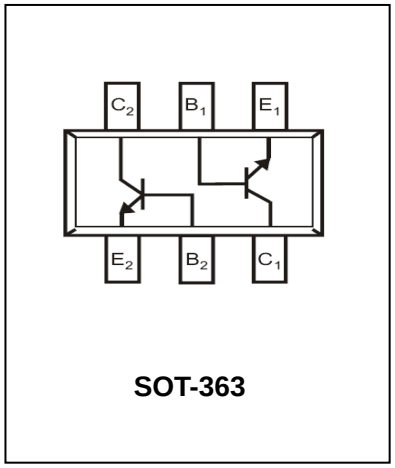
Dual NPN Small Signal Surface Mount Transistor MMDT4401

FEATURES

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

Lead-free



SOT-363

APPLICATIONS

- Dual NPN small signal surface mount transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
MMDT4401	K2X	SOT-363

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-Base Voltage	60	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=100μA I_E=0	60	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA I_B=0	40	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA I_C=0	6	-	V
Collector cut-off current	I_{CEX}	V_{CE}=35V,$V_{EB(OFF)}$=0.4V	-	0.1	μA
Base cut-off current	I_{BL}	V_{CE}=35V,$V_{EB(OFF)}$=0.4V	-	0.1	μA
DC current gain	h_{FE}	V_{CE}=1V I_C=0.1mA V_{CE}=1V I_C=1.0mA V_{CE}=1V I_C=10mA V_{CE}=1V I_C=150mA V_{CE}=2V I_C=500mA	20 40 80 100 40	- - - 300 -	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=150mA I_B=15mA I_C=500mA I_B=50mA	-	0.4 0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=150mA I_B=15mA I_C=500mA I_B=50mA	0.75 -	0.95 1.2	V
Transition frequency	f_T	V_{CE}=10V I_C=20mA f=1MHz	250		MHz
Output Capacitance	C_{obo}	V_{CB}=5V,f=1.0MHz,I_E=0	-	6.5	pF
Input Capacitance	C_{ibo}	V_{EB}=0.5V,f=1.0MHz,I_C=0	-	30	pF
Delay time	t_d	V_{CC}=30V, $V_{BE(off)}$=2V I_C=150mA , I_{B1}= 15mA		15	ns
Rise time	t_r			20	ns
Storage time	t_s	V_{CC}=30V, I_C=150mA I_{B1}=I_{B2}=15mA		225	ns
Fall time	t_f			30	ns

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TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

