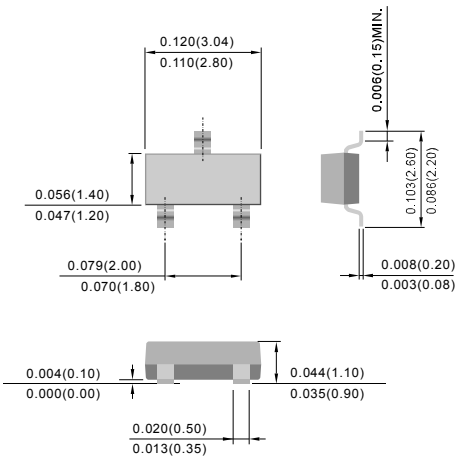
MMBT2369A

NPN GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 15 Volts **POWER** 225 mWatts

SOT-23 Unit: inch (mm)



FEATURES

- NPN epitaxial silicon, planar design
- Collector-emitter voltage V_{CE} = 15V
- Collector current I_C = 200mA
- Lead free in comply with EU RoHS 2011/65/EU directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0084 grams
- Marking: M3B

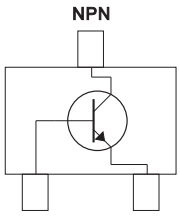


Fig.34

ABSOLUTE RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	15	V
Collector - Base Voltage	V_{CBO}	40	V
Emitter - Base Voltage	V_{EBO}	4.5	V
Collector Current - Continuous	I_C	200	mA

THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	225	mW
Thermal Resistance , Junction to Ambient	$R\theta_{JA}$	556	°C/W
Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

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

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ELECTRICAL CHARACTERISTICS

PARAMETER	Symbol	Test Condition	MIN.	MAX.	Units
OFF CHARACTERISTICS					
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	15	-	V
Collector - Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=10μA, I_B=0	40	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10uA, I_E=0	40	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10uA, I_C=0	4.5	-	V
Collector Cutoff Current	I_{CBO}	V_{CB}=20V,I_E=0 V_{CB}=20V,I_E=0,T_A=125°C		0.4 30	uA uA
ON CHARACTERISTICS					
DC Current Gain (Note 2)	h_{FE}	I_C=10mA, V_{CE}=1.0V I_C=10mA, V_{CE}=0.35V,T_A=-55°C I_C=30mA, V_{CE}=0.4V I_C=100mA, V_{CE}=1.0V	40 40 30 20	120	-
Collector - Emitter Saturation Voltage (Note 2)	$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA I_C=10mA, I_B=1.0mA,TA=125°C I_C=30mA, I_B=3.0mA I_C=100mA,I_B=10mA	-	0.2 0.3 0.25 0.5	V
Base - Emitter Saturation Voltage (Note 2)	$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA I_C=10mA, I_B=1.0mA,T_A=-55°C I_C=10mA, I_B=1.0mA,T_A=125°C I_C=30mA, I_B=3.0mA I_C=100mA,I_B=10mA	0.7 0.59	0.85 1.02 1.15 1.6	V
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C_{OBO}	V_{CB}=5V, I_E=0, f=1MHz	-	4.0	pF
Input Capacitance	C_{IBO}	V_{CB}=0.5V, I_C=0, f=1MHz	-	5.0	pF
Small-Signal Current Gain	h_{FE}	I_C=10mA,V_{CE}=10V, R_G=2.0kΩ,f=100MHz	5.0	-	-
SWITCHING CHARACTERISTICS					
Storage Time	t_s	I_B1=I_B2=I_C=10mA	-	13	ns
Turn-On Time	t_{on}	V_{CC}=3V,I_C=10mA I_B1=3.0mA	-	12	ns
Turn-On Time	t_{off}	V_{CC}=3V,I_C=10mA I_B1=3.0mA,I_B2=1.5mA	-	18	ns

Note 2: Pulse Test: Pulse Width ≤ 300 us, Duty Cycle ≤ 2.0%.

