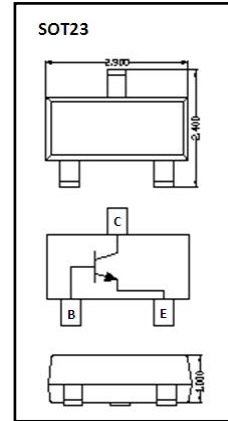


DATA SHEET

MMBT4401

- ◇ Capable of 300mWatts of Power Dissipation
- ◇ Operating and Storage Junction Temperatures: -55°C to 150°C
- ◇ Surface Mount SOT-23 Package
- ◇ RoHS compliant / Green EMC

Device Marking Code	
MMBT4401	2X



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

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	600	mA
P _c	Collector Power Dissipation	300	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	417	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS @ 25° C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Max	Units
V _{CEO}	Collector-Emitter Breakdown Voltage	I _c =1.0mA, I _B =0	40		V
V _{CBO}	Collector-Base Breakdown Voltage	I _c =100μA, I _E =0	60		V
V _{EBO}	Emitter-Base Breakdown Voltage	I _E =100μA, I _c =0	6.0		V
I _{CB0}	Collector Cutoff Current	V _{CB} =50V, I _E =0		100	nA
I _{CEX}	Collector Cutoff Current	V _{CE} =35V, V _{BE} =0.4V		100	nA

I_{EBO}	Emitter cut-off current	$V_{EB}=5V, I_C=0V$		100	nA
h_{FE}	DC Current Gain	$I_C=0.1mA, V_{CE}=1.0V$ $I_C=1.0mA, V_{CE}=1.0V$ $I_C=10mA, V_{CE}=1.0V$ $I_C=150mA, V_{CE}=1.0V$ $I_C=500mA, V_{CE}=2.0V$	20 40 80 100 40	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$		0.4 0.75	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$	0.75	0.95 1.2	V
f_T	Current Gain-Bandwidth Product	$I_C=20mA,$ $V_{CE}=10V, f=100MHz$	250		MHZ
C_{cb}	Collector-Base Capacitance	$V_{CB}=5.0V, I_E=0, f=1.0MHz$		6.5	PF
C_{eb}	Emitter-Base Capacitance	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		30	PF

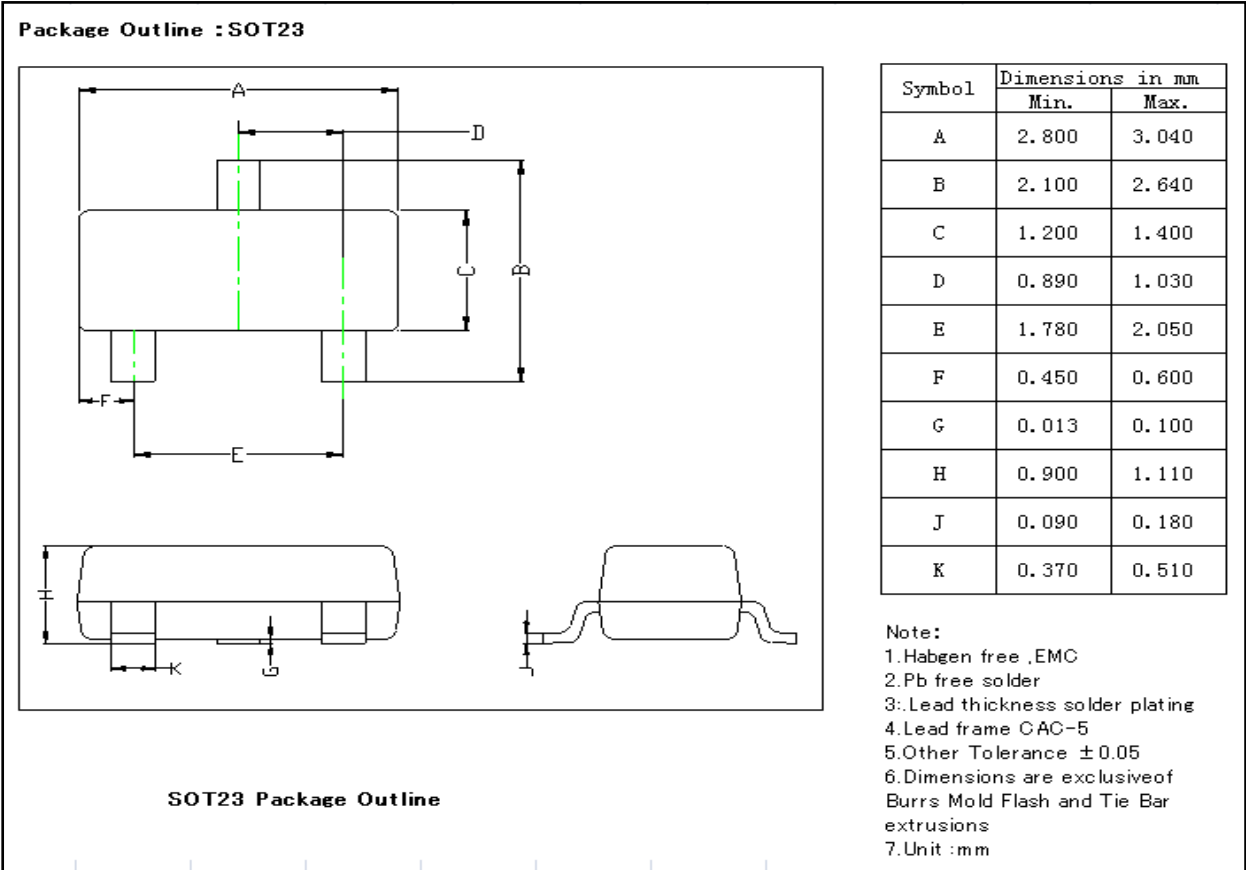
SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min	Max	Units
t_d	Delay Time	$V_{CC}=30V, V_{BE}=0.2V$		15	ns
t_r	Rise Time	$I_C=150mA, I_{B1}=15mA$		20	ns
t_s	Storage Time	$V_{CC}=30V, I_C=150mA$		225	ns
t_f	Fall Time	$I_{B1}=I_{B2}=15mA$		30	ns

ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMBT4401	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS



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