



Micro Commercial Components Corp.

Complete Discrete Semiconductor Solutions

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Part Number	MMBT4401
product family	SOT-23 Plastic-Encapsulate Bipolar Transistors
Product Polarity	NPN
SMD/ThroHole	SMD
VCEO	40V
VCBO	60V
VEBO	6.0V
Ic	
PC	350mW
HFE(min)	80
@Ic	10mA
@VCE	1.0V
ICBO	
IEBO	
VCE(sat)	0.4V
VBE(sat)	0.95V
ft	250MHz
nf	
TON_max	
Package Qty	Tape: 3K/Reel , 120K/Ctn;

Green/Pb Free/RoHS/REACH

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MMBT4401

Features

- Surface Mount SOT-23 Package
- Capable of 350mWatts of Power Dissipation
- Operating and Storage Junction Temperatures: -55°C to 150°C
- I_C=600mA
- Marking:2X/M4A
- Case Material:Molded Plastic. UL Flammability Classificatio Rating 94-0 and MSL Rating 1

NPN General Purpose Amplifier

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage* (I _C =1.0mA, I _B =0)	40		Vdc
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _C =10mA, I _E =0)	60		Vdc
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _E =0.1mA, I _C =0)	6.0		Vdc
I _{BL}	Base Cutoff Current (V _{CE} =35Vdc, V _{BE} =0.4Vdc)		0.1	μAdc
I _{CEX}	Collector Cutoff Current (V _{CE} =35Vdc, V _{BE} =0.4Vdc)		0.1	μAdc

ON CHARACTERISTICS

h _{FE}	DC Current Gain* (I _C =0.1mA, V _{CE} =1.0Vdc) (I _C =1.0mA, V _{CE} =1.0Vdc) (I _C =10mA, V _{CE} =1.0Vdc) (I _C =150mA, V _{CE} =1.0Vdc) (I _C =500mA, V _{CE} =1.0Vdc)	20	300	Vdc
		40		
		80		
		100		
		40		
V _{CE(sat)}	Collector-Emitter Saturation Voltage (I _C =150mA, I _B =15mA) (I _C =500mA, I _B =50mA)		0.4 0.75	Vdc
V _{BE(sat)}	Base-Emitter Saturation Voltage (I _C =150mA, I _B =15mA) (I _C =500mA, I _B =50mA)	0.75	0.95 1.2	Vdc

SMALL-SIGNAL CHARACTERISTICS

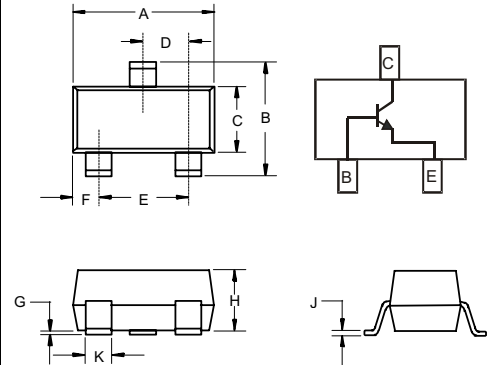
f _T	Current Gain-Bandwidth Product (I _C =20mA, V _{CE} =10Vdc, f=100MHz)	250		MHz
C _{cb}	Collector-Base Capacitance (V _{CB} =5.0Vdc, I _E =0, f=1.0MHz)		6.5	pF
C _{eb}	Emitter-Base Capacitance (V _{BE} =0.5Vdc, I _C =0, f=1.0MHz)		30.0	pF

SWITCHING CHARACTERISTICS

t _d	Delay Time	(V _{CC} =30Vdc, V _{BE} =0.2Vdc)	15	ns
t _r	Rise Time	(I _C =150mA, I _{B1} =15mA)	20	ns
t _s	Storage Time	(V _{CC} =30Vdc, I _C =150mA)	225	ns
t _f	Fall Time	(I _{B1} =I _{B2} =15mA)	30	ns

*Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

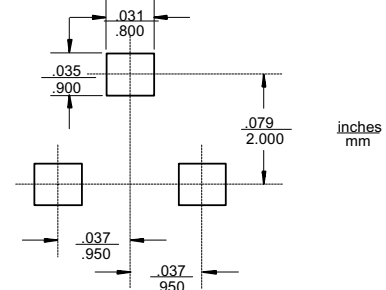
SOT-23



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout





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Ordering Information

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