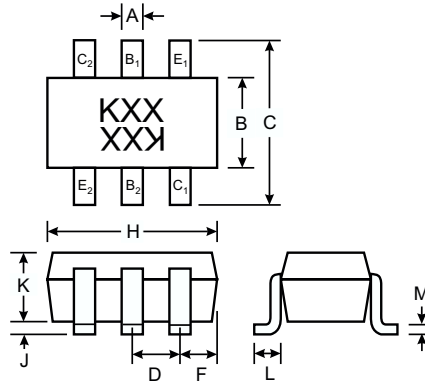


### Features

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (MMDT5401)
- 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: K4N
- 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	MMDT5551	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, 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
<b>OFF CHARACTERISTICS (Note 3)</b>					
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	180	—	V	$I_C = 100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	160	—	V	$I_C = 1.0\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6.0	—	V	$I_E = 10\mu\text{A}, I_C = 0$
Collector Cutoff Current	$I_{CBO}$	—	50	nA $\mu\text{A}$	$V_{CB} = 120\text{V}, I_E = 0$ $V_{CB} = 120\text{V}, I_E = 0, T_A = 100^\circ\text{C}$
Emitter Cutoff Current	$I_{EBO}$	—	50	nA	$V_{EB} = 4.0\text{V}, I_C = 0$
<b>ON CHARACTERISTICS (Note 3)</b>					
DC Current Gain	$h_{FE}$	80 80 30	— 250 —	—	$I_C = 1.0\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 50\text{mA}, V_{CE} = 5.0\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	0.15 0.20	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	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$ $I_C = 50\text{mA}, I_B = 5.0\text{mA}$
<b>SMALL SIGNAL CHARACTERISTICS</b>					
Output Capacitance	$C_{obo}$	—	6.0	pF	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}, I_E = 0$
Small Signal Current Gain	$h_{fe}$	50	250	—	$V_{CE} = 10\text{V}, I_C = 1.0\text{mA},$ $f = 1.0\text{kHz}$
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	$V_{CE} = 5.0\text{V}, I_C = 200\mu\text{A},$ $R_S = 1.0\text{k}\Omega, f = 1.0\text{kHz}$

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