



Micro Commercial Components
 130 W Cochran St, Unit B
 Simi Valley, CA 93065
 Tel:818-701-4933

MMDT5451

NPN/PNP Plastic-Encapsulate Transistors

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- One 5551-Type NPN ,One 5401-Type PNP
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:KNM
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings @ 25°C Unless Otherwise Specified

NPN 5551 Section

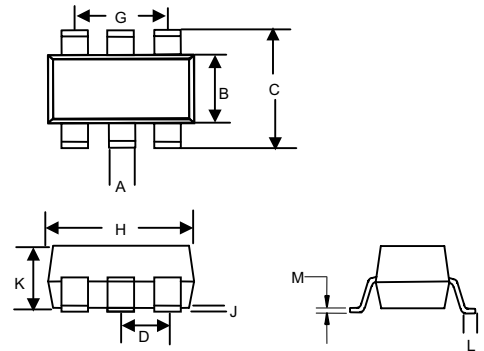
Symbol	Parameter	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	160	V
V_{CBO}	Collector-Base Voltage	180	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	0.2	A
P_C	Collector Dissipation	0.2	W
RthJA	Thermal Resistance Junction to Ambient Air	625	W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Electrical Characteristics @ 25°C Unless Otherwise Specified

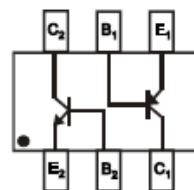
NPN 5551 Section

Symbol	Parameter	Min	Max	Units
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=1\text{mAdc}$, $I_B=0$)	160	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu\text{Adc}$, $I_E=0$)	180	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage ($I_E=10\mu\text{Adc}$, $I_C=0$)	6	---	Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=120\text{Vdc}$, $I_E=0$)	---	0.05	μAdc
I_{EBO}	Emitter Cutoff Current ($V_{EB}=4\text{Vdc}$, $I_C=0$)	---	0.05	μAdc
h_{FE}	DC Current Gain ($I_C=1\text{mAdc}$, $V_{CE}=5\text{Vdc}$)	80	---	
	($I_C=10\text{mAdc}$, $V_{CE}=5\text{Vdc}$)	100	300	
	($I_C=50\text{mAdc}$, $V_{CE}=5\text{Vdc}$)	30	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=10\text{mAdc}$, $I_B=1\text{mAdc}$) ($I_C=50\text{mAdc}$, $I_B=5\text{mAdc}$)	---	0.15 0.2	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=10\text{mAdc}$, $I_B=1\text{mAdc}$) ($I_C=50\text{mAdc}$, $I_B=5\text{mAdc}$)	---	1.0 1.0	Vdc
f_T	Current Gain-Bandwidth Product ($V_{CE}=10\text{Vdc}$, $I_C=10\text{mAdc}$, $f=100\text{MHz}$)	100	300	MHz
C_{obo}	Output Capacitance ($V_{CB}=10\text{Vdc}$, $f=1\text{MHz}$, $I_E=0$)	---	6.0	pF
NF	Noise Figure ($V_{CE}=5\text{V}$, $I_C=200\mu\text{A}$, $R_S=1\text{Kohm}$, $f=1\text{KHz}$)	---	8.0	dB

SOT-363



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.006	0.014	0.15	0.35	
B	0.045	0.053	1.15	1.35	
C	0.079	0.096	2.00	2.45	
D	0.026 Nominal		0.65 Nominal		
G	0.047	0.055	1.20	1.40	
H	0.071	0.087	1.80	2.20	
J	---	0.004	---	0.10	
K	0.035	0.043	0.90	1.10	
L	0.010	0.018	0.26	0.46	
M	0.003	0.006	0.08	0.15	



E1, B1, C1 = PNP 5401
 E2, B2, C2 = NPN 5551

Maximum Ratings @ 25°C Unless Otherwise Specified

PNP 5401 Section

Symbol	Parameter	Rating	Unit
V_{CE0}	Collector-Emitter Voltage	-150	V
V_{CBO}	Collector-Base Voltage	-160	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-0.2	A
P_C	Collector Dissipation	0.2	W
RthJA	Thermal Resistance Junction to Ambient Air	625	W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Electrical Characteristics @ 25°C Unless Otherwise Specified

PNP 5401 Section

Symbol	Parameter	Min	Max	Units
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=-1\text{mA dc}$, $I_B=0$)	-150	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=-100\mu\text{A dc}$, $I_E=0$)	-160	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage ($I_E=-10\mu\text{A dc}$, $I_C=0$)	-5	---	Vdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=-120\text{Vdc}$, $I_E=0$)	---	-50	nA dc
I_{EBO}	Emitter Cutoff Current ($V_{EB}=-3\text{Vdc}$, $I_C=0$)	---	-50	nA dc
h_{FE}	DC Current Gain ($I_C=-1\text{mA dc}$, $V_{CE}=-5\text{Vdc}$) ($I_C=-10\text{mA dc}$, $V_{CE}=-5\text{Vdc}$) ($I_C=-50\text{mA dc}$, $V_{CE}=-5\text{Vdc}$)	50 100 50	--- 300 ---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=-10\text{mA dc}$, $I_B=-1\text{mA dc}$) ($I_C=-50\text{mA dc}$, $I_B=-5\text{mA dc}$)	--- ---	-0.2 -0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=-10\text{mA dc}$, $I_B=-1\text{mA dc}$) ($I_C=-50\text{mA dc}$, $I_B=-5\text{mA dc}$)	--- ---	-1.0 -1.0	Vdc
f_T	Current Gain-Bandwidth Product ($V_{CE}=-10\text{Vdc}$, $I_C=-10\text{mA dc}$, $f=100\text{MHz}$)	100	300	MHz
C_{obo}	Output Capacitance ($V_{CB}=-10\text{Vdc}$, $f=1\text{MHz}$, $I_E=0$)	---	6.0	pF
NF	Noise Figure ($V_{CE}=-5\text{V}$, $I_C=-200\mu\text{A}$, $R_S=10\text{ohm}$, $f=1\text{KHz}$)	---	8.0	dB



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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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