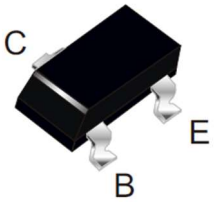
NPN Plastic Encapsulate Transistors

Features

- High Stability and High Reliability
- Ideal for automated placement
- Complementary to MMST3906
- Power Dissipation of 200mW

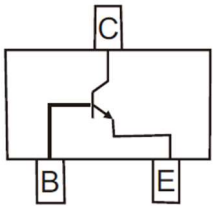
Appearance & Symbol

SOT-323



Mechanical Data

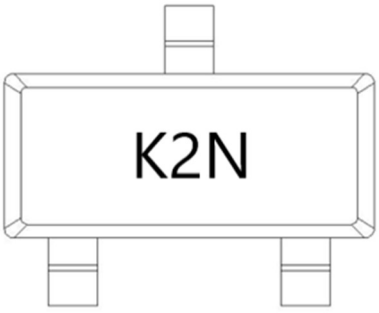
- Package: SOT-323
- Epoxy meets UL-94 V-0 flammability rating
- Terminals: Plated solderable per MIL-STD-750, Method 2026
- Tape Reel: 3000pcs



Application

- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Marking information



K2N=Marking Code

Absolute Maximum Ratings (T_A = 25°C unless otherwise specified)

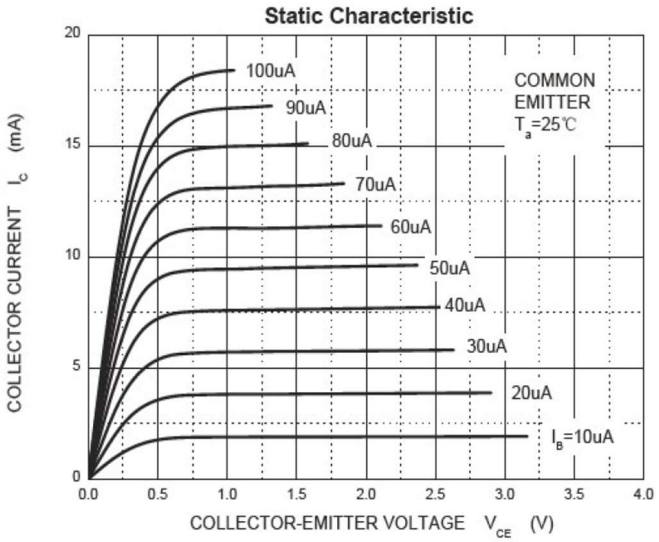
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	200	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction Temperature	T_J	-55 to +150	℃
Junction and Storage Temperature	T_{STG}	-55 to +150	℃

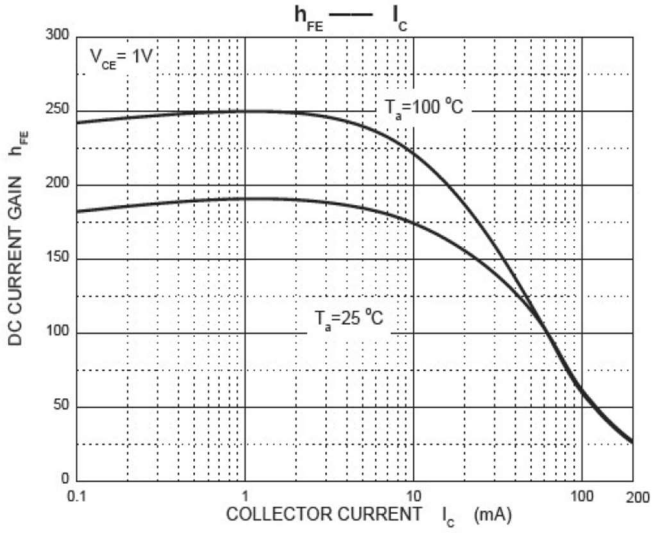
Electrical Characteristics (T_A = 25°C unless otherwise noted)

