩ		1.54	2.2	2.86
Resistance ratio	R ₂ /R ₁			17	21	26
Transition frequency	f _T	MHz	V _o =10V, I _o =5mA, f=100MHz		250	

■ Ordering Information (Example)

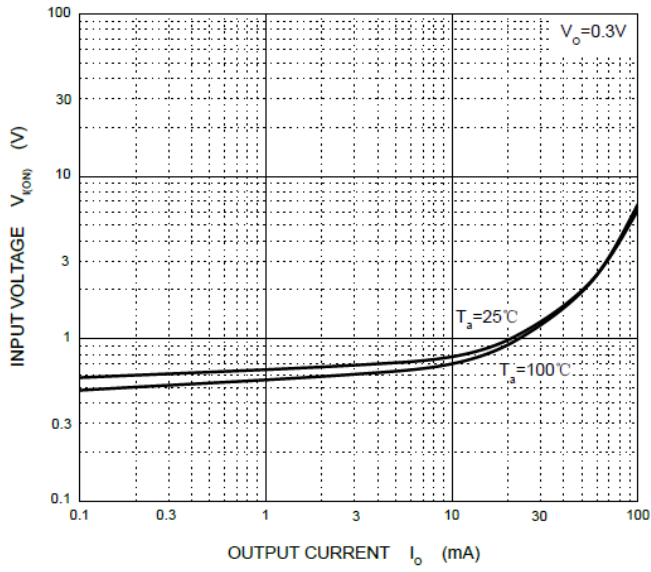
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
DTC123JUA	F2	Approximate 0.005	3000	30000	120000	7" reel

■ Characteristics (Typical)