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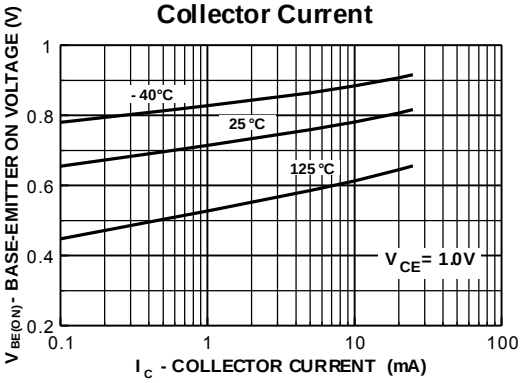
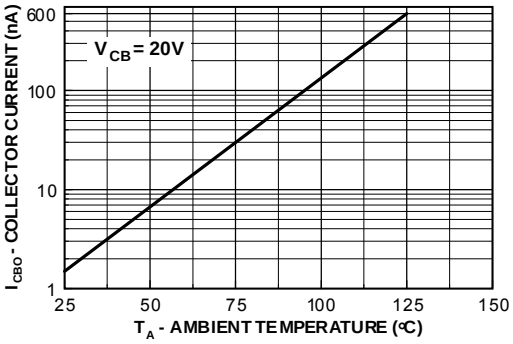
ELECTRICAL CHARACTERISTICS CURVE

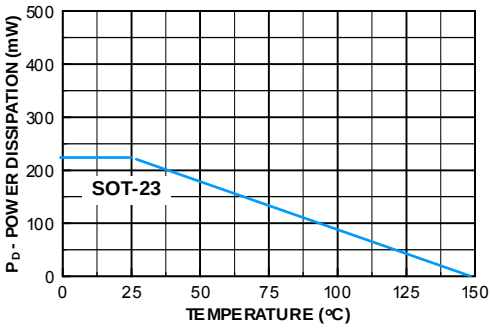
Base-Emitter ON Voltage vs Collector Current



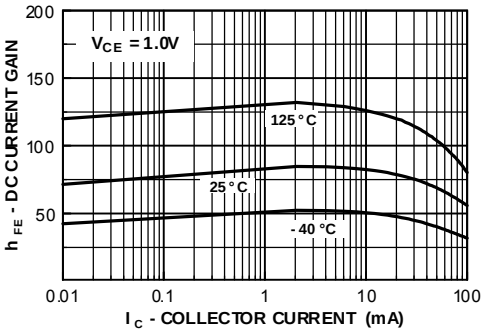
Collector-Cutoff Current vs Ambient Temperature



Power Dissipation vs Ambient Temperature



DC Current Gain vs Collector Current



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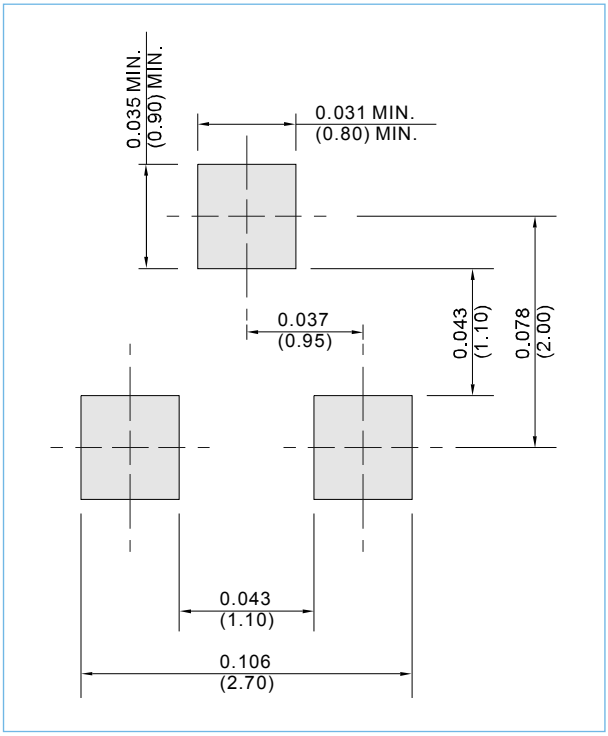
MOUNTING PAD LAYOUT

SOT-23 Unit: inch (mm)



ORDER INFORMATION

- Packing information

  T/R - 12K per 13" plastic Reel

  T/R - 3K per 7” plastic Reel

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Part No_packing code_Version

MMBT2369A_R1_00001
MMBT2369A_R2_00001

For example :

RB500V-40_R2_00001

- Part No.
- Serial number
- Version code means HF
- Packing size code means 13"
- Packing type means T/R

Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th 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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