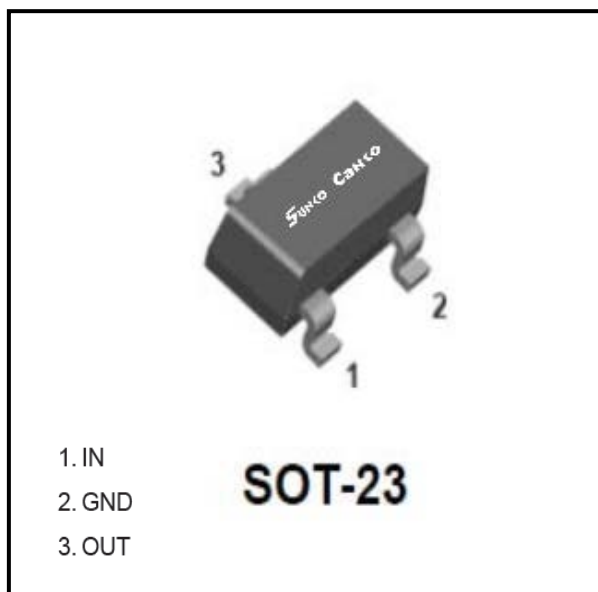


Digital Transistors (Built-in Resistors)



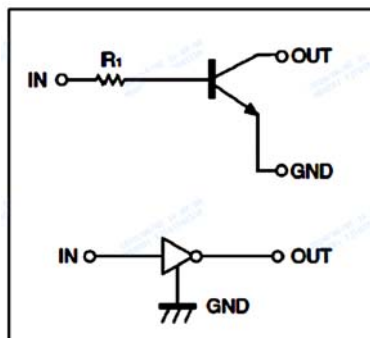
Features

- 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-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 03

■Equivalent circuit



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

ITEM	SYMBOL	UNIT	CONDITIONS	VALUE
Collector-Base Voltage	VCBO	V		50
Collector-Emitter Voltage	VCEO	V		50
Emitter-Base Voltage	VEBO	V		5
Collector Current	IC	mA		100
Power Dissipation	PD	mW		200
Junction Temperature	Tj	°C		150
Storage Temperature	TSTG	°C		-55 to +150

DTC143TCA

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

ITEM	SYMBOL	UNIT	CONDITIONS	MIN	TYP	MAX
Collector-Base Breakdown Voltage	VCBO	V	IC=50uA	50		
Collector-Emitter Breakdown Voltage	VCEO	V	IC=1mA	50		
Emitter-Base Breakdown Voltage	VEBO	V	IE=50uA	5		
Collector Cut-off Current	ICBO	uA	VCB=50V			0.5
Emitter Cut-off Current	IEBO	uA	VEB=4V			0.5
DC current gain	hFE		VCE=5V, IC =1mA	100		600
Input resistance	R _i	kΩ		3.29	4.7	6.11
Collector-Emitter Saturation Voltage	VCE(sat)	V	IC =5mA, IB=0.25mA			0.3
Transition frequency	fT	MHz	VCE=10V, IE=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
DTC143TCA	F2	Approximate 0.009	3000	30000	120000	7" reel

■ Characteristics (Typical)

