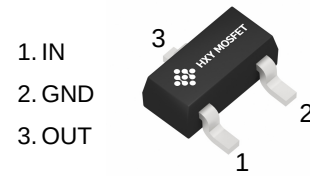


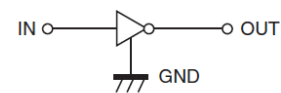
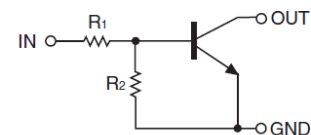


Features

- Simplifies Circuit Design.
- Reduces Board Space and Component Count.
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- Only the on/off conditions need to be set for operation, making device design easy



SOT-23



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
DTC143ZCAT116	SOT-23	A8K	3000

Maxmim Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Limits	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
I_C	Collector Current	100	mA
P_D	Total Power Dissipation @T _A =25°C	200	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

Electrcal Charcteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-Base Cutoff Current	I_{CBO}	$V_{CB} = 50 \text{ V}, I_E = 0$			100	nA
Collector-Emitter Cutoff Current	I_{CEO}	$V_{CB} = 50 \text{ V}, I_B = 0$			500	nA
Emitter-Base Cutoff Current	I_{EBO}	$V_{EB} = 6.0 \text{ V}, I_C = 0$			180	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10 \mu\text{A}, I_E = 0$	50			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 2 \text{ mA}, I_B = 0$	50			V
DC Current Gain	h_{FE}	$V_{CE} = 10 \text{ V}, I_C = 5.0 \text{ mA}$	80	200		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 0$			0.25	V
Output Voltage (on)	V_{OL}	$V_{CC} = 5.0 \text{ V}, V_B = 2.5 \text{ V}, R_L = 1.0 \text{ k}\Omega$			0.2	V
Output Voltage (off)	V_{OH}	$V_{CC} = 5.0 \text{ V}, V_B = 0.05 \text{ V}, R_L = 1.0 \text{ k}\Omega$	4.9			V
Input Resistor	R_1		3.3	4.7	6.1	V
Resistor	R_1/R_2		0.055	0.1	0.185	V