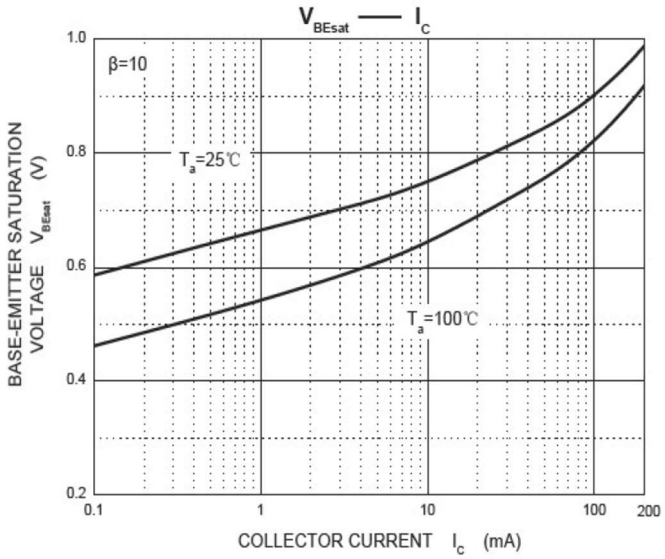
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10uA, I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10uA, I_C=0	6		V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0		60	nA
Collector cut-off current	I_{CEX}	V_{CE}=30V, $V_{BE(off)}$ =3V		50	nA
DC current gain	$h_{FE(1)}$	V_{CE}=1V, I_C=0.1mA	40		
	$h_{FE(2)}$	V_{CE}=1V, I_C=1mA	70		
	$h_{FE(3)}$	V_{CE}=1V, I_C=10mA	100	300	
	$h_{FE(4)}$	V_{CE}=1V, I_C=50mA	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA		0.25	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=50mA, I_B=5mA		0.3	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA, I_B=1mA		0.85	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C=50mA, I_B=5mA		0.95	V
Output capacitance	C_{ob}	V_{CB}=5V, f=1MHz		4	pF
Input capacitance	C_{ib}	V_{EB}=5V, f=1MHz		8	pF
Transition frequency	f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		MHz
Delay time	t_d	V_{CE}=3V, $V_{BE(off)}$=0.5V		35	nS
Rise time	t_r	I_C=10mA, I_{B1}=1mA		35	nS
Storage time	t_s	V_{CE}=3V, I_C=10mA		225	nS
Fall time	t_f	I_{B1}=I_{B2}=1mA		75	nS

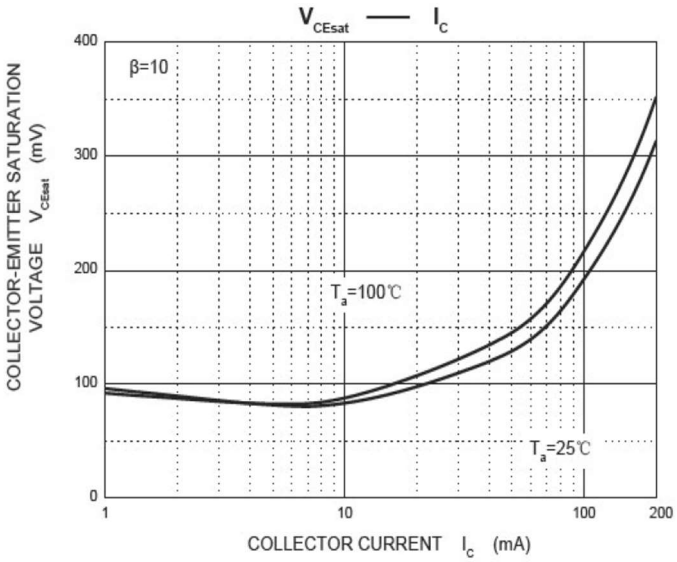
Pulse test: pulse width≤300us, duty cycle≤2.0%

