

**SOT-23 DIGITAL TRANSISTOR
TRANSISTORS(NPN)**

FEATURES

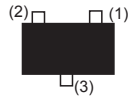
- * Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- * The bias resistors consist of thin-film resistors with complete isolation to without connecting external input. They also have the advantage of almost completely eliminating parasitic effects.
- * Only the on/off conditions need to be set for operation marking device design easy.

MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: UL 94V-O rate flame retardant
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.008 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

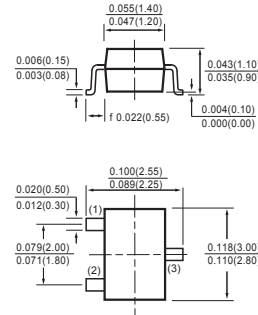
Ratings at 25°C ambient temperature unless otherwise specified.



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



SOT-23



Dimensions in inches and (millimeters)

MAXIMUM RATINGS (@ TA = 25°C unless otherwise noted)

RATINGS	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	T_j	150	°C
Junction and storage Temperature	T_J, T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (@ TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector-base breakdown voltage ($I_C = 50\mu A, I_E = 0$)	$V_{(BR)CBO}$	50	-	-	V
Collector-emitter breakdown voltage ($I_C = 1mA, I_B = 0$)	$V_{(BR)CEO}$	50	-	-	V
Emitter-base breakdown voltage ($I_E = 50\mu A, I_C = 0$)	$V_{(BR)EBO}$	5	-	-	V
Collector cut-off current ($V_{CB} = 50V, I_E = 0$)	I_{CBO}	-	-	0.5	μA
Emitter cut-off current ($V_{EB} = 4V, I_C = 0$)	I_{EBO}	-	-	0.5	μA
DC current gain ($V_{CE} = 5V, I_C = 1mA$)	h_{FE}	100	300	600	-
Collector-emitter saturation voltage ($I_C = 10mA, I_B = 1mA$)	$V_{CE(sat)}$	-	-	0.3	V
Transition frequency ($V_{CE} = 10V, I_E = -5mA, f = 100MHz$)	f_T	-	250	-	MHz
Input resistor	R_1	7	10	13	K Ω

NOTE: "Fully ROHS compliant", "100% Sn plating (Pb-free)".

RATING AND CHARACTERISTICS CURVES (DTC114TCA)

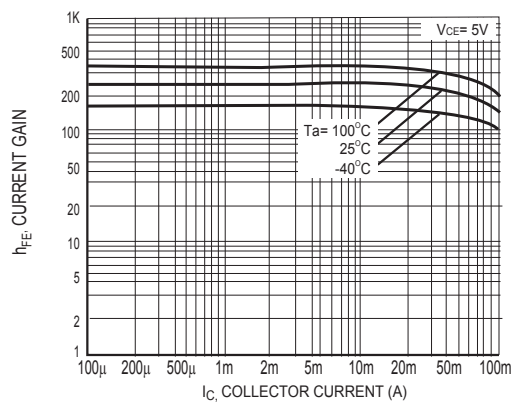


Figure1 DC current gain vs. collector current

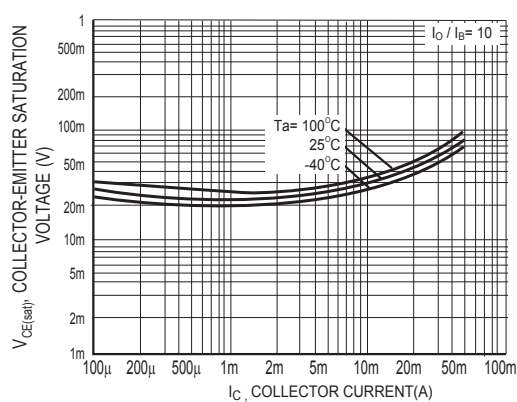


Figure2 Collector- emitter saturation voltage vs. collector current

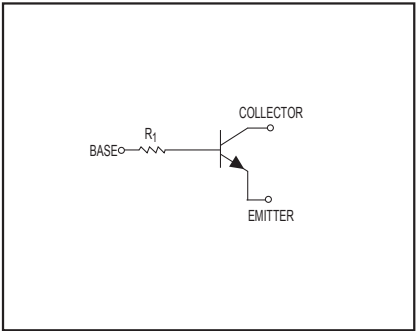


Figure3 Equivalent circuit

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