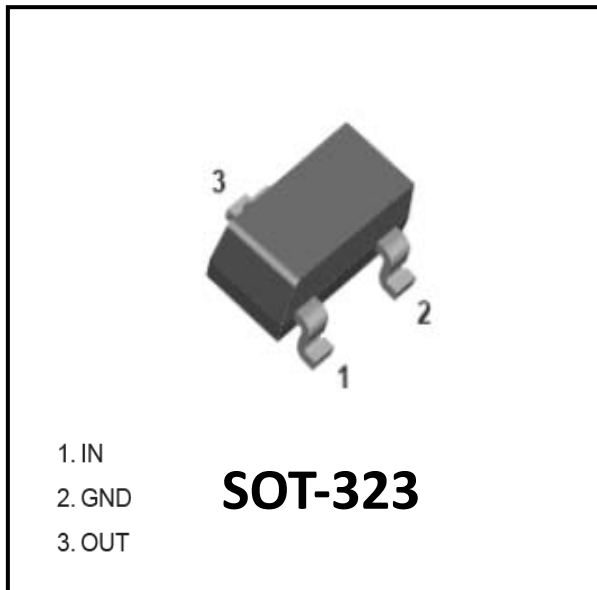


Digital Transistors (Built-in Resistors)



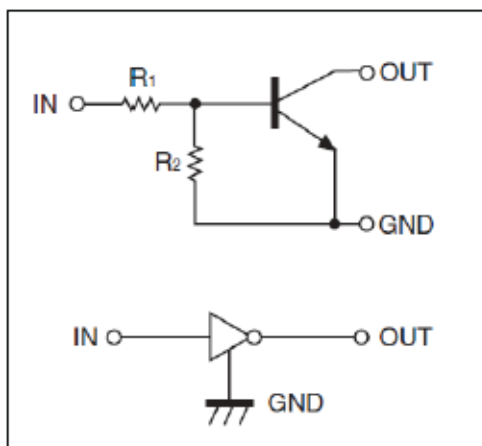
Features

- 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:** 04

■Equivalent circuit



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

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Collector-Base Voltage	V_{CBO}	V		50
Collector-Emitter Voltage	V_{CEO}	V		50
Emitter-Base Voltage	V_{EBO}	V		5
Collector Current	I_C	mA		100
Power Dissipation	PD	mW		200
Junction Temperature	T_J	°C		150
Storage Temperature	TSTG	°C		-55 to +150



DTC114TUA

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

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Collector-Base Breakdown Voltage	V_{CBO}	V	$I_C=50\mu A$	50		
Collector-Emitter Breakdown Voltage	V_{CEO}	V	$I_C=1mA$	50		
Emitter-Base Breakdown Voltage	V_{EBO}	V	$I_E=50\mu A$	5		
Collector Cut-off Current	I_{CBO}	μA	$V_{CB}=50V$			0.5
Emitter Cut-off Current	I_{EBO}	μA	$V_{EB}=4V$			0.5
DC current gain	h_{FE}		$V_{CE}=5V, I_C=1mA$	100		600
Input resistance	R_i	$k\Omega$		7	10	13
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=10mA, I_B=1mA$			0.3
Transition frequency	f_T	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$		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
DTC114TUA	F2	Approximate 0.005	3000	30000	120000	7" reel

■ Characteristics (Typical)