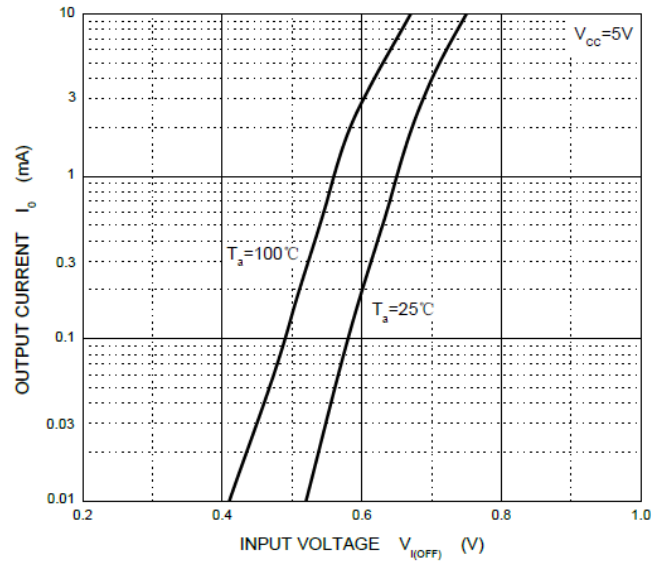




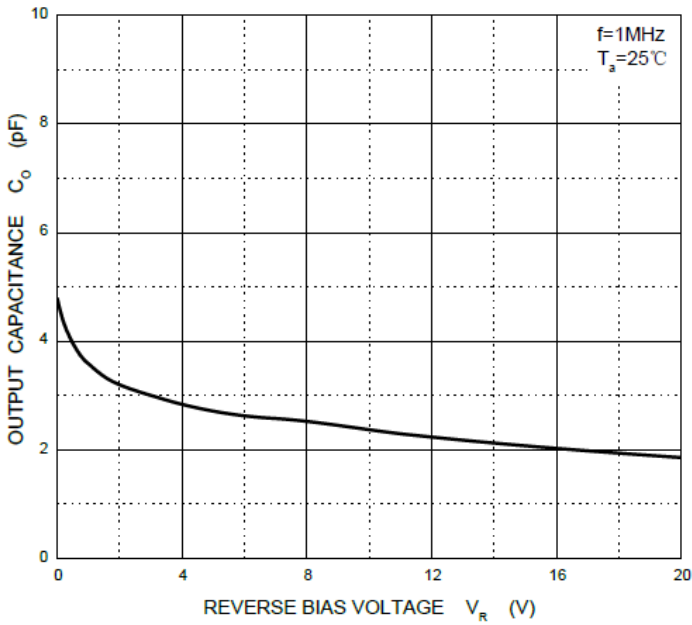
ON Characteristics



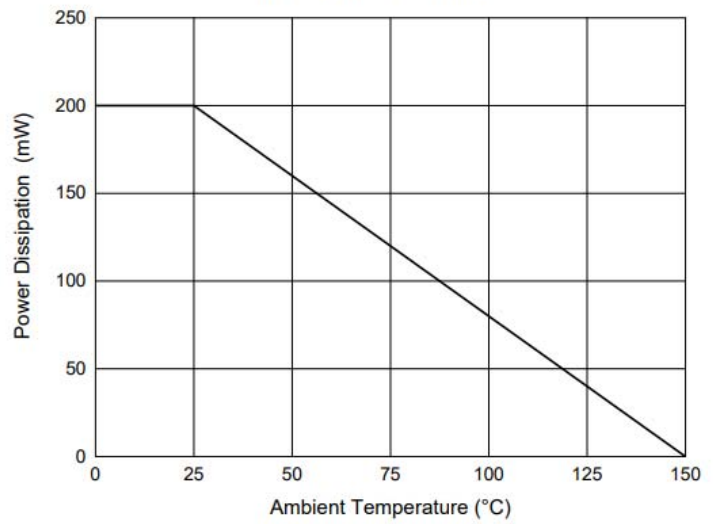
OFF Characteristics



C_O — V_R



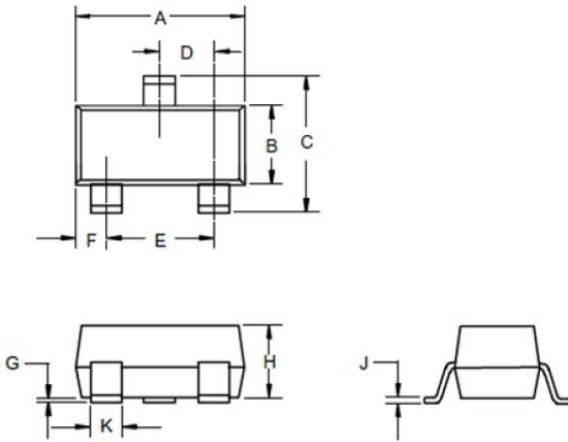
P_D — T_a





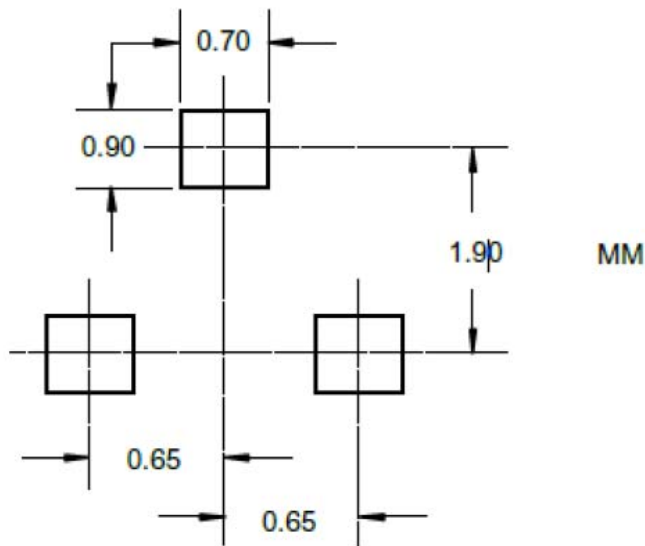
DTC123JUA

■SOT-323 Package Outline Dimensions



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

■SOT-323 Soldering Footprint





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