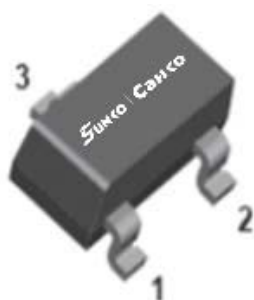


Digital Transistors (Built-in Resistors)



1. IN
2. GND
3. OUT

SOT-23-3L

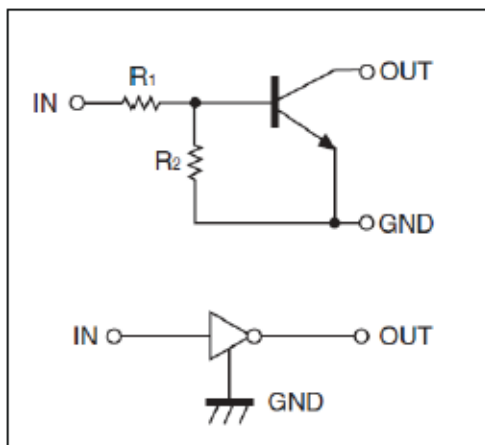
Features

- 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-23-3L
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 24

■Equivalent circuit



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

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Supply Voltage	VCC	V		50
Input Voltage	VIN	V		-10 to +40
Output Current	IO	mA		100
Power Dissipation	PD	mW		200
Thermal Resistance, Junction to Ambient	R _{thJA}	°C/W		625
Junction Temperature	T _J	°C		150
Storage Temperature	TSTG	°C		-55 to +150