Fig. 1 - Static Characteristics

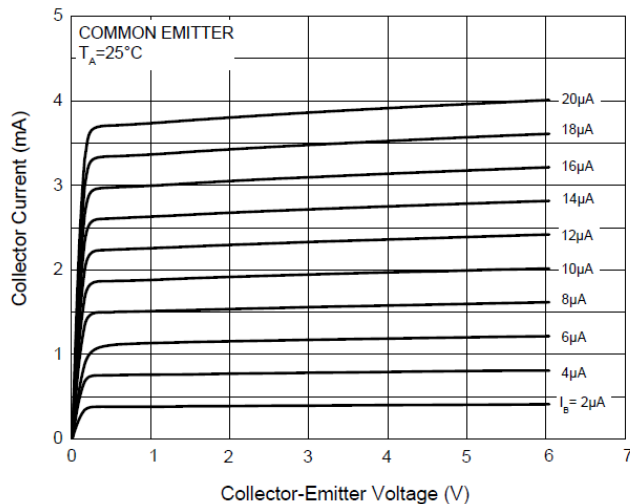


Fig. 2 - DC Current Gain Characteristics

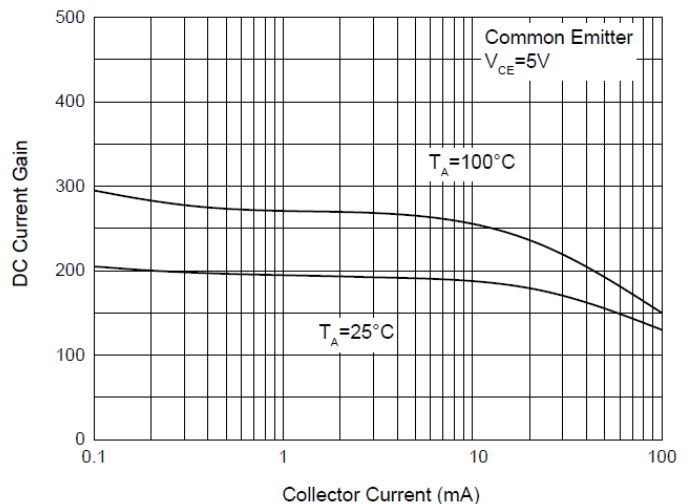




Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

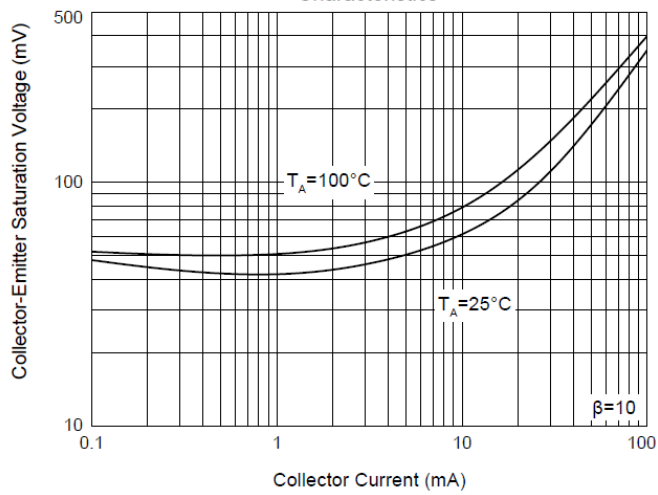


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

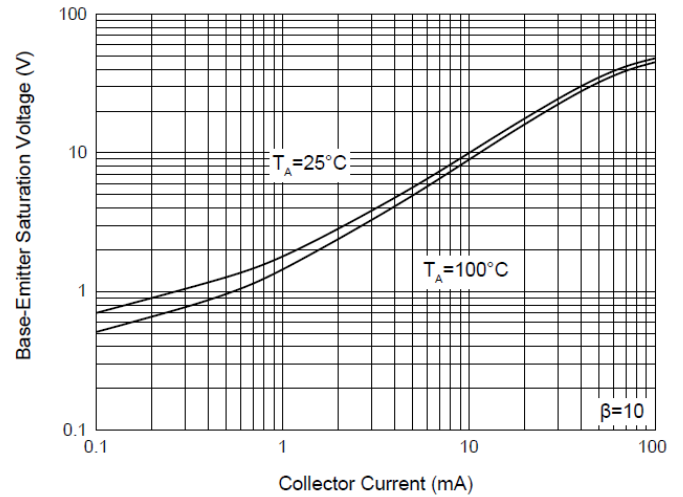
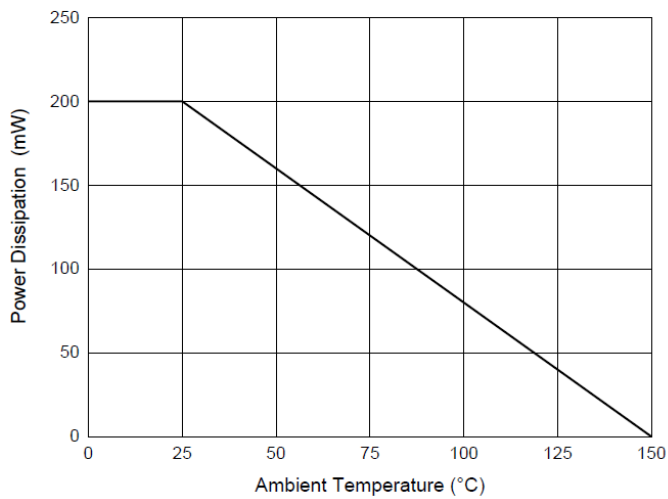


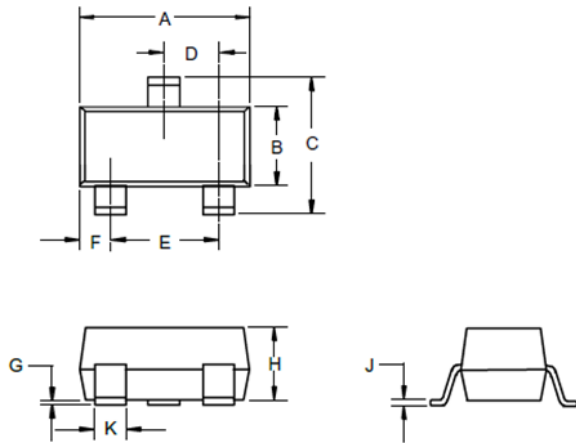
Fig. 5 - Power Derating Curve





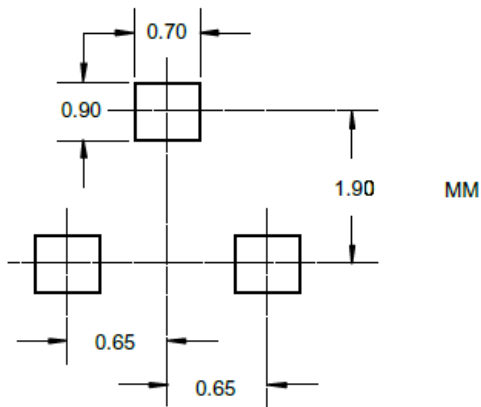
DTC114TUA

■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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