MMBT5551

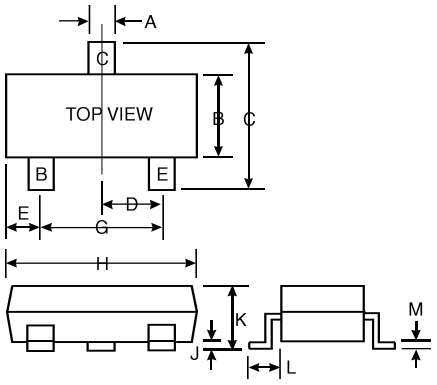
NPN SMALL SIGNAL SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (MMBT5401)
- Ideal for Medium Power Amplification and Switching

Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: K4N, 3S, 1F
- Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.65	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.178
All Dimensions in mm		

Maximum Ratings

@ T_A = 25 C unless otherwise specified

Characteristic	Symbol	MMBT5551	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous (Note 1)	I_C	200	mA
Power Dissipation (Note 1)	P_d	350	mW
Thermal Resistance, Junction to Ambient (Note 1)	R_{JA}	357	K/W
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +150	C

Notes: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width 300 s, duty cycle 2%.

Electrical Characteristics @ T_A = 25 C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	180		V	I_C = 100 A, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	160		V	I_C = 1.0mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6.0		V	I_E = 10 A, I_C = 0
Collector Cutoff Current	I_{CBO}		50	nA A	V_{CB} = 120V, I_E = 0 V_{CB} = 120V, I_E = 0, T_A = 100 C
Emitter Cutoff Current	I_{EBO}		50	nA	V_{EB} = 4.0V, I_C = 0
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h_{FE}	80 80 30	250		I_C = 1.0mA, V_{CE} = 5.0V I_C = 10mA, V_{CE} = 5.0V I_C = 50mA, V_{CE} = 5.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		0.15 0.20	V	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA
Base- Emitter Saturation Voltage	$V_{BE(SAT)}$		1.0	V	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}		6.0	pF	V_{CB} = 10V, f = 1.0MHz, I_E = 0
Small Signal Current Gain	h_{fe}	50	250		V_{CE} = 10V, I_C = 1.0mA, f = 1.0kHz
Current Gain-Bandwidth Product	f_T	100	300	MHz	V_{CE} = 10V, I_C = 10mA, f = 100MHz
Noise Figure	NF		8.0	dB	V_{CE} = 5.0V, I_C = 200 A, R_S = 1.0k f = 1.0kHz

Notes: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width 300 s, duty cycle 2%.