Micro Commercial Components

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MMDT4401

NPN Plastic-Encapsulate Transistors

Features

- 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

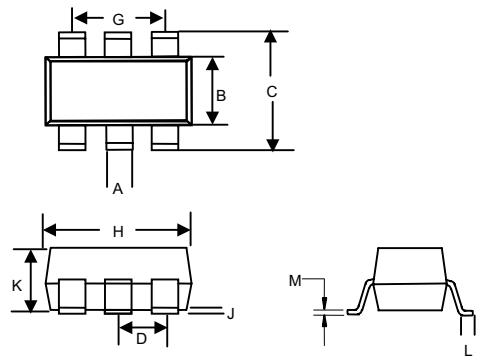
Maximum Ratings @ 25°C Unless Otherwise Specified

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	℃

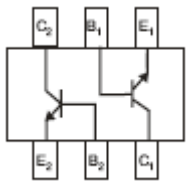
Electrical Characteristics @ 25°C Unless Otherwise Specified

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	



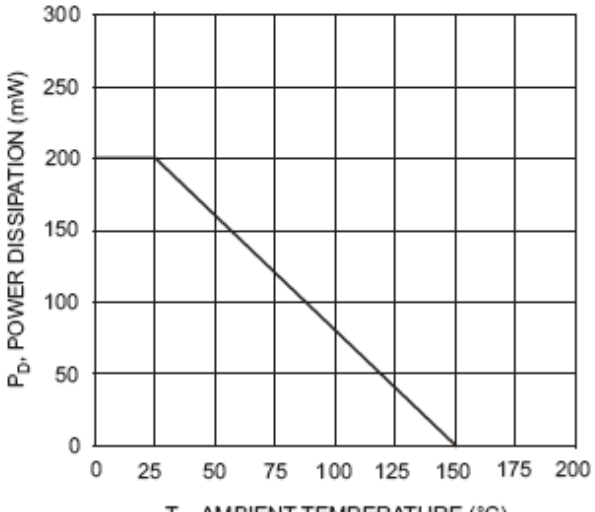


Fig. 1 Max Power Dissipation vs Ambient Temperature

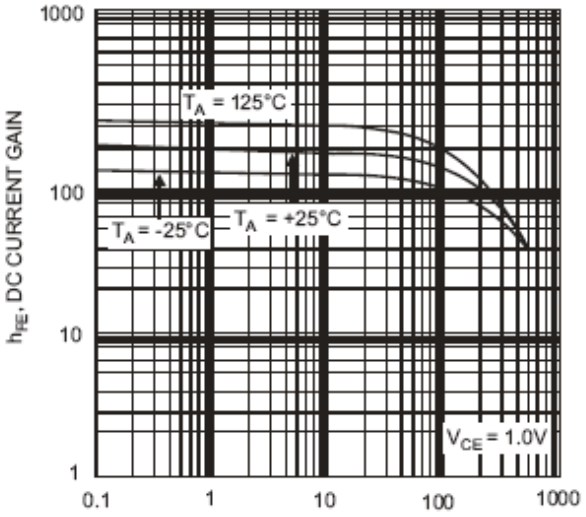


Fig. 2 Typical DC Current Gain vs Collector Current

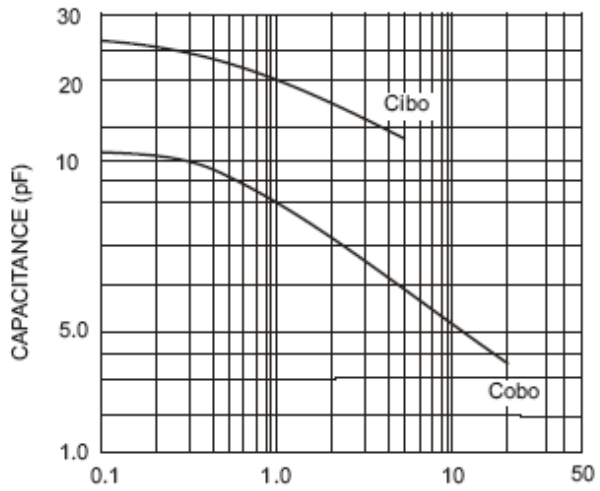


Fig. 3 Typical Capacitance

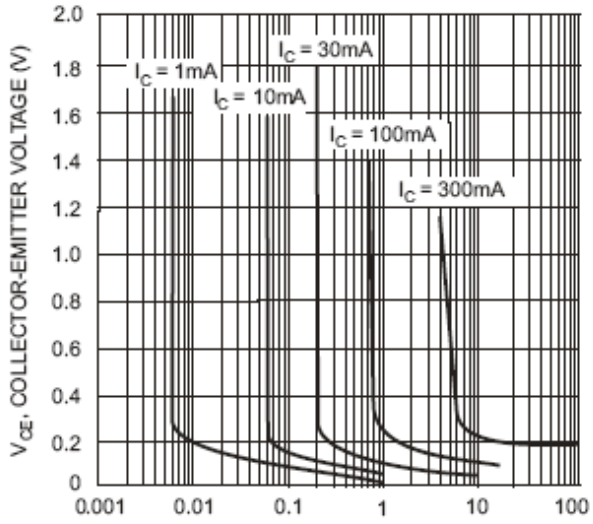


Fig. 4 Typical Collector Saturation Region

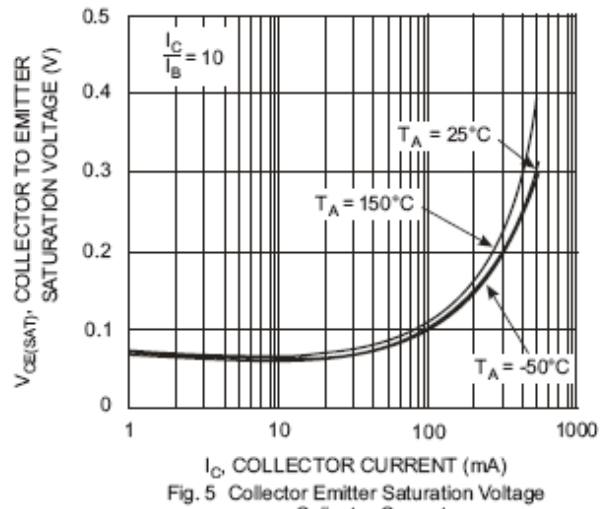


Fig. 5 Collector Emitter Saturation Voltage vs. Collector Current

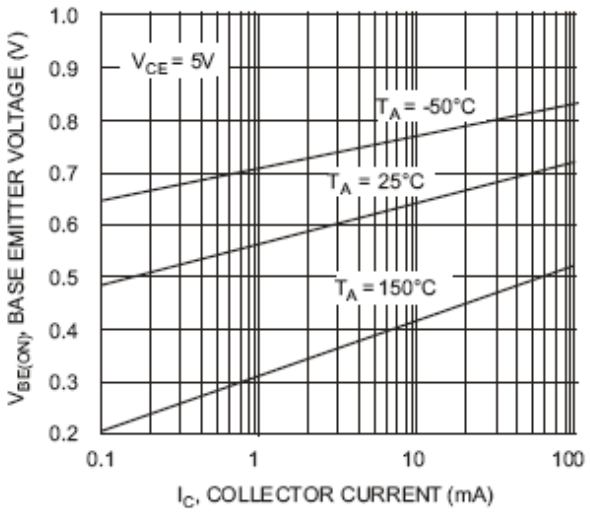


Fig. 6 Base Emitter Voltage vs. Collector Current

Ordering Information :

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

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