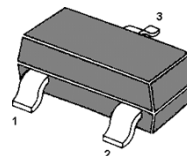


DTC114YCA DIGITAL TRANSISTOR (NPN)

FEATURES

- Epitaxial Planar Die Construction
- Complementary NPN Types Available
- Built-In Biasing Resistors

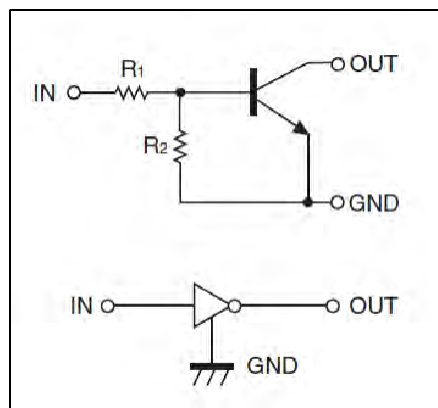
MARKING: Y14



1.Base (IN) 2.Emitter (GND)
3.Collector (OUT)
SOT-23 Plastic Package

MAXIMUM RATINGS($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Min	Typ	Max	Unit
I_C	Collector current	---	100	---	mA
V_{IN}	Input voltage	-6	---	40	V
P_d	Power dissipation	---	200	---	mW
T_J	Junction temperature	---	---	150	$^\circ\text{C}$
T_{stg}	Storage temperature	-55	---	150	$^\circ\text{C}$



Equivalent Circuit

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ($V_{CC}=5V, I_O=100\mu A$)	0.3	---	---	V
$V_{I(on)}$		---	---	1.4	V
$V_{O(on)}$	Output voltage ($I_O=5mA, I_I=0.25mA$)	---	---	0.3	V
I_I	Input current ($V_I=5V$)	---	---	0.88	mA
$I_{O(off)}$	Output current ($V_{CC}=50V, V_I=0$)	---	---	0.5	μA
G_I	DC current gain ($V_O=5V, I_O=5mA$)	68	---	---	
R_1	Input resistance	7	10	13	K Ω
R_2/R_1	Resistance ratio	3.7	4.7	5.7	
f_T	Transition frequency ($V_{CE}=10V, I_E=5mA, f=100MHz$)	---	250	---	MHz

