

SOT-323 Plastic-Encapsulate Transistors

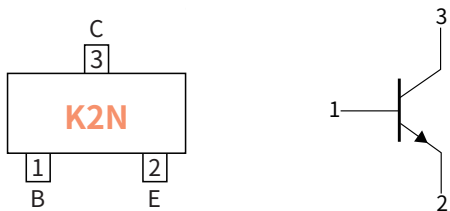
Features

- Complementary to MMST3906
- Power dissipation of 200mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Mechanical Data

- Case: SOT-323
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

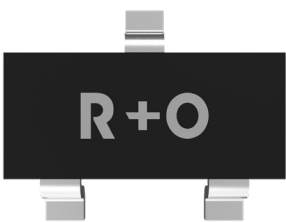
Function Diagram



Collector-Base Voltage
VCBO 60V

Collector Current
0.2 Ampere

SOT-323



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V_{CBO}	V	60
Collector-Emitter Voltage	V_{CEO}		40
Emitter-Base Voltage	V_{EBO}		5.0
Collector Current	I_C	A	0.2
Collector Power Dissipation	P_C	mW	200
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	625

Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=10mA, V_{CE}=20V, f=100MHz$	MHz	300	—

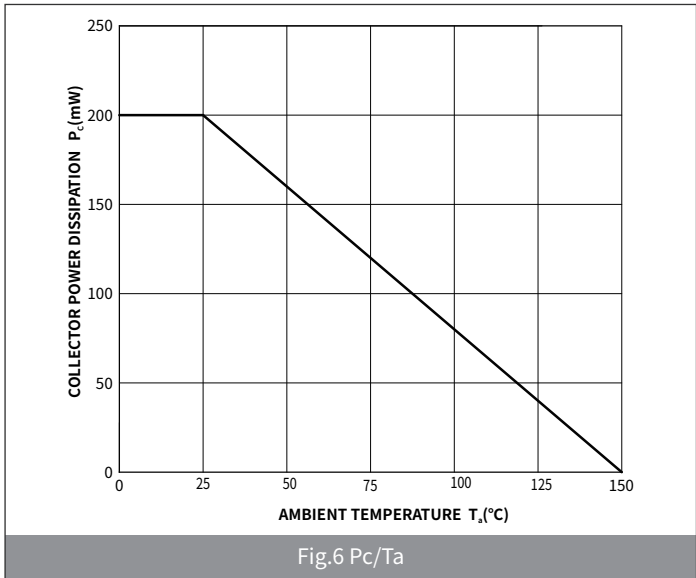
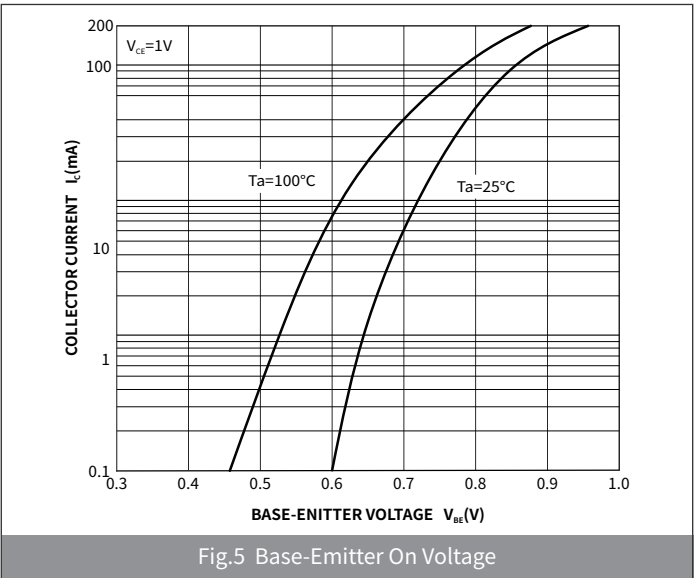
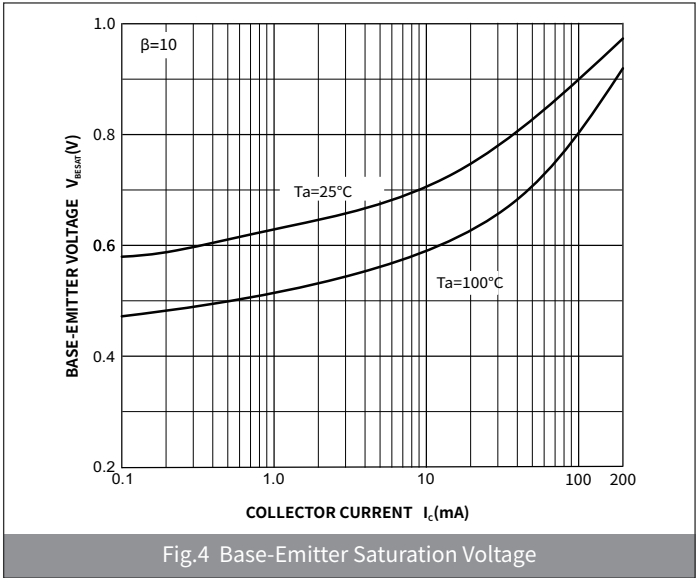
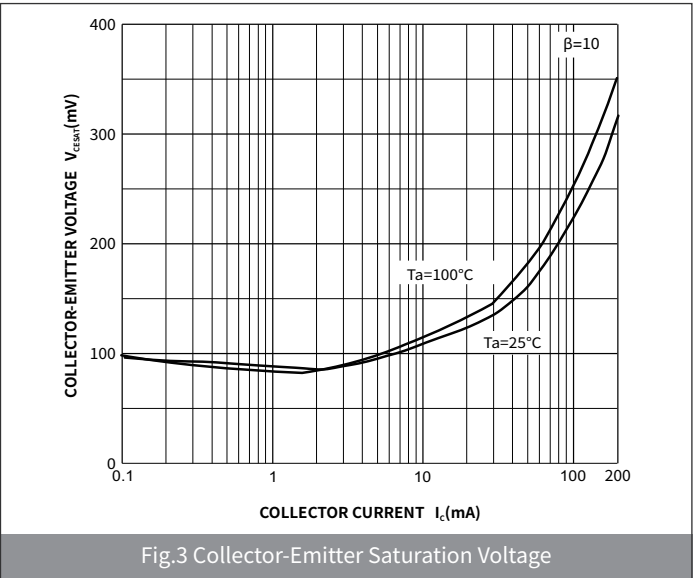
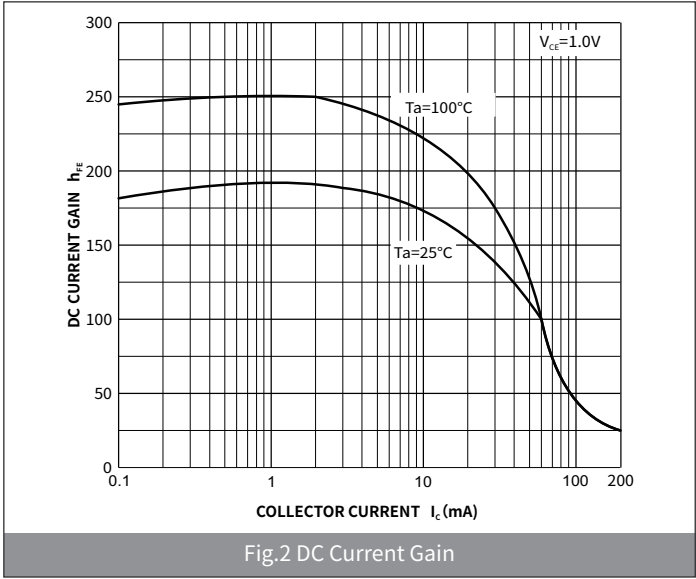
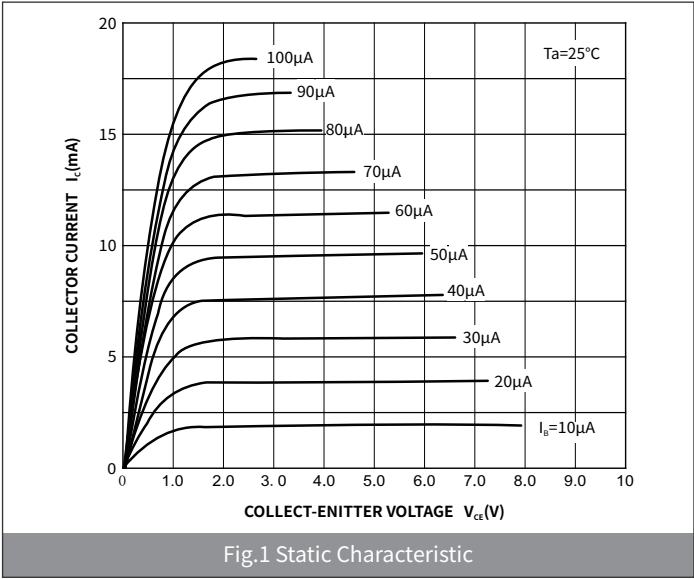
Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-323	R1	0.008	3000	45000	180000	7"

