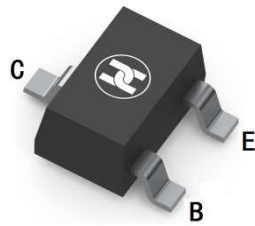
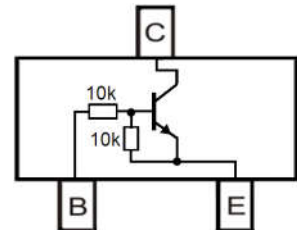


NPN SMALL SINGAL DIGITAL TRANSISTOR

FEATURES

- Built-in bias resistors
- Simplified circuit design
- Reduction of component count
- Complement to PDTA114EU


SOT-323


MECHANICAL DATA

- Case: SOT-323 (SC-70)
- Case material: Molded Plastic. UL flammability
- Classification rating: 94V-0
- Terminals: Tin plated, solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (approximate)

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

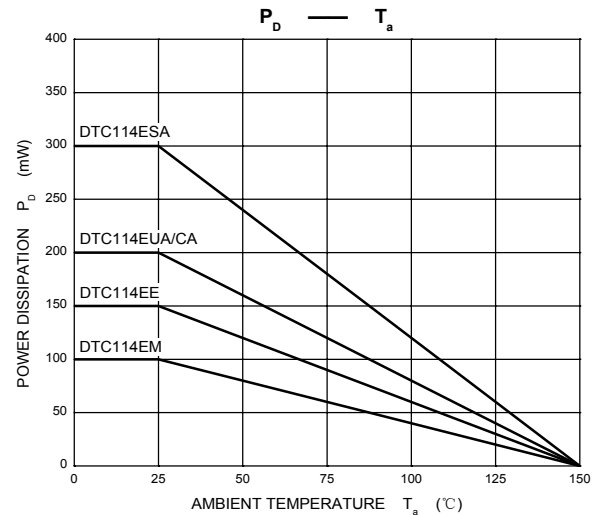
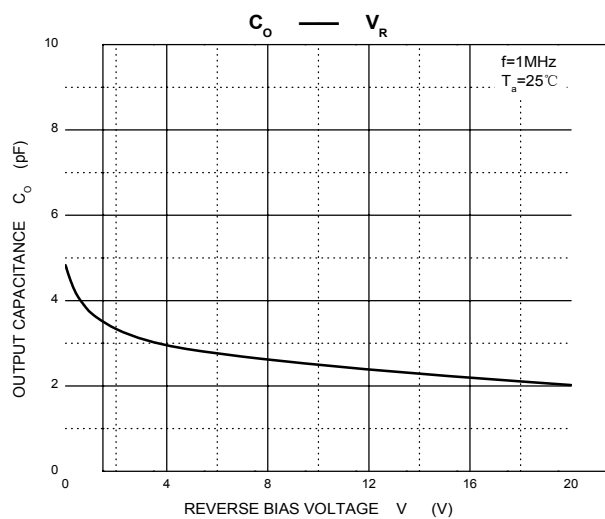
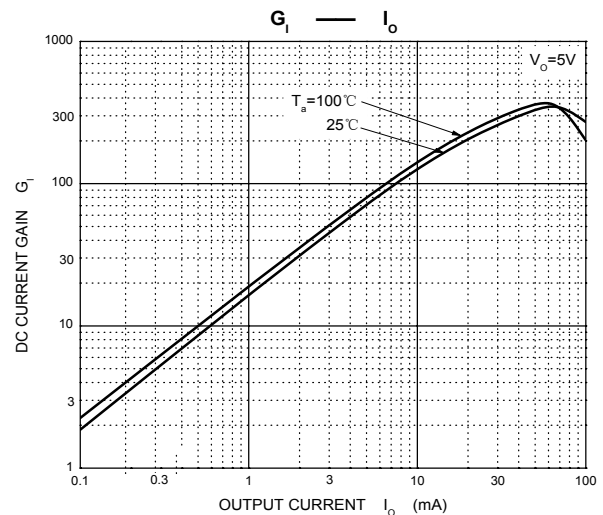
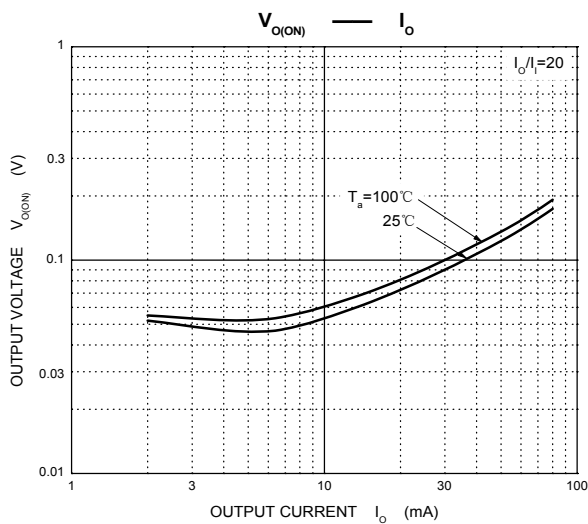
