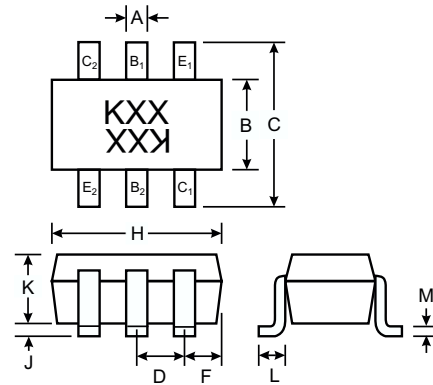


Features

- Epitaxial Planar Die Construction
- Complementary NPN Type Available (MMDT 5551)
- Ideal for Medium Power Amplification and Switching
- Ultra-Small Surface Mount Package

Mechanical Data

- Case: SOT-363, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: K4M
- Weight: 0.006 grams (approx.)



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
All Dimensions in mm		

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	MMDT5401	Unit
Collector-Base Voltage	V_{CBO}	-160	V
Collector-Emitter Voltage	V_{CEO}	-150	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous (Note 1)	I_C	-200	mA
Power Dissipation (Note 1, 2)	P_d	200	mW
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	625	K/W
Operating and Storage and Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. Valid provided that terminals are kept at ambient temperature.
 2. Maximum combined dissipation.

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 3)					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-160	—	V	$I_C = -100\mu\text{A}, I_E = 0$
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	$I_E = -10\mu\text{A}, I_C = 0$
Collector Cutoff Current	I_{CBO}	—	-50	nA μA	$V_{CB} = -120\text{V}, I_E = 0$ $V_{CB} = -120\text{V}, I_E = 0, T_A = 100^\circ\text{C}$
Emitter Cutoff Current	I_{EBO}	—	-50	nA	$V_{EB} = -3.0\text{V}, I_C = 0$
ON CHARACTERISTICS (Note 3)					
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	$V_{CE} = -5.0\text{V}, I_C = -200\mu\text{A},$ $R_S = 10\Omega, f = 1.0\text{kHz}$

Notes: 3. Pulse test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.