DTC114EKA

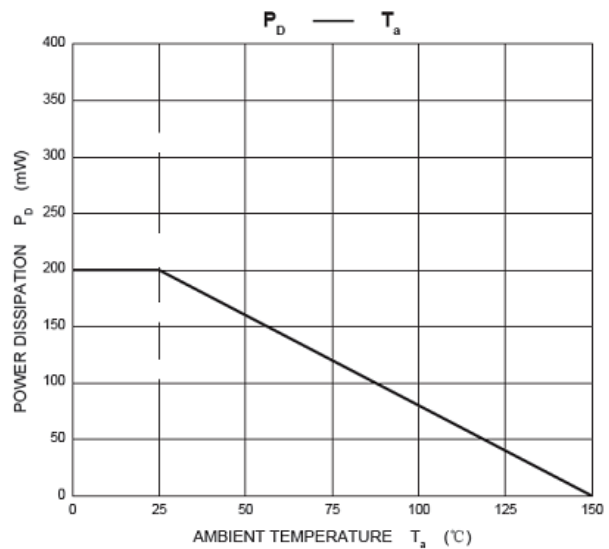
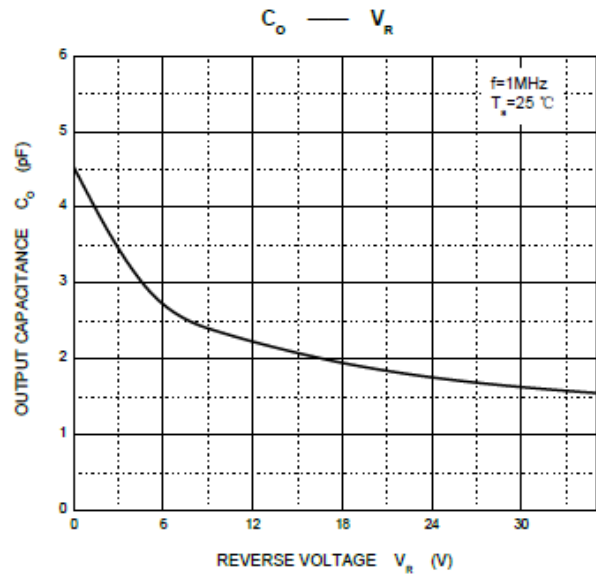
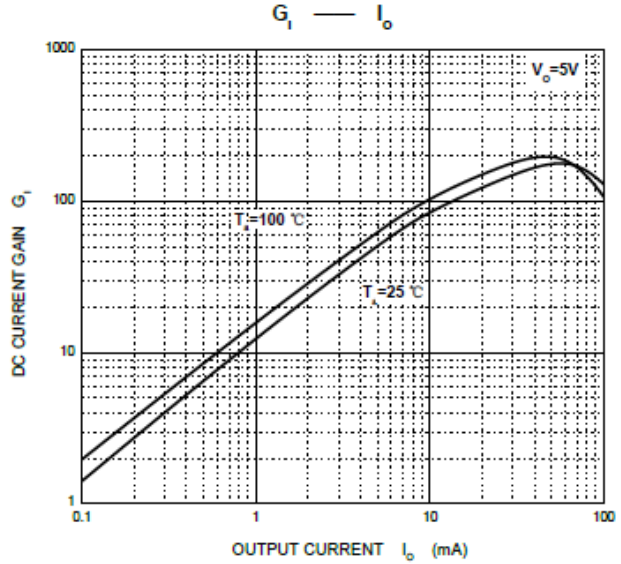
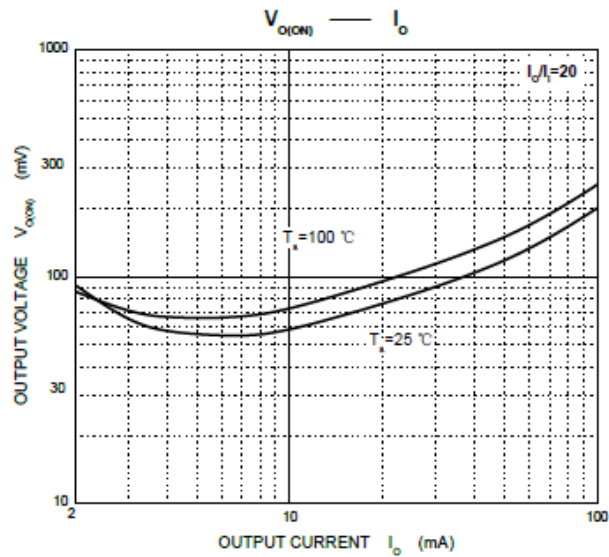
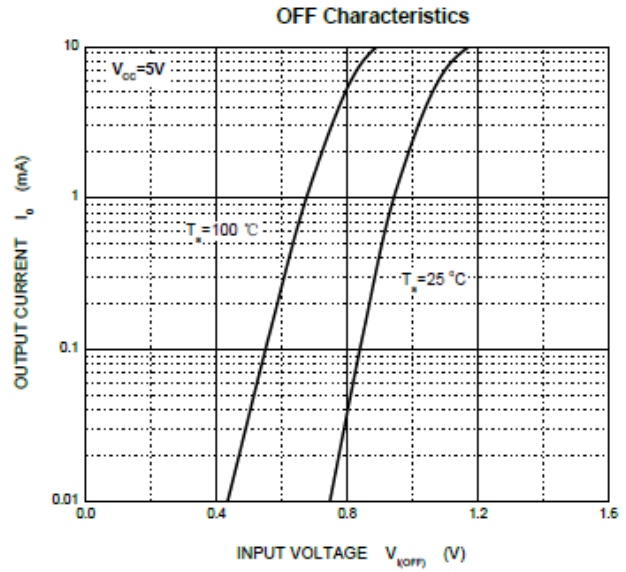
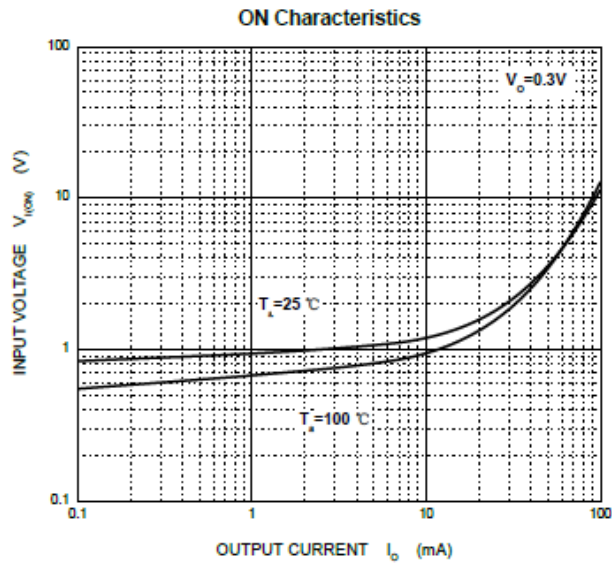
■ Electrical Characteristics (Ta=25°C unless otherwise specified)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Input voltage	$V_{I(off)}$	V	$V_{CC}=5V, I_c=100\mu A$	0.5		
	$V_{I(on)}$	V	$V_0=0.3V, I_c=10mA$			3
Output voltage	$V_{O(on)}$	V	$I_o / I_i = 10mA / 0.5 mA$			0.3
Input current	I_I	mA	$V_I=5V$			0.88
Output current	$I_{O(off)}$	μA	$V_{CC}=50V, V_i=0$			0.5
DC current gain	G_I		$V_o=5V, I_o = 5mA$	30		
Input resistance	R_1	k Ω		7	10	13
Resistance ratio	R_2/R_1			0.8	1	1.2
Transition frequency	fT	MHz	$V_o=10V, I_o=5mA, f=100MHz$		250	

