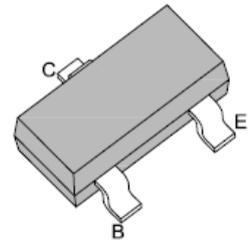


SMD General Purpose Transistor (NPN)

Features

- NPN Silicon Epitaxial Planar Transistor for Switching and Amplifier Applications



Mechanical Data

Case:	SOT-23, Plastic Package
Terminals:	Solderable per MIL-STD-202G, Method 208
Weight:	0.008 gram

SOT-23



Maximum Ratings *(T_{Ambient}=25°C unless noted otherwise)*

Symbol	Description	MMBT8099	Unit	Conditions
	Marking Code	KB		
V_{CB0}	Collector-Base Voltage	80	V	
V_{CEO}	Collector-Emitter Voltage	80	V	
V_{EB0}	Emitter-Base Voltage	6.0	V	
I_c	Collector Current	0.5	A	
P_{tot}	Power Dissipation (Note 1)	225	mW	T _A =25 °C
		1.8	mW/° C	Derate above 25 °C
R_{θJA}	Thermal Resistance, Junction to Ambient (Note 1)	556	° C /W	
P_{tot}	Power Dissipation (Note 2)	300	mW	T _A =25 °C
		2.4	mW/° C	Derate above 25 °C
R_{θJA}	Thermal Resistance, Junction to Ambient (Note 2)	417	° C /W	
T_J	Junction Temperature	150	° C	
T_{STG}	Storage Temperature Range	-55 to +150	° C	

Note: 1. FR-5 Board=25.4 x 19.05 x 1.58 mm (1.0 x 0.75 x 0.062 inches.)
 2. Alumina Substrate=10.16 x 7.62 x 0.61 mm (0.4 x 0.3 x 0.024 inches.) 99.5% alumina.

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MMBT8099

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Min.	Max.	Unit	Conditions
h_{FE}^*	D.C. Current Gain	100	300		$V_{CE}=5V, I_C=1mA$
		100	-		$V_{CE}=5V, I_C=10mA$
		75	-		$V_{CE}=5V, I_C=100mA$
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	80	-	V	$I_C=0.1mA, I_E=0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	80	-	V	$I_C=10mA, I_B=0$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	6.0	-	V	$I_E=0.01mA, I_C=0$
V_{CEsat}^*	Collector-Emitter Saturation Voltage	-	0.4	V	$I_C=100mA, I_B=5mA$
		-	0.3		$I_C=100mA, I_B=10mA$
V_{BEon}^*	Base-Emitter On Voltage	0.6	0.8	V	$I_C=10mA, V_{CE}=5V$
I_{CES}	Collector Cut-off Current	-	0.1	μA	$V_{CE}=60V, I_B=0$
I_{CBO}	Base Cut-off Current	-	0.1	μA	$V_{CB}=80V, I_E=0$
I_{EBO}	Emitter Cut-off Current	-	0.1	μA	$V_{EB}=6V, I_C=0$
f_T	Current Gain-Bandwidth Product	150	-	MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$
C_{CBO}	Output Capacitance	-	6	pF	$V_{CB}=5V, f=1.0MHz, I_E=0$
C_{EBO}	Input Capacitance	-	25	pF	$V_{EB}=0.5V, f=1.0MHz, I_C=0$

*Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$

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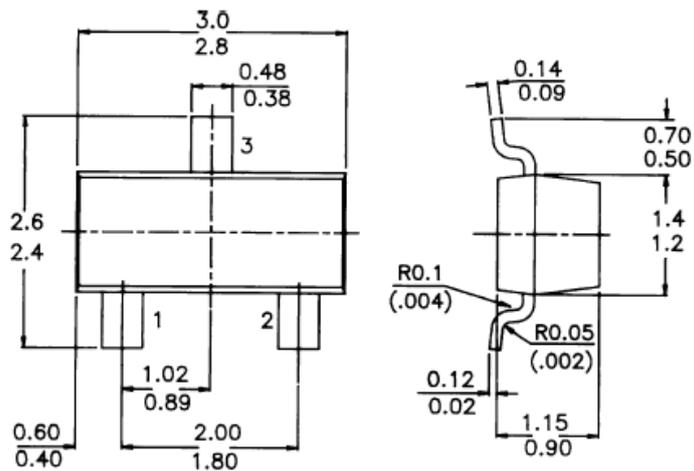
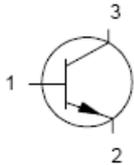
MMBT8099

Dimensions in mm

SOT-23

Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



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