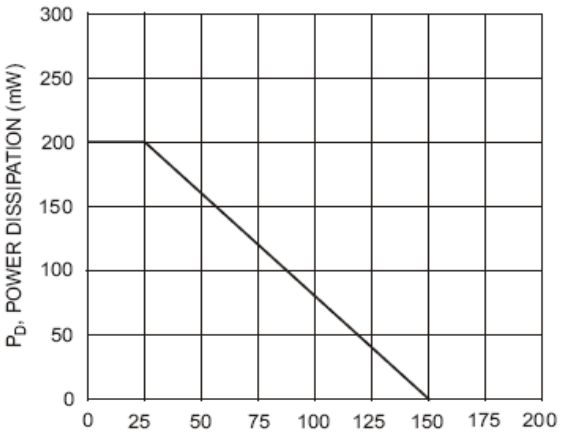


Fig. 1 Max Power Dissipation vs Ambient Temperature

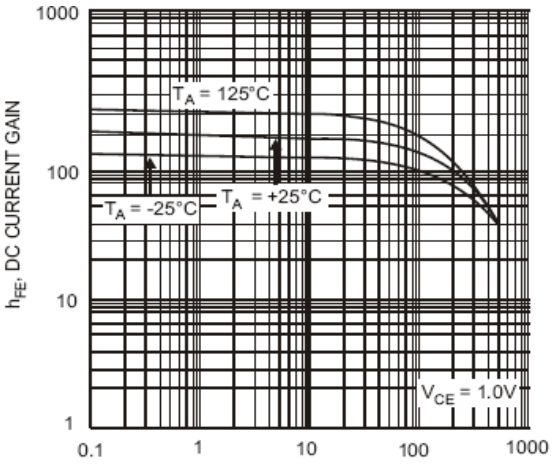


Fig. 2 Typical DC Current Gain vs Collector Current

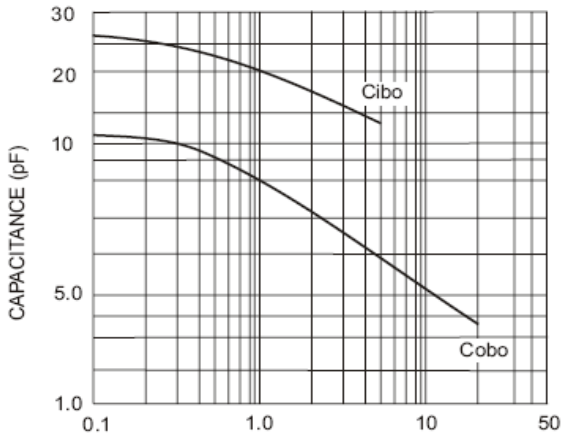


Fig. 3 Typical Capacitance

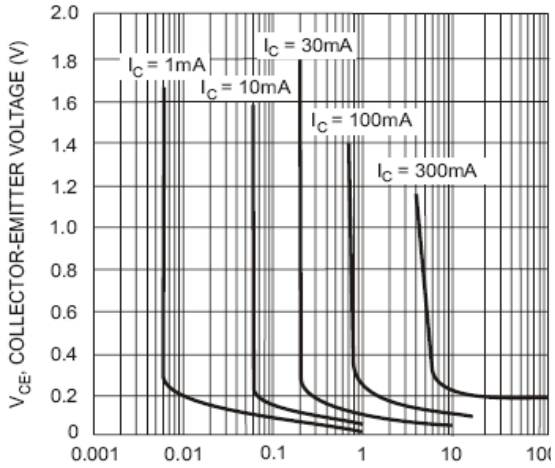


Fig. 4 Typical Collector Saturation Region

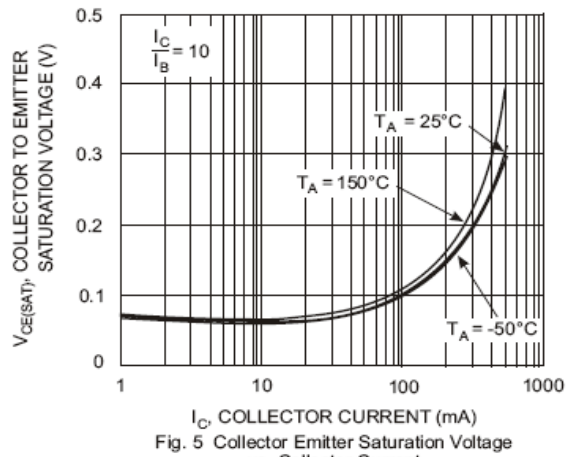


Fig. 5 Collector Emitter Saturation Voltage vs. Collector Current

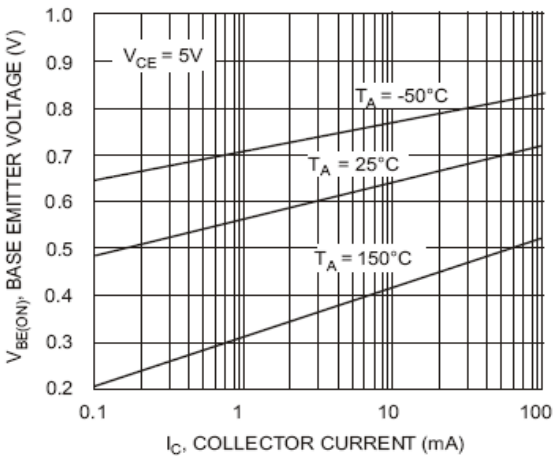
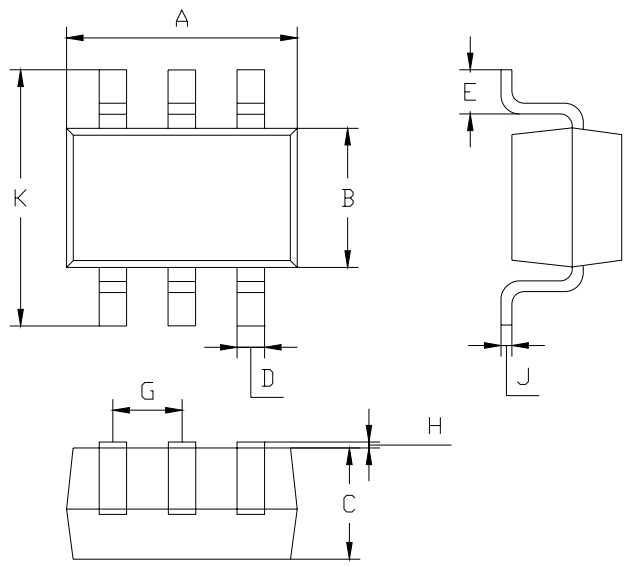


Fig. 6 Base Emitter Voltage vs. Collector Current

Dual NPN Small Signal Surface Mount Transistor MMDT4401

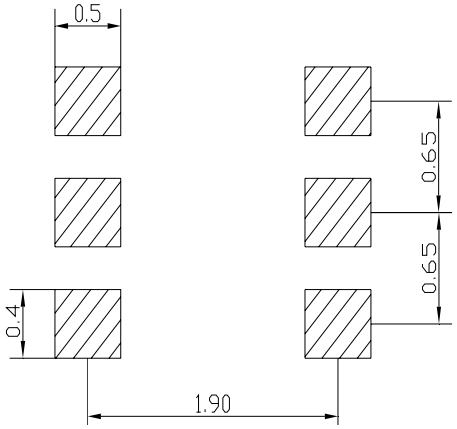
PACKAGE OUTLINE

Plastic surface mounted package SOT-363



SOT-363		
Dim	Min	Max
A	1.8	2.2
B	1.15	1.35
C	1.0Typical	
D	0.10	0.30
E	0.25	0.40
G	0.65Typical	
H	0.02	0.10
J	0.1Typical	
K	2.1	2.3
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
MMDT4401	SOT-363	3000/Tape&Reel