Typical Characteristics

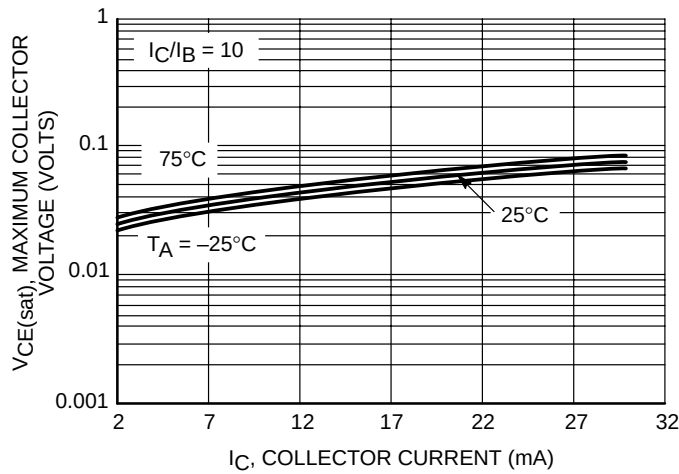


Figure 1. $V_{CE(sat)}$ vs. I_C

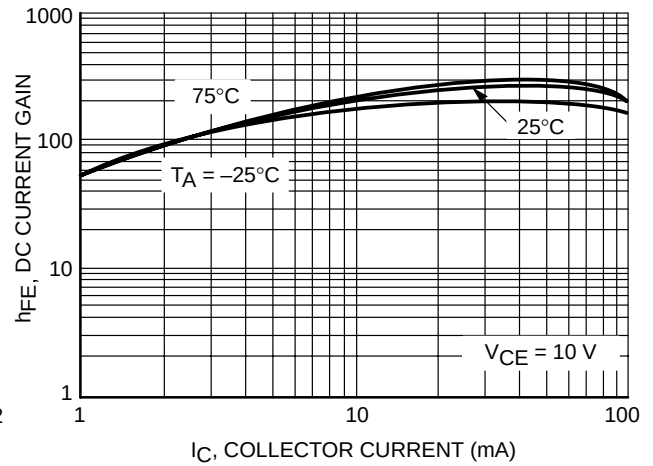


Figure 2. DC Current Gain

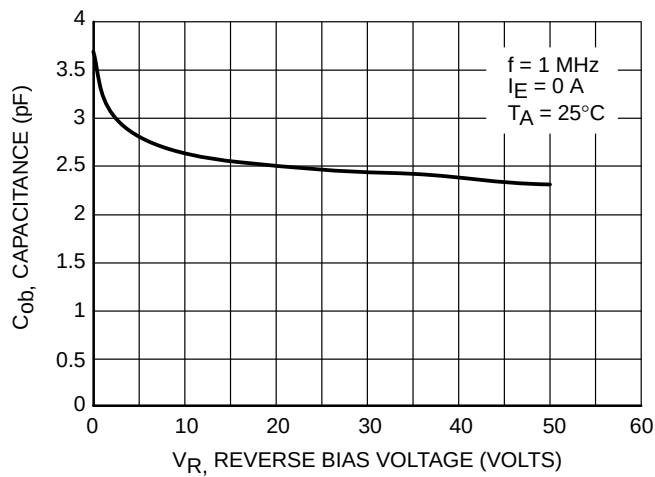


Figure 3. Output Capacitance

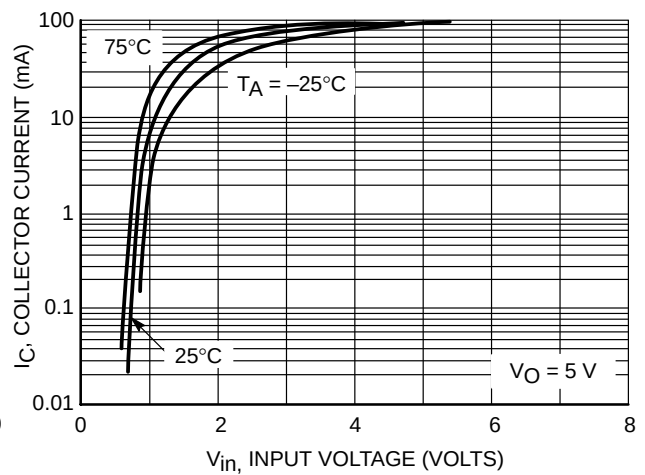


Figure 4. Output Current vs. Input Voltage

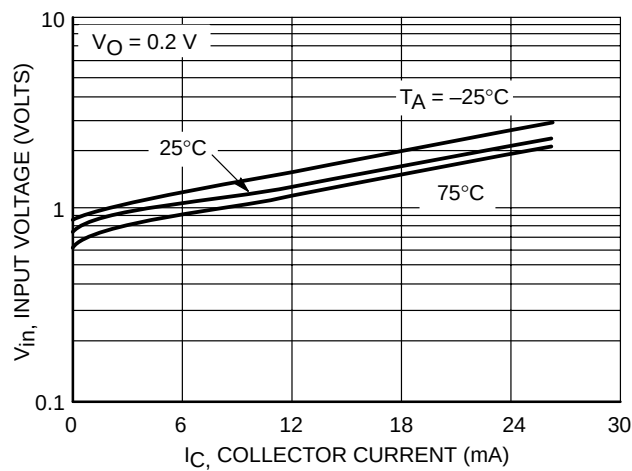
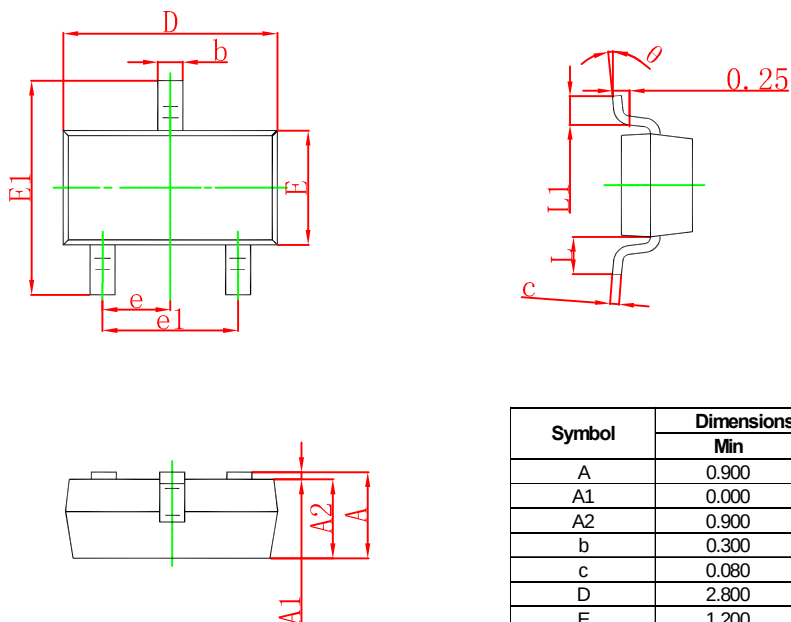


Figure 5. Input Voltage vs. Output Current

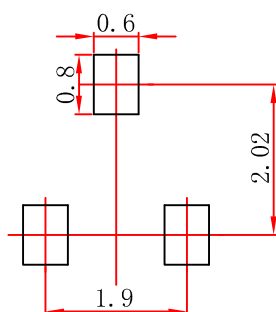


SOT-23 Package Outline Dimensions



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	0.080	0.150	0.003	0.006
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	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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