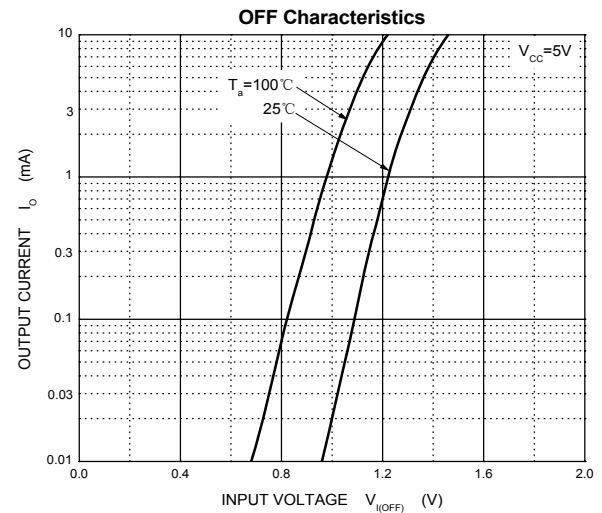
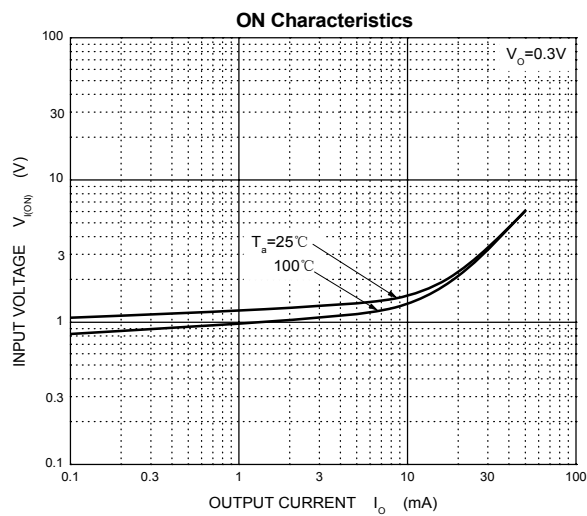
Parameter		Symbol	Value	Unit	Conditions
Collector-base voltage		V_{CB0}	50	V	Open emitter
Collector-emitter voltage		V_{CEO}	50	V	Open base
Emitter-base voltage		V_{EBO}	10	V	Open collector
Input voltage	Positive	V_i	+40	V	
	Negative		-10	V	
Output current (DC)		I_o	100	mA	
Peak collector current		I_{CM}	100	mA	
Total power dissipation		P_{tot}	200	mW	Standard mounting
Storage temperature		T_{stg}	-65 ~ +150	$^\circ\text{C}$	
Junction temperature		T_j	150	$^\circ\text{C}$	
Operating ambient temperature		T_a	-65 ~ +150	$^\circ\text{C}$	
Thermal resistance from junction to ambient		$R_{th\ j-a}$	625	K/W	Standard mounting