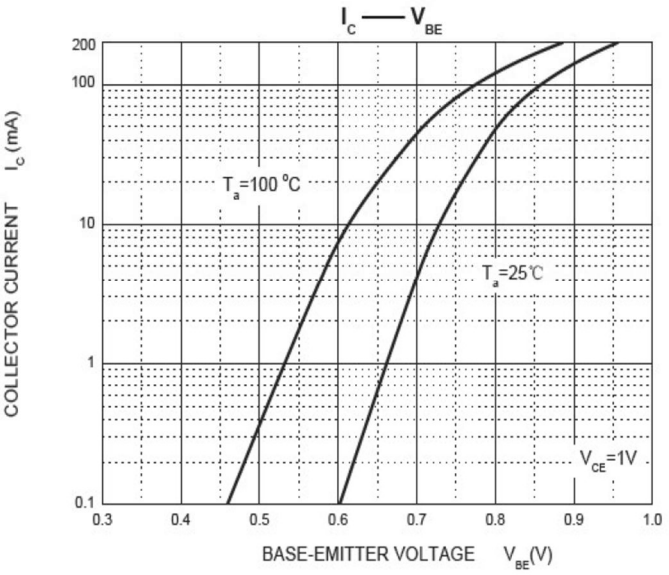
Typical Characteristics

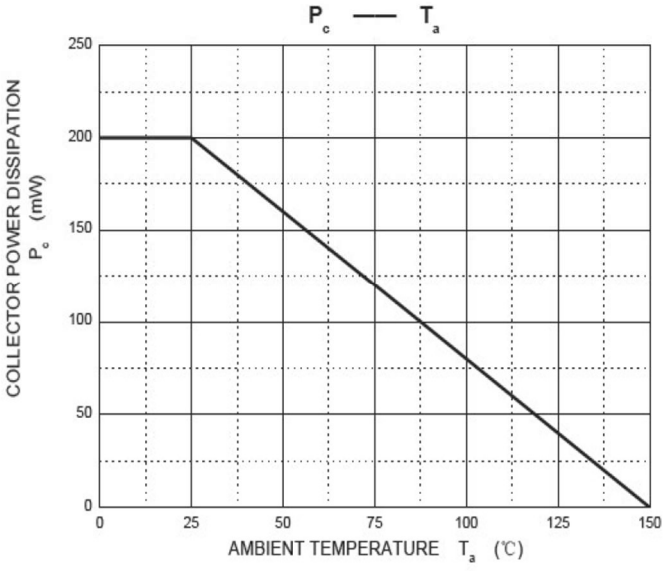




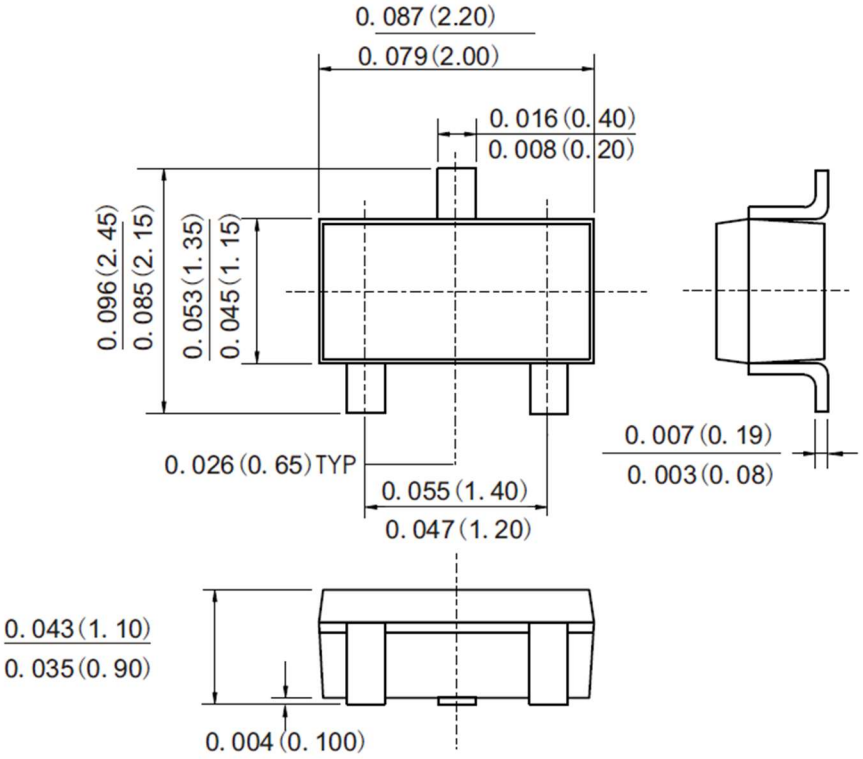






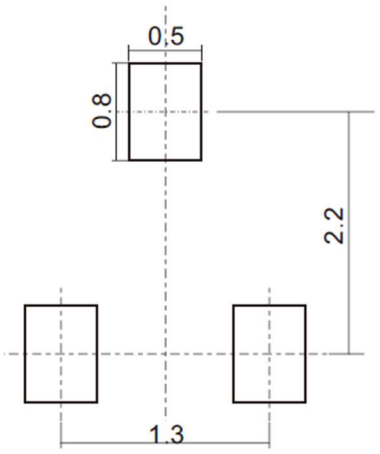


Package Outline Dimensions (Units: mm) SOT-323



Dimensions in inches and (millimetrers)

Suggested pad layout



Dimensions in millimetrers