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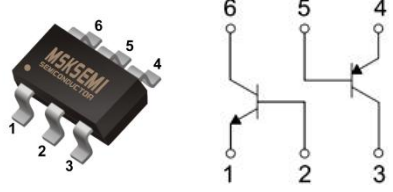

MMDT5451

Product specification

FEATURES

- Epitaxial Planar Die Construction
- Ideal for low Power Amplification and Switching
- One 5551(NPN), one 5401(PNP)

Reference News

PACKAGE OUTLINE	MARKING
 <p>SOD-123</p>	

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CB0}	collector- Base Voltage	180	V
V _{CE0}	collector-Emitter Voltage	160	V
V _{EB0}	Emitter-Base Voltage	6	V
I _c	collector current -continuous	0.2	A
P _c	collector Power Dissipation	0.2	W
R _{θJA}	Thermal Resistance, Junction to Ambient	625	τ / w
T _J , T _{stg}	operation Junction and storage Temperature Range	-55~+150	τ

ELECTRICAL CHARACTERISTICS NPN 5551 (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown Voltage	V _{(BR)CB0}	I _c =100μA, I _E =0	180			V
Collector-emitter breakdown Voltage	V _{(BR)CE0}	I _c =1 mA, I _B =0	160			V
Emitter-base breakdown Voltage	V _{(BR)EB0}	I _E =10μA, I _c =0	6			V
Collector cut-off current	I _{cBO}	V _{CB} =120V, I _E =0			0.05	μA
Emitter cut-off current	I _{EB0}	V _{EB} =4V, I _c =0			0.05	μA
DC current gain	h _{FE1}	V _{CE} =5V, I _c =1 mA	80			
	h _{FE2}	V _{CE} =5V, I _c =10 mA	100		300	
	h _{FE3}	V _{CE} =5V, I _c =50 mA	30			
Collector-emitter saturation Voltage	V _{CE(sat)}	I _c =10 mA, I _B =1 mA			0.15	V
		I _c =50 mA, I _B =5 mA			0.2	V
Base-emitter saturation Voltage	V _{BE(sat)}	I _c =10 mA, I _B =1 mA			1	V
		I _c =50 mA, I _B =5 mA			1	V
Output Capacitance	C _{obo}	V _{CB} = 10V, f = 1.0MHz, I _E = 0			6.0	pF
Current Gain-Bandwidth Product	f _T	V _{CE} = 10V, I _c = 10mA, f = 100MHz	100		300	MHz
Noise Figure	NF	V _{CE} = 5.0V, I _c = 200μA, R _S = 1.0KΩ, f = 1.0KHz			8.0	dB

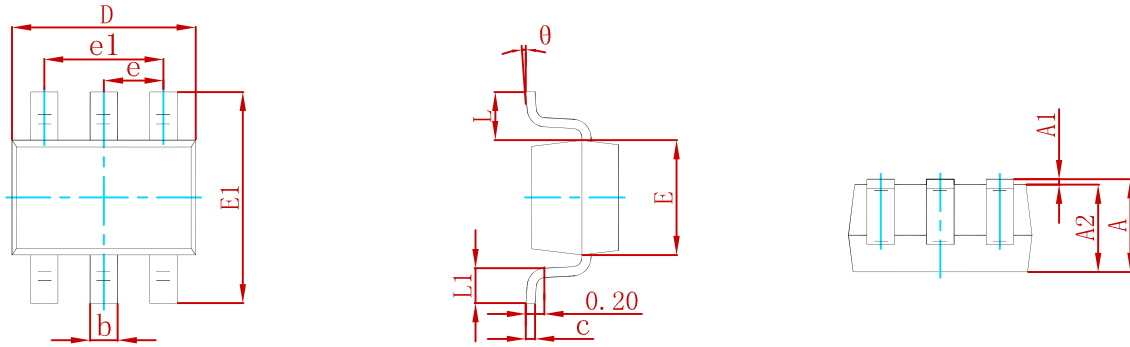
MAXIMUM RATINGS PNP 5401 (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	units
V _{CBO}	collector- Base Voltage	-160	V
V _{CEO}	collector-Emitter Voltage	-150	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _c	collector current -continuous	-0.2	A
P _c	collector power Dissipation	0.2	W
R _{JA}	Thermal Resistance, Junction to Ambient	625	τ / W
T _J , T _{stg}	operation Junction and storage Temperature Range	-55~+150	τ

ELECTRICAL CHARACTERISTICS PNP 5401 (Ta=25°C unless otherwise specified)

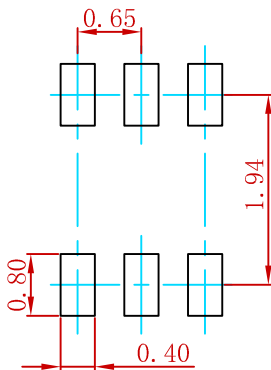
Parameter	Symbol	Test conditions	Min	Typ	Max	unit
Collector-base breakdown Voltage	V _{(BR)CBO}	I _c =-100μA, I _E =0	-160			V
Collector-emitter breakdown Voltage	V _{(BR)CEO}	I _c =-1mA, I _B =0	-150			V
Emitter-base breakdown Voltage	V _{(BR)EBO}	I _E =-10μA, I _c =0	-5			V
Collector cut-off current	I _{cBO}	V _{CB} =-120V, I _E =0			-50	nA
Emitter cut-off current	I _{EBO}	V _{EB} =-3V, I _c =0			-50	nA
DC current gain	h _{FE1}	V _{CE} =-5V, I _c =-1mA	50			
	h _{FE2}	V _{CE} =-5V, I _c =-10mA	100		300	
	h _{FE3}	V _{CE} =-5V, I _c =-50mA	50			
Collector-emitter saturation Voltage	V _{CE(sat)}	I _c =-10mA, I _B =-1mA			-0.2	V
		I _c =-50mA, I _B =-5mA			-0.5	V
Base-emitter saturation Voltage	V _{BE(sat)}	I _c =-10mA, I _B =-1mA			-1	V
		I _c =-50mA, I _B =-5mA			-1	V
Output Capacitance	C _{obo}	V _{CB} = -10V, f = 1.0MHz, I _E = 0			6.0	PF
Current Gain-Bandwidth Product	f _T	V _{CE} = -10V, I _c = -10mA, f = 100MHz	100		300	MHz
Noise Figure	NF	V _{CE} =-5.0V, I _c = -200μA, R _s = 10Ω, f = 1.0KHz			8.0	dB

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
MMDT5451	SOT-363	3000

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