



DATA SHEET

MMBT4401W

NPN GENERAL PURPOSE SWITCHING TRANSISTOR

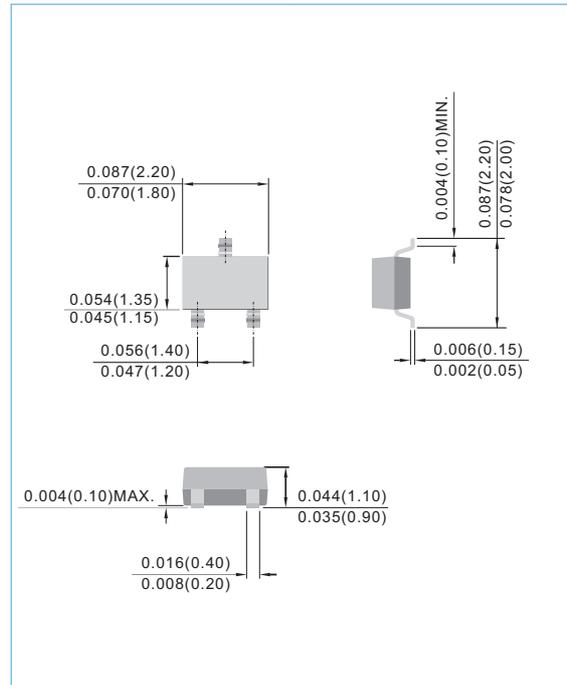
VOLTAGE 40 Volts **POWER** 225mW **SOT-323** Unit : inch(mm)

FEATURES

- NPN epitaxial silicon, planar design
- Collector-emitter voltage $V_{CE} = 40V$
- Collector current $I_C = 600mA$
- Lead free in comply with EU RoHS 42331871GW directives
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SOT-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx Weight: 0.0048 gram
- Marking: M4A



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	Value	UNIT
Collector - Emitter Voltage	V_{CEO}	40	V
Collector - Base Voltage	V_{CBO}	60	V
Emitter - Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous	I_C	600	mA

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	Value	UNIT
Max Power Dissipation (Note 1)	P_{TOT}	225	mW
Storage Temperature	T_{STG}	-55 to 150	
Junction Temperature	T_J	-55 to 150	
Thermal Resistance , Junction to Ambient	R_{JA}	556	/W

Note 1: Transistor mounted on FR-4 board 70 x 60 x 1mm.



ELECTRICAL CHARACTERISTICS (T_J = 25°C, unless otherwise noted)

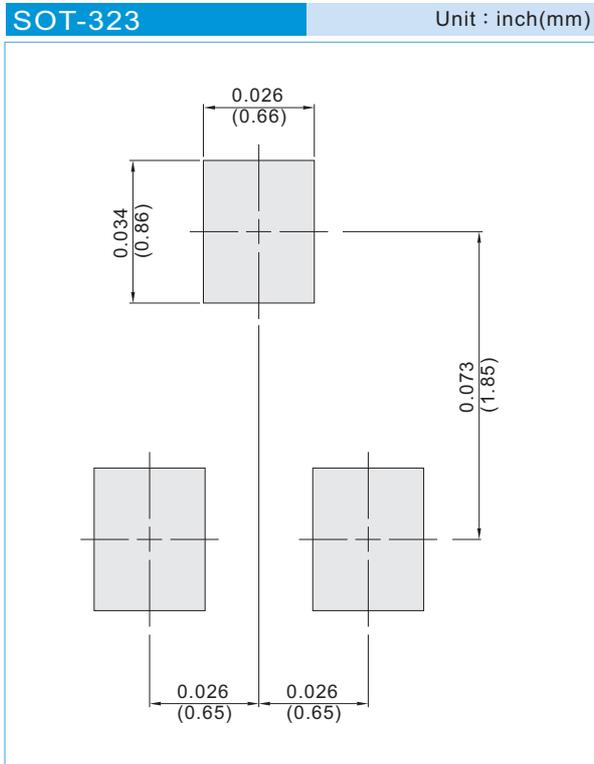
PARAMETER	SYMBOL	Test Condition	MIN.	TYP.	MAX.	UNIT
Collector - Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1.0mA, I _B =0	40	-	-	V
Collector - Base Breakdown Voltage	V _{(BR)CBO}	I _C =100uA, I _E =0	60	-	-	V
Emitter - Base Breakdown Voltage	V _{(BR)EBO}	I _E =100uA, I _C =0	6.0	-	-	V
Base Cutoff Current	I _{BL}	V _{CE} =35V, V _{EB} =0.4V	-	-	100	nA
Collector Cutoff Current	I _{CEX}	V _{CE} =35V, V _{EB} =0.4V	-	-	100	nA
DC Current Gain	h _{FE}	I _C =0.1mA, V _{CE} =1.0V	20	-	-	
		I _C =1.0mA, V _{CE} =1.0V	40	-	-	
		I _C =10mA, V _{CE} =1.0V	80	-	-	
		I _C =150mA, V _{CE} =1.0V	100	-	300	
		I _C =500mA, V _{CE} =2.0V	40	-	-	
Collector - Emitter Saturation Voltage	V _{CE(SAT)}	I _C =150mA, I _B =15 mA	-	-	0.4	V
		I _C =500mA, I _B =50mA	-	-	0.75	
Base - Emitter Saturation Voltage	V _{BE(SAT)}	I _C =150mA, I _B =15mA	0.75	-	0.95	V
		I _C =500mA, I _B =50mA	-	-	1.2	
Collector - Base Capacitance	C _{CBO}	V _{CB} =5V, I _E =0, f=1MHz	-	-	6.5	pF
Emitter - Base Capacitance	C _{EBO}	V _{CB} =0.5V, I _C =0, f=1MHz	-	-	30	pF
Current Gain – Bandwidth Product	F _T	I _C =20mA, V _{CE} =10V, f=100MHz	250	-	-	MHz
Delay Time	t _d	V _{CC} =30V, V _{BE} =2.0V, I _C =150mA, I _B =15mA	-	-	15	ns
Rise Time	t _r	V _{CC} =30V, V _{BE} =2.0V, I _C =150mA, I _{B1} =15mA	-	-	20	ns
Storage Time	t _s	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA	-	-	225	ns
Fall Time	t _f	V _{CC} =3V, I _C =10mA, I _{B1} =I _{B2} =15mA	-	-	30	ns

ELECTRICAL CHARACTERISTICS CURVES

All Curves TBD



MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 12K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel



Part No_packing code_Version

MMBT4401W_R1_00001

MMBT4401W_R2_00001

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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