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

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Collector-base cut-off current	I_{CBO}			100	nA	$V_{CB}=50\text{V}; I_E=0$
Collector-emitter cut-off current	I_{CEO}			1	μA	$V_{CE}=30\text{V}; I_B=0$
				50	μA	$V_{CE}=30\text{V}; I_B=0; T_j=150^\circ\text{C}$
Emitter-base cut-off current	I_{EBO}			400	μA	$V_{EB}=5\text{V}; I_C=0$
DC current gain	h_{FE}	30				$V_{CE}=5\text{V}; I_C=5\text{mA}$
Collector-emitter saturation voltage	V_{CEsat}			150	mV	$I_C=10\text{mA}; I_B=0.5\text{mA}$
Input-off voltage	$V_{i(off)}$		1.1	0.8	V	$I_C=100\text{mA}; V_{CE}=5\text{V}$
Input-on voltage	$V_{i(on)}$	2.5	1.8		V	$I_C=10\text{mA}; V_{CE}=0.3\text{V}$
Input resistor	R_1	7	10	13	k Ω	
Resistor ratio	R_2/R_1	0.8	1	1.2		
Collector capacitance	C_c			2.5	pF	$I_E=I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$

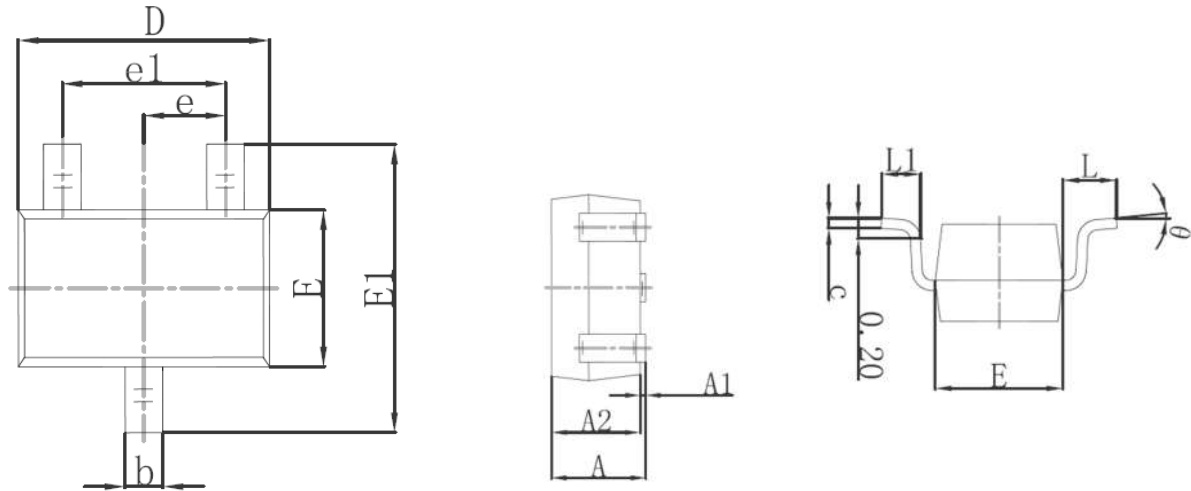
NPN SMALL SIGNAL DIGITAL TRANSISTOR

TYPICAL CHARACTERISTICS



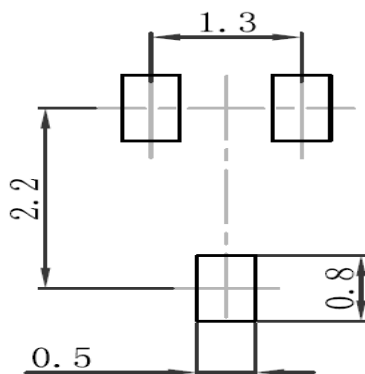
NPN SMALL SINGAL DIGITAL TRANSISTOR

SOT-323 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-323 SUGGESTED PAD LAYOUT



