

Plastic-Encapsulate Transistors

DUAL TRANSISTOR (NPN+PNP)

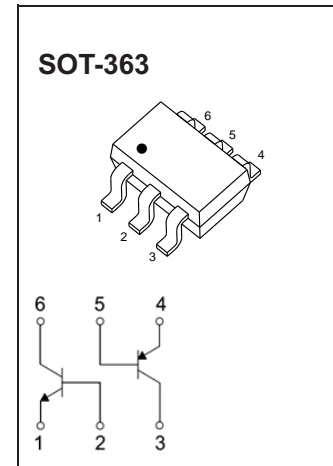
FEATURES

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

MRKING:KNM

MAXIMUM RATINGS NPN 5551 ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector- Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	625	$^{\circ}\text{C}/\text{W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS NPN 5551 ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	180			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	160			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0$			0.05	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			0.05	μA
DC current gain	h_{FE1}	$V_{CE}=5\text{V}, I_C=1\text{mA}$	80			
	h_{FE2}	$V_{CE}=5\text{V}, I_C=10\text{mA}$	100		300	
	h_{FE3}	$V_{CE}=5\text{V}, I_C=50\text{mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.15	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			1	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			1	V
Output Capacitance	C_{obo}	$V_{CB}=10\text{V}, f=1.0\text{MHz}, I_E=0$			6.0	pF
Current Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100		300	MHz
Noise Figure	NF	$V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=1.0\text{k}\Omega, f=1.0\text{kHz}$			8.0	dB

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

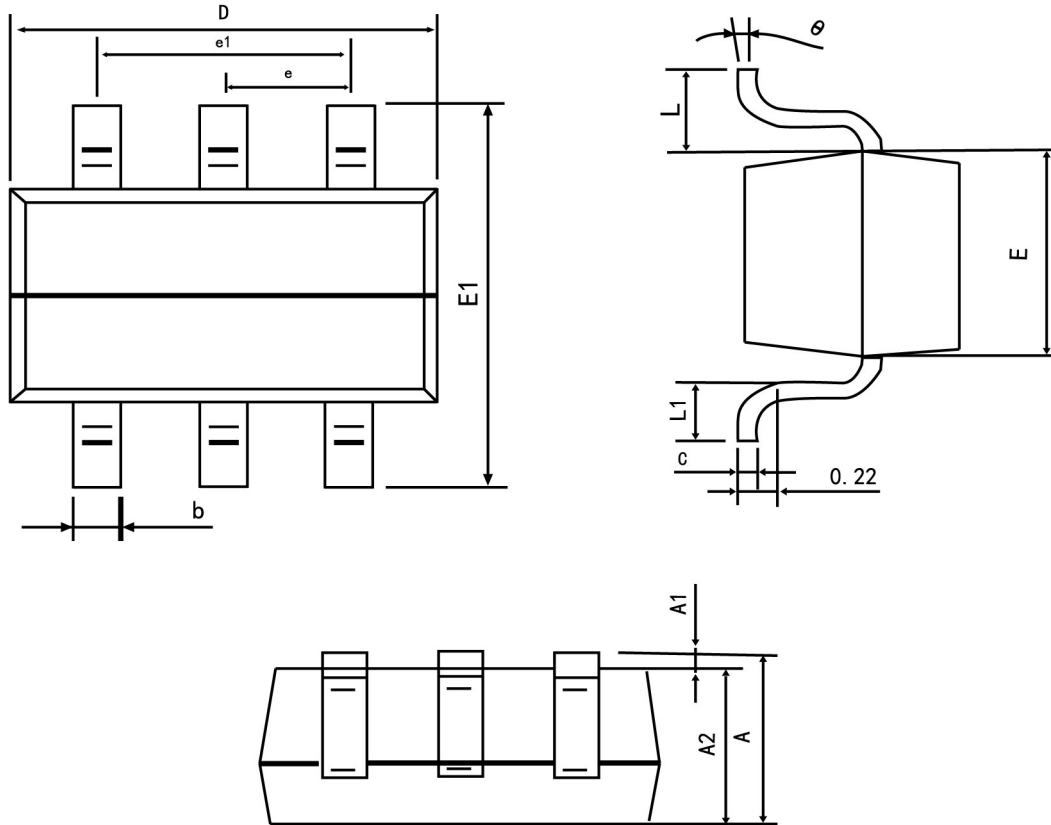
Symbol	Parameter	Value	Units
V _{CBO}	Collector- Base Voltage	-160	V
V _{CEO}	Collector-Emitter Voltage	-150	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current -Continuous	-0.2	A
P _C	Collector Power Dissipation	0.2	W
R _{θJA}	Thermal Resistance, Junction to Ambient	625	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS PNP 5401 (T_a=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 = 10 Ω, f = 1.0kHz			8.0	dB



SOT-363-Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°