Typical Characteristics

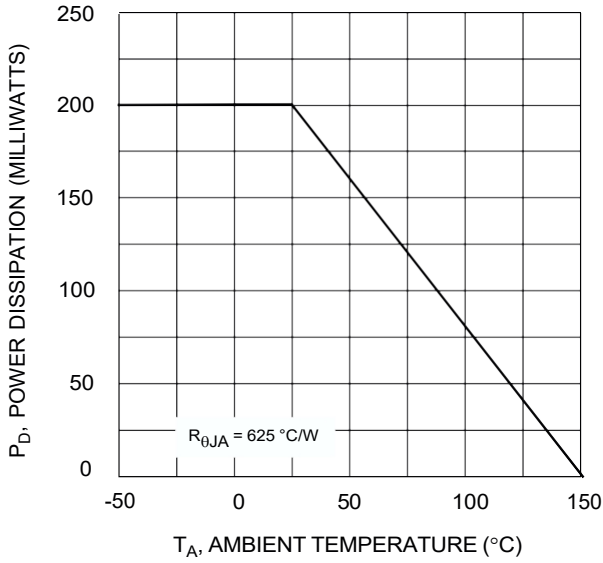


Fig. 1 Derating Curve

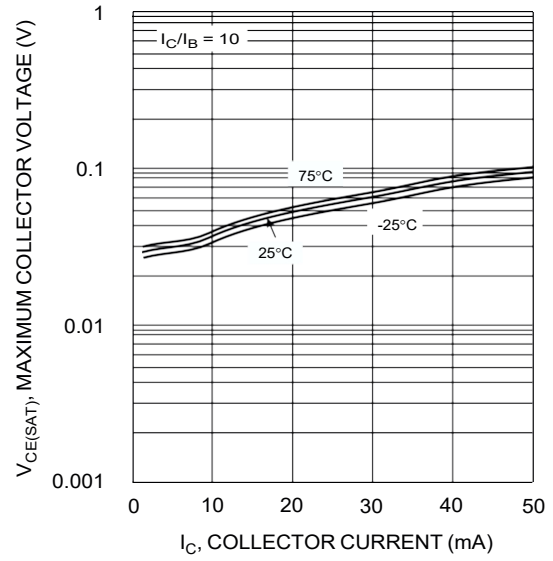


Fig. 2 $V_{CE(SAT)}$ vs. I_C

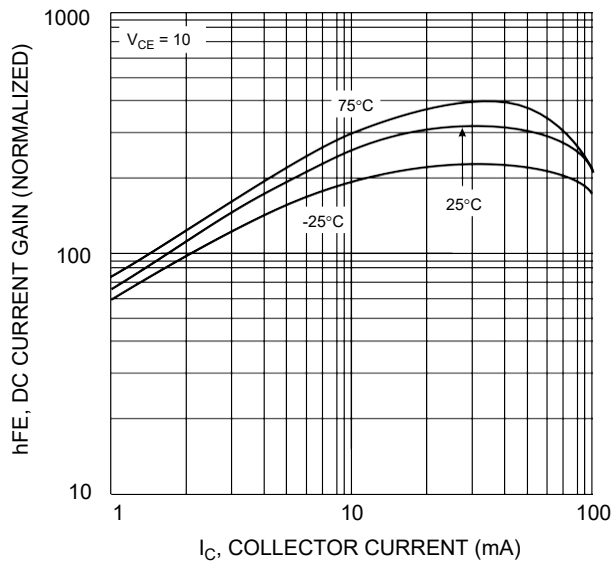


Fig. 3 DC Current Gain

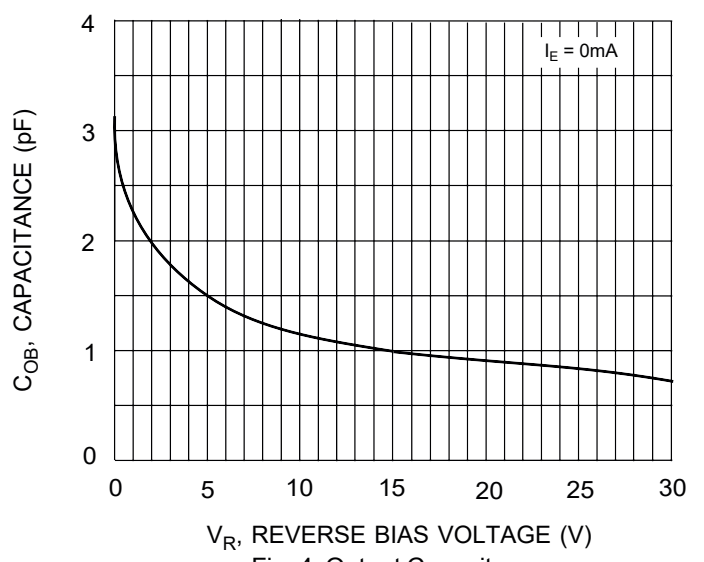


Fig. 4 Output Capacitance

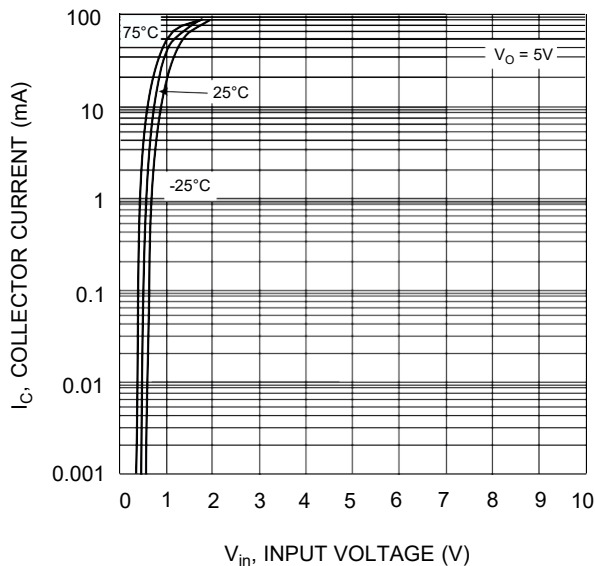