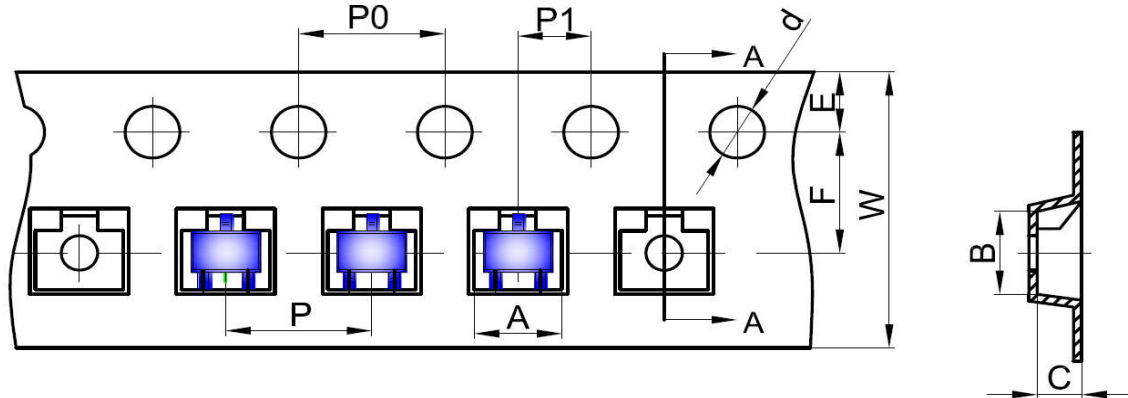
Note:

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

NPN SMALL SINGAL DIGITAL TRANSISTOR

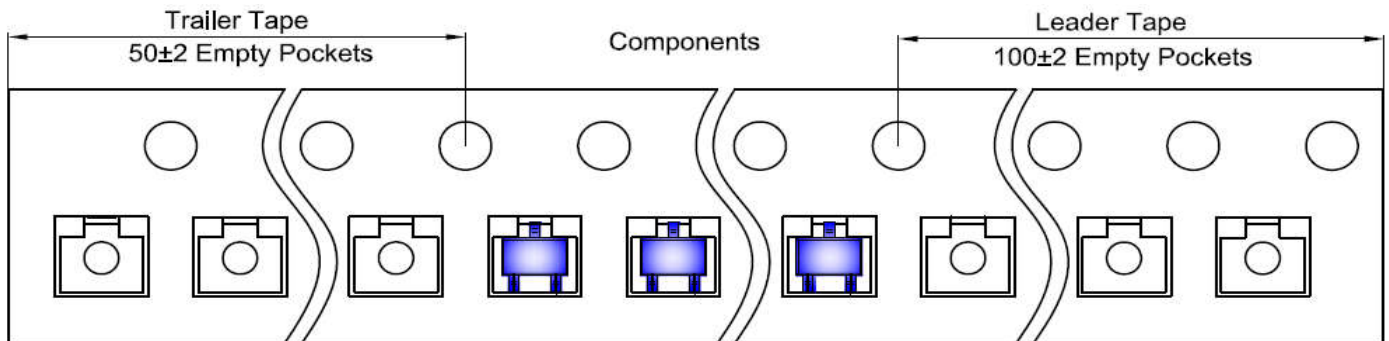
SOT-323 TAPE AND REEL

SOT-323 Embossed Carrier Tape

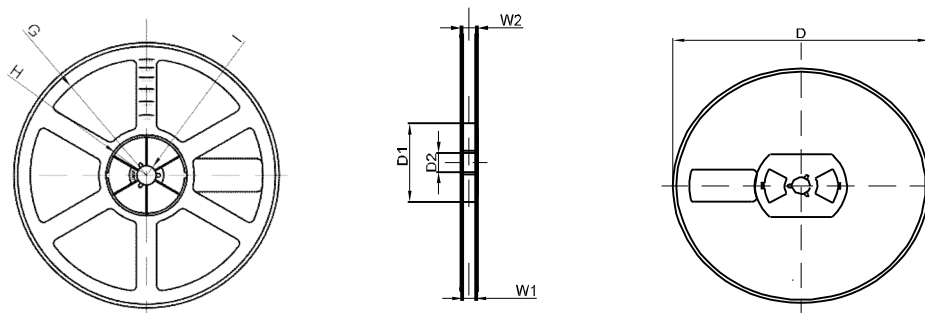


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-323 Tape Leader and Trailer



SOT-323 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1