Micro Commercial Components

Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

MMDT4401

NPN Plastic-Encapsulate Transistors

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Ultra-Small Surface Mount Package
- Epitaxial Planar Die Construction
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Marking:K2X

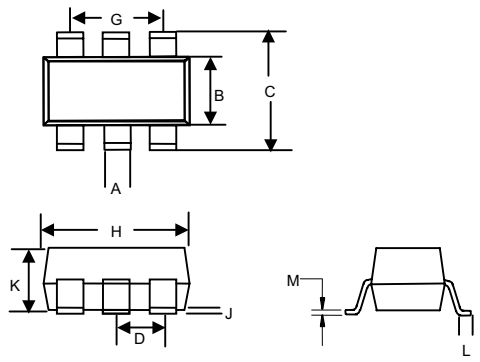
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Rating	Rating(NPN)	Unit
V_{CEO}	Collector-Emitter Voltage	40	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	0.6	A
P_C	Collector Dissipation	0.2	W
T_J	Operating Junction Temperature	-55 to +150	℃
T_{STG}	Storage Temperature	-55 to +150	℃

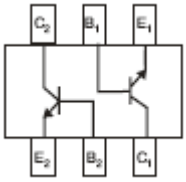
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter		Min	Max	Units
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C=1mAdc, I_B=0)		40	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=100uAdc, I_E=0)		60	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage (I_E=100uAdc, I_C=0)		6	---	Vdc
I_{CBO}	Collector Cutoff Current (V_{CB}=50Vdc,I_E=0)		---	0.1	uAdc
I_{EBO}	Emitter Cutoff Current (V_{EB}=-5Vdc,I_C=0)		---	0.1	uAdc
h_{FE}	DC Current Gain (I_C=0.1mAdc, V_{CE}=1Vdc) (I_C=1mAdc, V_{CE}=1Vdc) (I_C=10mAdc, V_{CE}=1Vdc) (I_C=150mAdc, V_{CE}=1Vdc) (I_C=500mAdc, V_{CE}=2Vdc)		 20 40 80 100 40	 --- --- ---- 300 ---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=150mAdc, I_B=15mAdc) (I_C=500mAdc, I_B=50mAdc)		 --- ---	 0.4 0.75	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=150mAdc, I_B=15mAdc) (I_C=500mAdc, I_B=50mAdc)		 0.75 ---	 0.95 1.2	Vdc
f_T	Current Gain-Bandwidth Product (V_{CE}=10.0Vdc, I_C=20mAdc, f=100MHz)		250	---	MHz
C_{ob}	Output Capacitance (V_{CB}=5Vdc, f=1.0MHz, I_E=0)		---	6.5	pF
t_d	Delay Time	V_{CC}=30V,I_C=150mA, V_{BE}=2.00V, I_{B1}=15.00mA	---	15	ns
t_r	Rise Time		---	20	ns
t_S	Storage Time	V_{CC}=30V, I_C=150mA, I_{B1}=-I_{B2}=15mA	---	225	ns
t_f	Fall Time		---	30	ns

SOT-363



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.006	.014	0.15	0.35	
B	.045	.053	1.15	1.35	
C	.085	.096	2.15	2.45	
D	.026		0.65Nominal		
G	.047	.055	1.20	1.40	
H	.071	.087	1.80	2.20	
J	---	.004	---	0.10	
K	.035	.043	0.90	1.10	
L	.010	.018	0.26	0.46	
M	.003	.006	0.08	0.15	