Fig. 5 Collector Current vs. Input Voltage

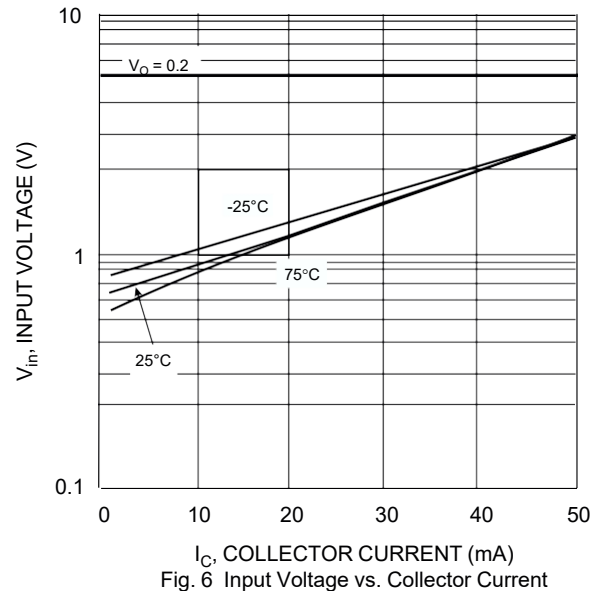
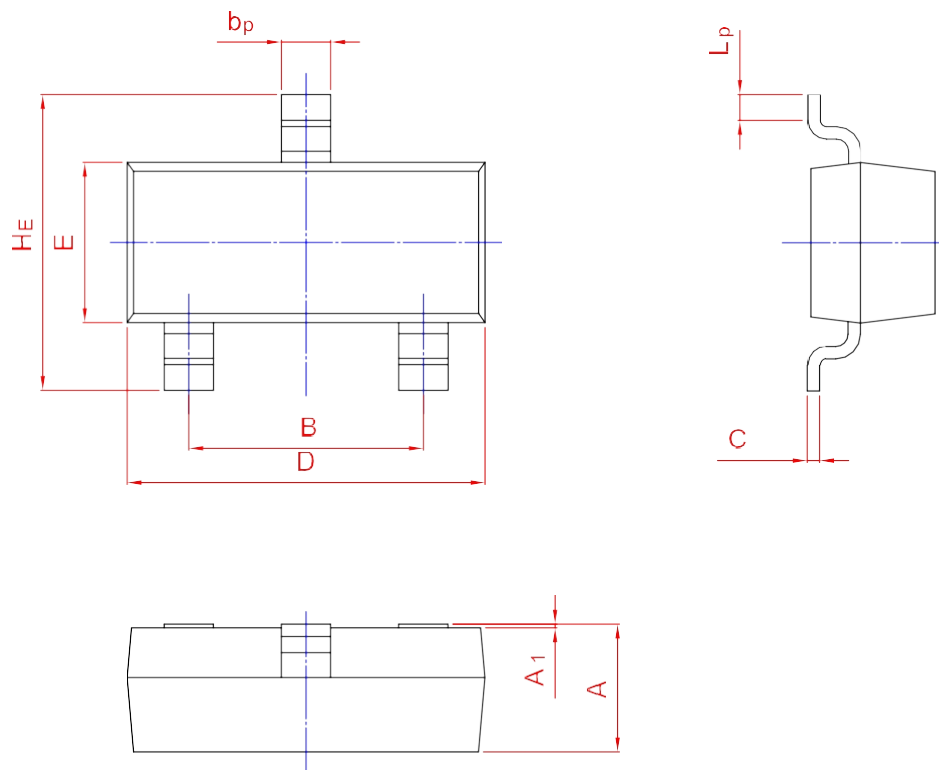
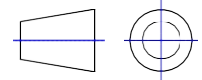


Fig. 6 Input Voltage vs. Collector Current

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b _p	C	D	E	H _E	A ₁	L _p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20