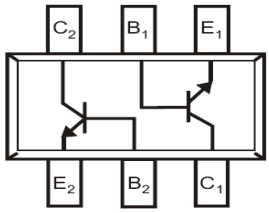
Dual NPN Small Signal Surface Mount Transistor MMDT2222A

FEATURES

- Epitaxial planar die construction.
- Complementary PNP type available MMDT2907A.
- Ultra-small surface mount package.

Pb
Lead-free



SOT-363

APPLICATIONS

- Dual NPN small signal surface mount transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
MMDT2222A	K1P	SOT-363

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	600	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 @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA I_E=0	75	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA I_B=0	40	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA I_C=0	6	-	V
Collector cut-off current	I_{CBO}	V_{CB}=60V I_E=0 V_{CB}=60V I_E=0 T_A=150℃	-	10	nA μA
Collector cut-off current	I_{CEX}	V_{CE}=60V $I_{EB(off)}$=3.0V	-	10	nA
Emitter cut-off current	I_{EBO}	V_{EB}=3V I_C=0	-	10	nA
Base Cut-off Current	I_{BL}	V_{CE}=60V $I_{EB(off)}$=3.0V	-	20	nA
DC current gain	h_{FE}	V_{CE}=10V I_C=100μA	35	-	-
		V_{CE}=10V I_C=1.0mA	50	-	
		V_{CE}=10V I_C=10mA	75	-	
		V_{CE}=10V I_C=150mA	100	300	
		V_{CE}=10V I_C=500mA	40	-	
		V_{CE}=10V I_C=10mA T_A=-55℃	50	-	
		V_{CE}=1.0V I_C=150mA	35	-	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=150mA I_B=15mA I_C=500mA I_B=50mA	-	0.3 1.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=150mA I_B=15mA I_C=500mA I_B=50mA	0.6 -	1.2 2.0	V
Transition frequency	f_T	V_{CE}=20V I_C=20mA f=100MHz	300		MHz
Output Capacitance	C_{obo}	V_{CB}=10V,f=1.0MHz,I_E=0	-	8	pF
Input Capacitance	C_{ibo}	V_{EB}=0.5V,f=1.0MHz,I_C=0	-	25	pF
Noise Figure	NF	V_{CE}=10V,f=1.0kHz,I_C=100μA R_S=1.0kΩ	-	4.0	dB
Delay time	t_d	V_{cc}=30V, $V_{BE(off)}$=-0.5V I_C=150mA , I_{B1}= 15mA		10	ns
Rise time	t_r			25	ns
Storage time	t_s	V_{CC}=30V, I_C=150mA I_{B1}=-I_{B2}=15mA		225	ns
Fall time	t_f			60	ns

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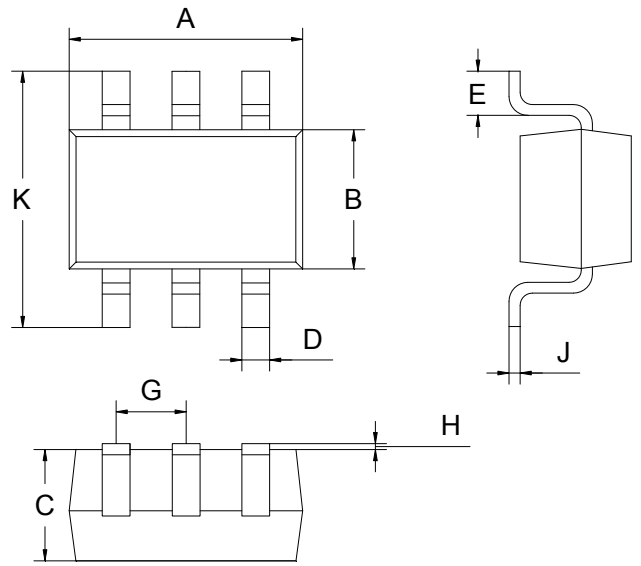
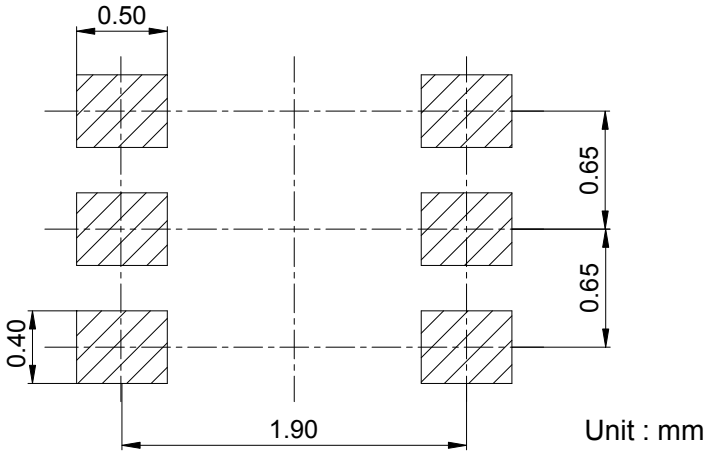
PACKAGE OUTLINE

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
MMDT2222A	SOT-363	3000/Tape&Reel