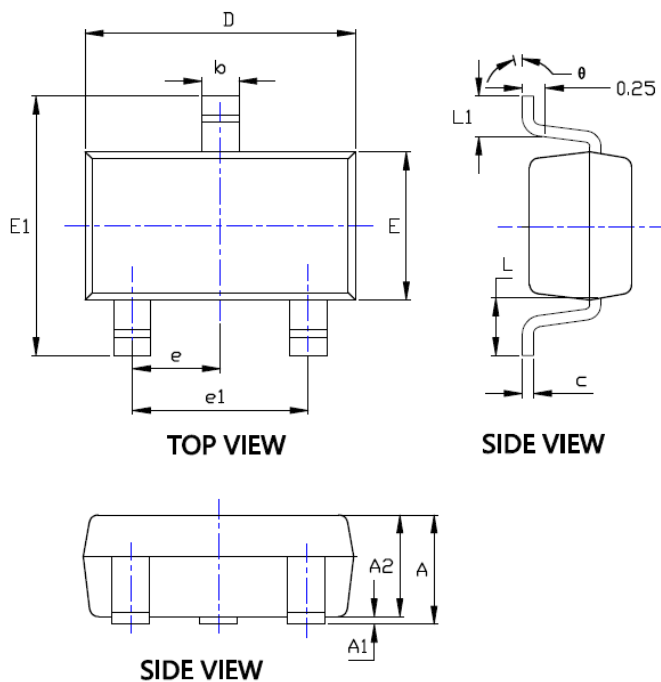
■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
DTC114EKA	F2	Approximate 0.014	3000	30000	120000	7" reel

■ Characteristics (Typical)

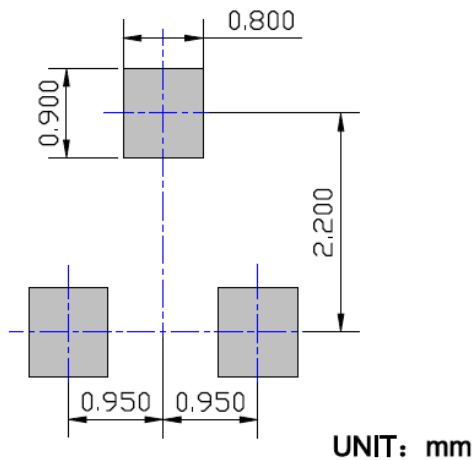


■SOT-23-3L Package Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.041	0.049	1.050	1.250
A1	0.000	0.008	0.000	0.200
A2	0.041	0.045	1.050	1.150
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.111	0.119	2.820	3.020
E	0.059	0.067	1.500	1.700
E1	0.104	0.116	2.650	2.950
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.024REF		0.600REF	
L1	0.012	0.024	0.300	0.600
∅	0°	8°	0°	8°

■SOT-23-3L Suggested Pad Layout



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