

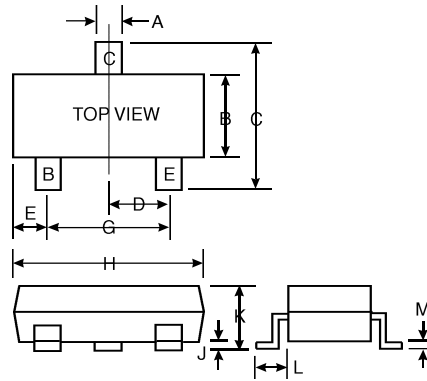


Features

Epitaxial Planar Die Construction
Complementary NPN Type Available (MMBT5551)
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: K4M, 2L
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	MMBT5401	Unit
Collector-Base Voltage	V _{CB0}	-160	V
Collector-Emitter Voltage	V _{CE0}	-150	V
Emitter-Base Voltage	V _{EB0}	-5.0	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 @ $T_A = 25\text{ C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-160		V	$I_C = -100\text{ A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-150		V	$I_C = -1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5.0		V	$I_E = -10\text{ A}, I_C = 0$
Collector Cutoff Current	I_{CBO}		-50	nA A	$V_{CB} = -120\text{V}, I_E = 0$ $V_{CB} = -120\text{V}, I_E = 0, T_A = 100\text{ C}$
Emitter Cutoff Current	I_{EBO}		-50	nA	$V_{EB} = -3.0\text{V}, I_C = 0$
ON CHARACTERISTICS (Note 2)					
DC Current Gain	h_{FE}	50 60 50	240		$I_C = -1.0\text{mA}, V_{CE} = -5.0\text{V}$ $I_C = -10\text{mA}, V_{CE} = -5.0\text{V}$ $I_C = -50\text{mA}, V_{CE} = -5.0\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		-0.2 -0.5	V	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$
Base- Emitter Saturation Voltage	$V_{BE(SAT)}$		-1.0	V	$I_C = -10\text{mA}, I_B = -1.0\text{mA}$ $I_C = -50\text{mA}, I_B = -5.0\text{mA}$
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{obo}		6.0	pF	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}, I_E = 0$
Small Signal Current Gain	h_{fe}	40	200		$V_{CE} = -10\text{V}, I_C = -1.0\text{mA},$ $f = 1.0\text{kHz}$
Current Gain-Bandwidth Product	f_T	100	300	MHz	$V_{CE} = -10\text{V}, I_C = -10\text{mA},$ $f = 100\text{MHz}$
Noise Figure	NF		8.0	dB	$V_{CE} = -5.0\text{V}, I_C = -200\text{ A},$ $R_S = 10\text{ }\Omega, f = 1.0\text{kHz}$

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