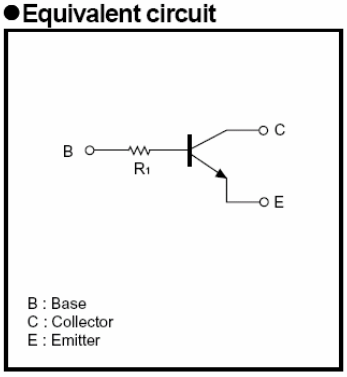
WEITRON

DTC144TCA

NPN DIGITAL TRANSISTOR

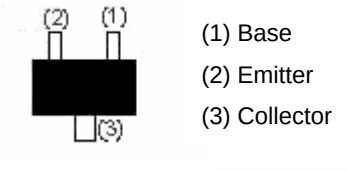
Pb Lead(Pb)-Free

● Equivalent circuit



Features:

* Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
* 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.



(1) Base
(2) Emitter
(3) Collector

Addreviated symbol: 06

MAXIMUM RATINGS* T_A=25℃ unless otherwise noted

Parameter	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current -Continuous	I_C	100	mA
Collector Dissipation	P_C	200	mW
Junction temperature	Tj	150	℃
Junction and Storage Temperature	T_{stg}	-55~+150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter		Symbol	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	I_C=50μA,I_E=0	$V_{(BR)CBO}$	50			V
Collector-emitter breakdown voltage	I_C=1mA,I_B=0	$V_{(BR)CEO}$	50			V
Emitter-base breakdown voltage	I_E=50μA,I_C=0	$V_{(BR)EBO}$	5			V
Collector cut-off current	V_{CB}=50V,I_E=0	I_{CBO}			0.5	uA
Emitter cut-off current	V_{EB}=4V,I_C=0	I_{EBO}			0.5	uA
DC current gain	V_{CE}=5V,I_C=1mA	h_{FE}	100	300	600	
Collector-emitter saturation voltage	I_C=5mA,I_B=0.5mA	$V_{CE(sat)}$			0.3	V
Transition frequency	V_{CE}=10V,I_E=-5mA, f=100MHz	f_T		250		MHz
Input resistor		R1	32.9	47	61.1	kΩ

Typical Characteristics

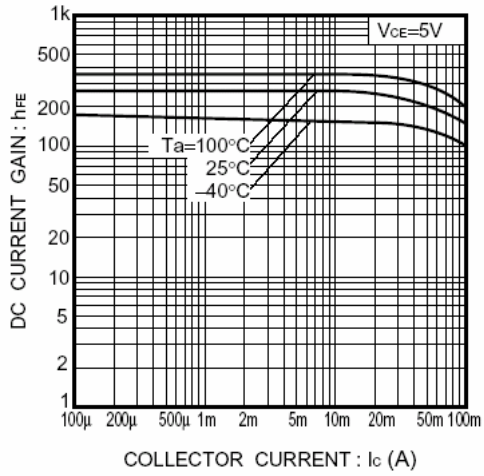


Fig.1 DC current gain vs. collector current

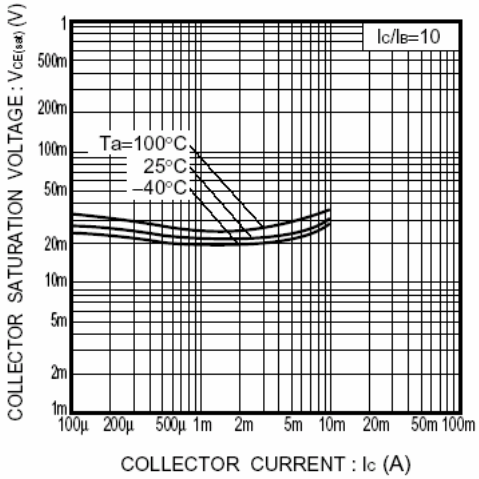
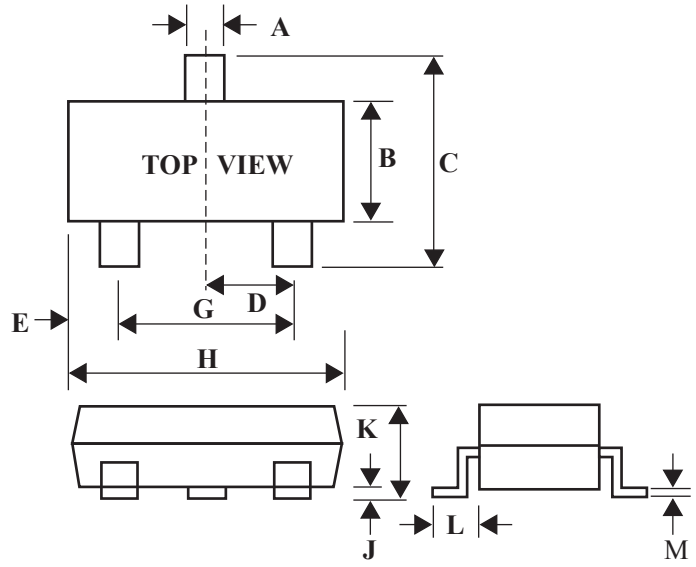


Fig.2 Collector-emitter saturation voltage vs. collector current

SOT-23 Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25