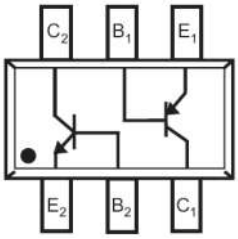
Small Surface Mount Transistor MMDT5451

FEATURES

- Complementary pair.
- Ideal for low power amplification and switching.
- Ultra-Small surface mount package.
- Epitaxial planar die construction.

Lead-free



SOT-363

APPLICATIONS

- General switching and amplification.

ORDERING INFORMATION

Type No.	Marking	Package Code
MMDT5451	KNM	SOT-363

MAXIMUM RATING NPN 5551 Section @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Unit
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	200	mA
P_D	Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	625	℃/W
T_j, T_{stg}	Junction and Storage Temperature	-55 to +150	℃

MAXIMUM RATING PNP 5401 Section @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Unit
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	-200	mA
P_D	Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	625	℃/W
T_j, T_{stg}	Junction and Storage Temperature	-55 to +150	℃

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ELECTRICAL CHARACTERISTICS NPN 5551 Section @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA I_E=0	180	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA I_B=0	160	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA I_C=0	6	-	V
Collector cut-off current	I_{CBO}	V_{CB}=120V I_E=0 V_{CB}=120V I_E=0，T_A=100℃	-	50	nA uA
Emitter cut-off current	I_{EBO}	V_{EB}=4V I_C=0	-	50	nA
DC current gain	h_{FE}	V_{CE}=5V I_C=1.0mA	80	-	-
		V_{CE}=5V I_C=10mA	80	250	
		V_{CE}=5V I_C=50mA	30	-	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA I_B=1mA I_C=50mA I_B=5mA	-	0.15 0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA I_B=1mA I_C=50mA I_B=5mA	- -	1 1	V
Transition frequency	f_T	V_{CE}=10V I_C=10mA f=100MHz	100	300	MHz
Output Capacitance	C_{obo}	V_{CB}=10V,f=1.0MHz,I_E=0	-	6	pF
Noise Figure	NF	V_{CE}=5V,f=1.0kHz,I_C=200μA R_g=1.0kΩ	-	8.0	dB

ELECTRICAL CHARACTERISTICS PNP 5401 Section @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	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=-1.0mA 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 V_{CB}=-120V I_E=0 T_A=100℃	-	-50	nA μA
Emitter cut-off current	I_{EBO}	V_{EB}=-3V I_C=0	-	-50	nA
DC current gain	h_{FE}	V_{CE}=-5V I_C=-1.0mA	50	-	-
		V_{CE}=-5V I_C=-10mA	60	240	
		V_{CE}=-5V I_C=-50mA	50	-	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-10mA I_B=-1.0mA I_C=-50mA I_B=-5.0mA	-	-0.2 -0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-10mA I_B=-1.0mA I_C=-50mA I_B=-5.0mA	-	-1.0	V
Transition frequency	f_T	V_{CE}=-10V I_C=-10mA f=100MHz	100	300	MHz
Output Capacitance	C_{obo}	V_{CB}=-10V,f=1.0MHz,I_E=0	-	6	pF
Noise Figure	NF	V_{CE}=-5V I_C=-200μA f=1.0KHz	-	8.0	dB

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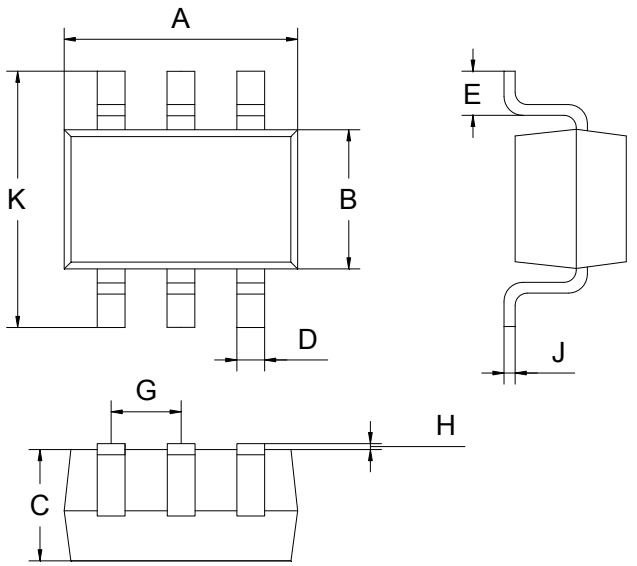
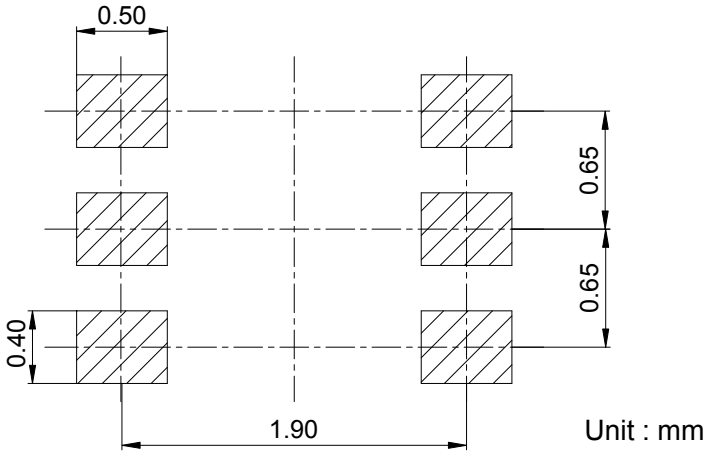
PACKAGE OUTLINE

Plastic surface mounted package SOT-363



SOT-363		
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.95 Typical	
D	0.25 Typical	
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.10 Typical	
K	2.2	2.4
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
MMDT5451	SOT-363	3000/Tape&Reel