Fig. 1 - Static Characteristics

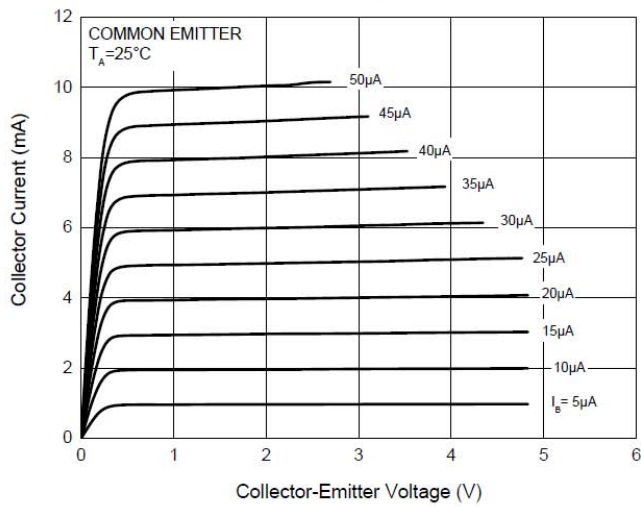


Fig. 2 - DC Current Gain Characteristics

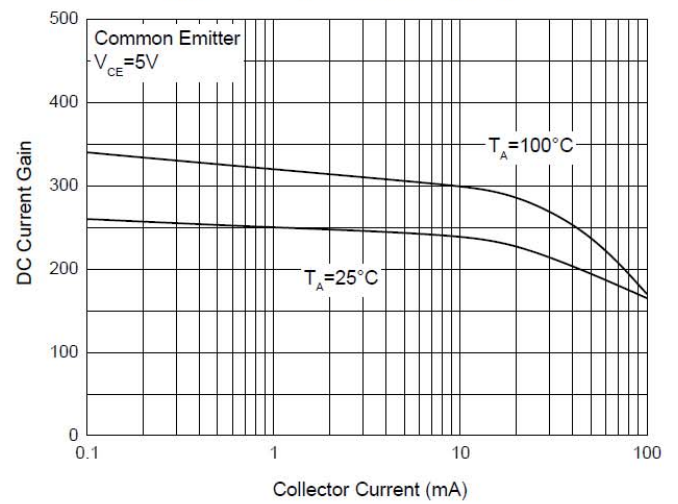


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

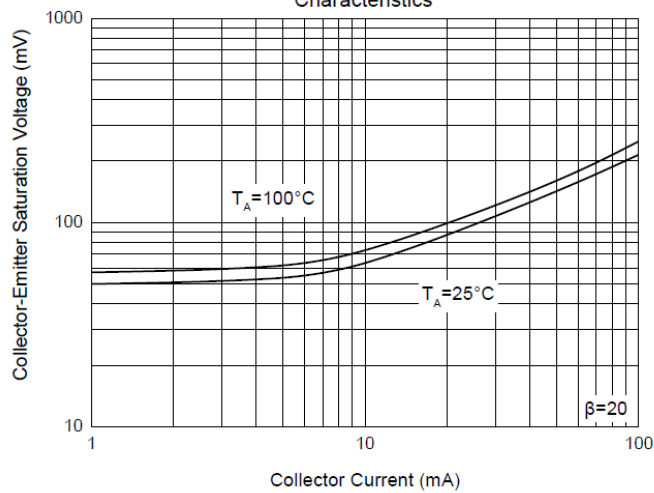
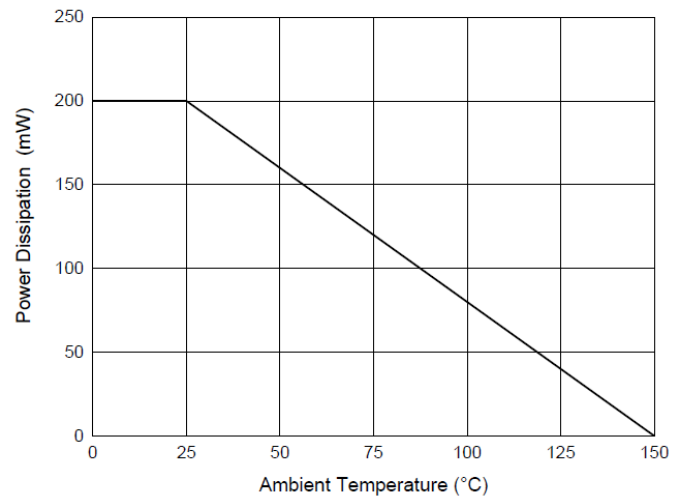
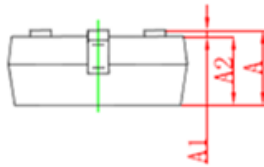
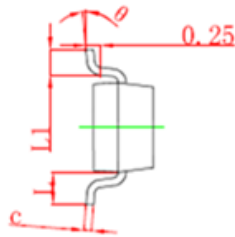
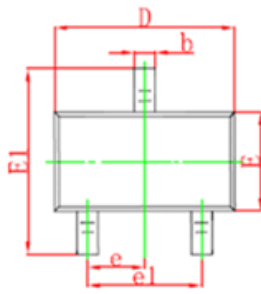


Fig. 4 - Power Derating Curve

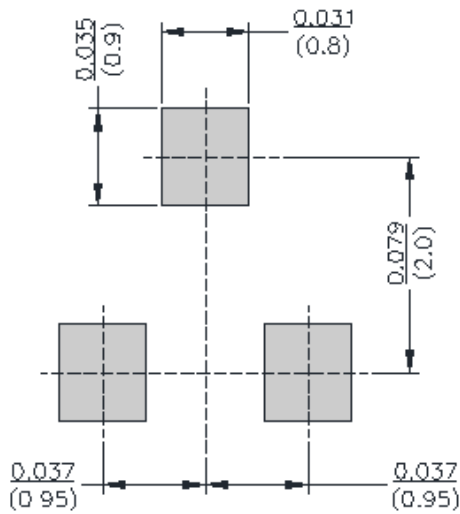


■SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

■SOT-23 Suggested Pad Layout



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