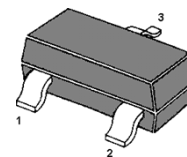
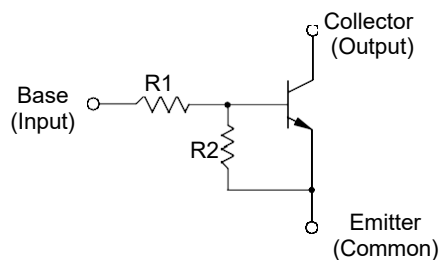


MMDTN133 NPN Silicon Epitaxial Planar Digital Transistor



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	50	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	10	V
Input On Voltage	$V_{i(on)}$	20	V
Collector Current	I_C	100	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_S	- 65 to + 150	$^\circ\text{C}$

Resistor Values

Type	R1 (K Ω)	R2 (K Ω)
MMDTN133	10	10

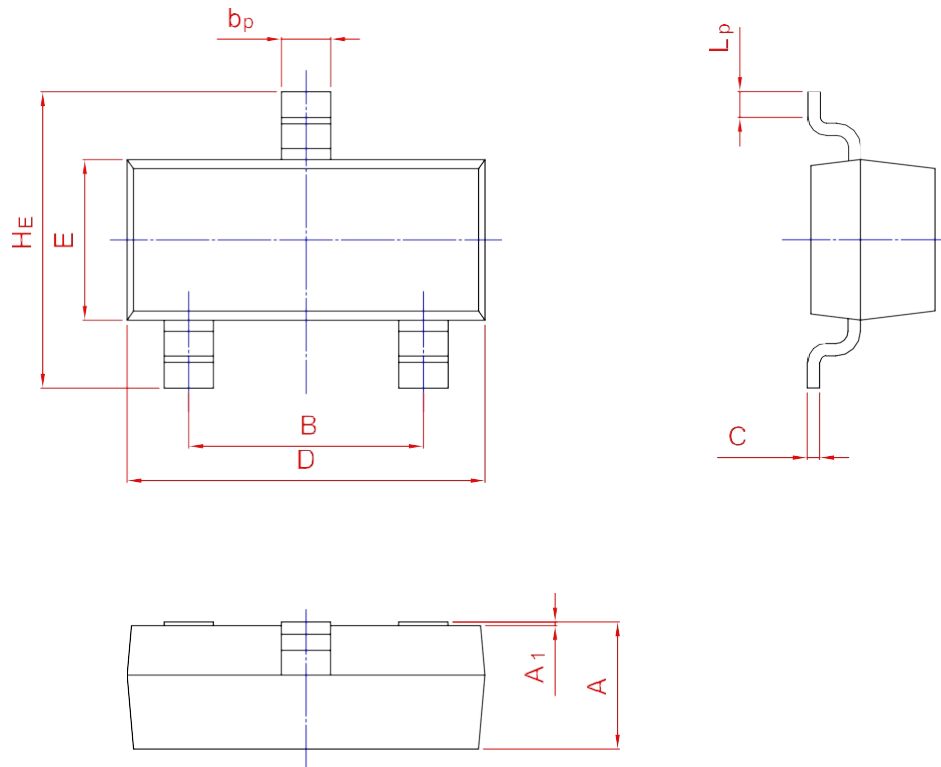
Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 5\text{ mA}$	h_{FE}	30	-	-	-
Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$	$V_{(BR)CBO}$	50	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CEO}$	50	-	-	V
Collector Base Cutoff Current at $V_{CB} = 40\text{ V}$	I_{CBO}	-	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 10\text{ V}$	I_{EBO}	-	-	0.75	mA
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$	V_{CEsat}	-	-	0.3	V
Input Off Voltage at $V_{CE} = 5\text{ V}$, $I_C = 100\text{ }\mu\text{A}$	$V_{i(off)}$	0.8	-	1.5	V
Input On Voltage at $V_{CE} = 0.3\text{ V}$, $I_C = 2\text{ mA}$	$V_{i(on)}$	1	-	2.5	V
Transition Frequency at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	-	130	-	MHz
Input Resistor	R1	7	10	13	K Ω
Resistor Ratio	R1/R2	0.9	1	1.1	-

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	0.95 1.40	2.04 1.78	0.50 0.35	0.19 0.08	2.70 3.10	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20