● **Electrical Characteristics** (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=10\mu A, I_E=0$	60	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=1.0mA, I_B=0$	40	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=10\mu A, I_C=0$	5.0	—
Collector-Emitter cut-off current	I_{CEO}	nA	$V_{CE}=40V, I_B=0$	—	500
Collector-Base cut-off current	I_{CBO}		$V_{CB}=60V, I_E=0$	—	60
Collector cut-off current	I_{CEX}		$V_{EB}=3.0V, V_{CE}=30V$	—	50
DC Current Gain	$h_{FE(1)}$	—	$I_C=0.1mA, V_{CE}=1.0V$	40	—
	$h_{FE(2)}$		$I_C=1.0mA, V_{CE}=1.0V$	70	—
	$h_{FE(3)}$		$I_C=10mA, V_{CE}=1.0V$	100	300
	$h_{FE(4)}$		$I_C=50mA, V_{CE}=1.0V$	60	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	V	$I_C=10mA, I_B=1.0mA$	—	0.25
	$V_{CE(sat)2}$		$I_C=50mA, I_B=5.0mA$	—	0.3
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	V	$I_C=10mA, I_B=1.0mA$	—	0.85
	$V_{BE(sat)2}$		$I_C=50mA, I_B=5.0mA$	—	0.95
Collector output capacitance	C_{ob}	pF	$V_{CB}=5.0V, I_E=0, f=1.0MHz$	—	4.0
	C_{ib}		$V_{EB}=5.0V, I_E=0, f=1.0MHz$	—	8.0
Delay time	t_d	nS	$V_{CC}=3.0V, V_{BE(off)}=-0.5V$ $I_C=10mA, I_{B1}=1.0mA$	—	35
Rise time	t_r			—	35
Storage time	t_s		$V_{CC}=3.0V, I_C=10mA$ $I_{B1}=I_{B2}=1.0mA$	—	225
Fall time	t_f			—	75

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



● Package Outline Dimensions (SOT-323)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.043
A1	-	0.10	-	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.40	0.012	0.020
c	0.10	0.25	0.004	0.010
D	1.80	2.20	0.071	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.45	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.20	1.40	0.047	0.055
L	0.525REF		0.021REF	
L1	0.26	0.46	0.010	0.018
θ	-	8°	-	8°

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.65	0.75	0.026	0.030
K	0.85	0.95	0.033	0.037
M	2.15	2.25	0.083	0.087
N	1.25	1.35	0.049	0.053