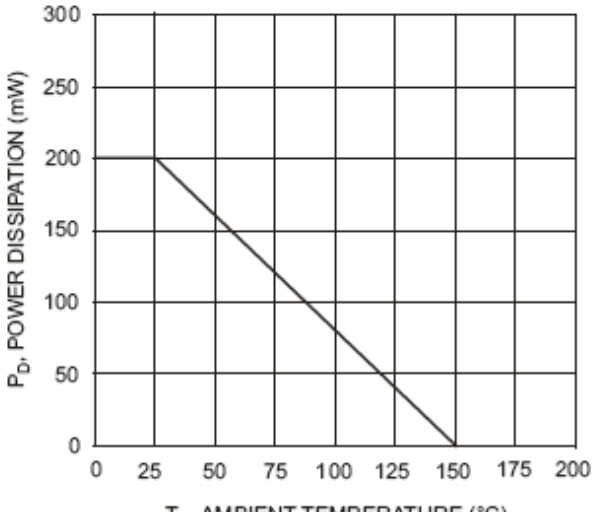


Fig. 1 Max Power Dissipation vs Ambient Temperature

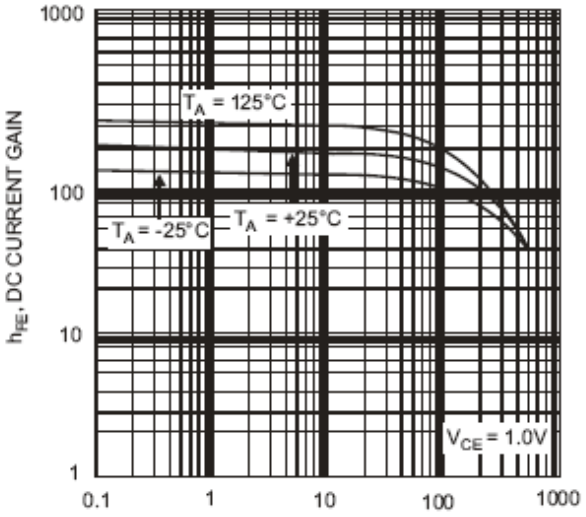


Fig. 2 Typical DC Current Gain vs Collector Current

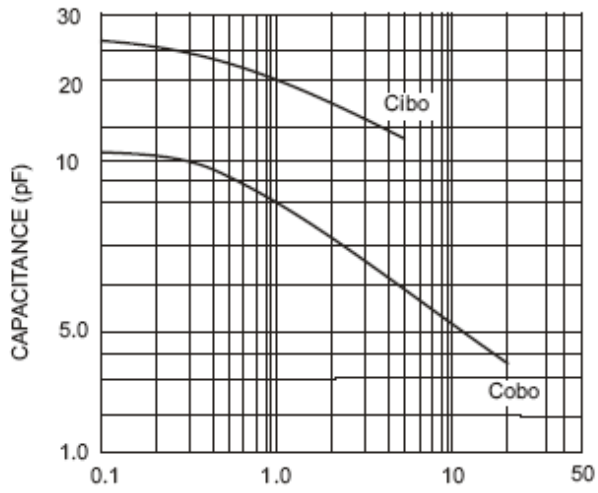


Fig. 3 Typical Capacitance

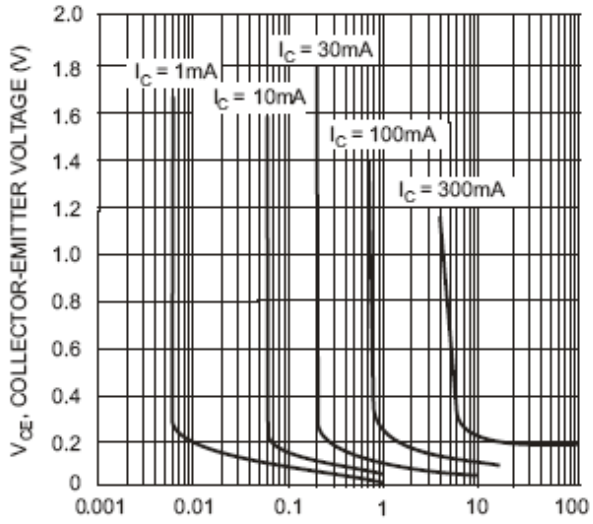


Fig. 4 Typical Collector Saturation Region

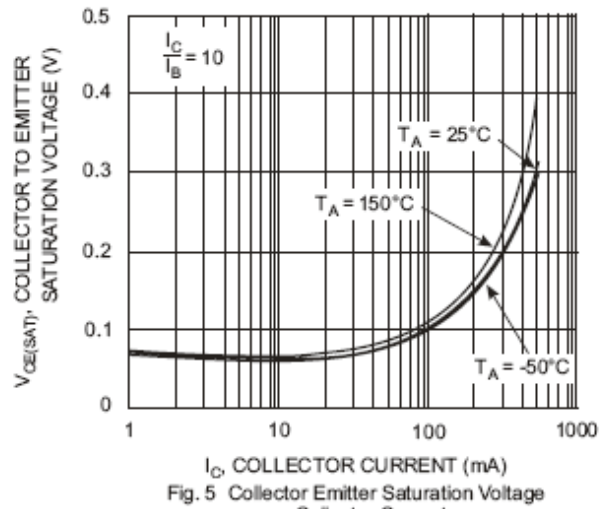


Fig. 5 Collector Emitter Saturation Voltage vs. Collector Current

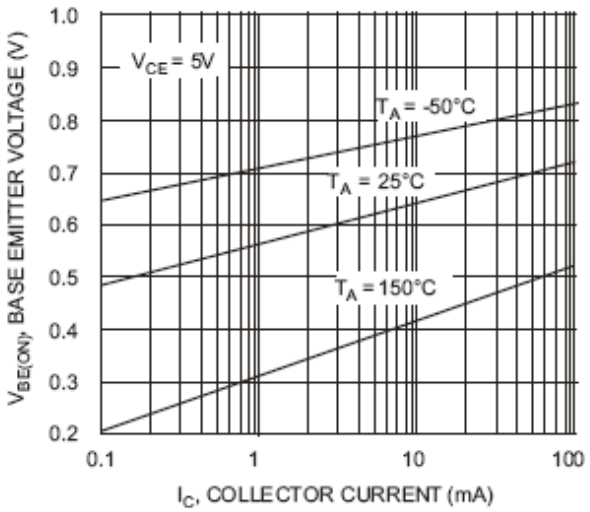


Fig. 6 Base Emitter Voltage vs. Collector Current

Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel;3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

IMPORTANT NOTICE
Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . ***Micro Commercial Components Corp .*** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold ***Micro Commercial Components Corp .*** and all the companies whose products are represented on our website, harmless against all damages.
LIFE SUPPORT
MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.
CUSTOMER AWARENESS
Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

AMEYA360
Components Supply Platform

Authorized Distribution Brand :

Website :

Welcome to visit www.ameya360.com

Contact Us :

- ### Address :

  401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
  Minhang District, Shanghai , China

- ### Sales :

  Direct +86 (21) 6401-6692

  Email amall@ameya360.com

  QQ 800077892

  Skype ameyasales1 ameyasales2

- ### Customer Service :

  Email service@ameya360.com

- ### Partnership :

  Tel +86 (21) 64016692-8333

  Email mkt@ameya360.com