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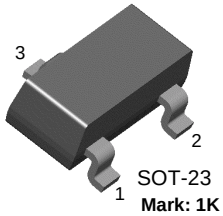
MMBT6428

NPN General Purpose Amplifier

- This device designed for general pupose amplifier applications at collector currents to 300mA
- Sourced from process 10.



SOT-23
Mark: 1K

1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings* T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	50	V
V_{CBO}	Collector-Base Voltage	60	V
I_C	Collector Current - Continuous	500	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	- 55 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:
1) These ratings are based on a maximum junction temperature of 150 degrees C.

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	I_C = 1.0mA, I_B = 0	50		V
$V_{(BR)CBO}$	Collector-Base BreakdownVoltage	I_C = 100µA, I_E = 0	60		V
I_{CEO}	Collector Cut-off Current	V_{CE} = 30V, I_B = 0		0.1	µA
I_{CBO}	Collector Cut-off Current	V_{CB} = 30V, I_E = 0		10	nA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5.0V, I_B = 0		10	nA
On Characteristics					
h_{FE}	DC Current Gain	V_{CE} = 5.0V, I_C = 10µA V_{CE} = 5.0V, I_C = 100µA V_{CE} = 5.0V, I_C = 1.0mA V_{CE} = 5.0V, I_C = 10mA	250 250 250 250	 650 	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5.0mA		0.2 0.6	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = 5.0V, I_C = 1.0mA	0.56	0.66	V
Small Signal Characteristics					
f_T	Current gain Bandwidth Product	V_{CE} = 5.0V, I_C = 1.0mA, f = 100MHz	100	700	MHz
C_{obo}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1.0MHz		3.0	pF
C_{ibo}	Input Capacitance	V_{EB} = 0.5V, I_C = 0, f = 1.0MHz		8.0	pF

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

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Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	350 2.8	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

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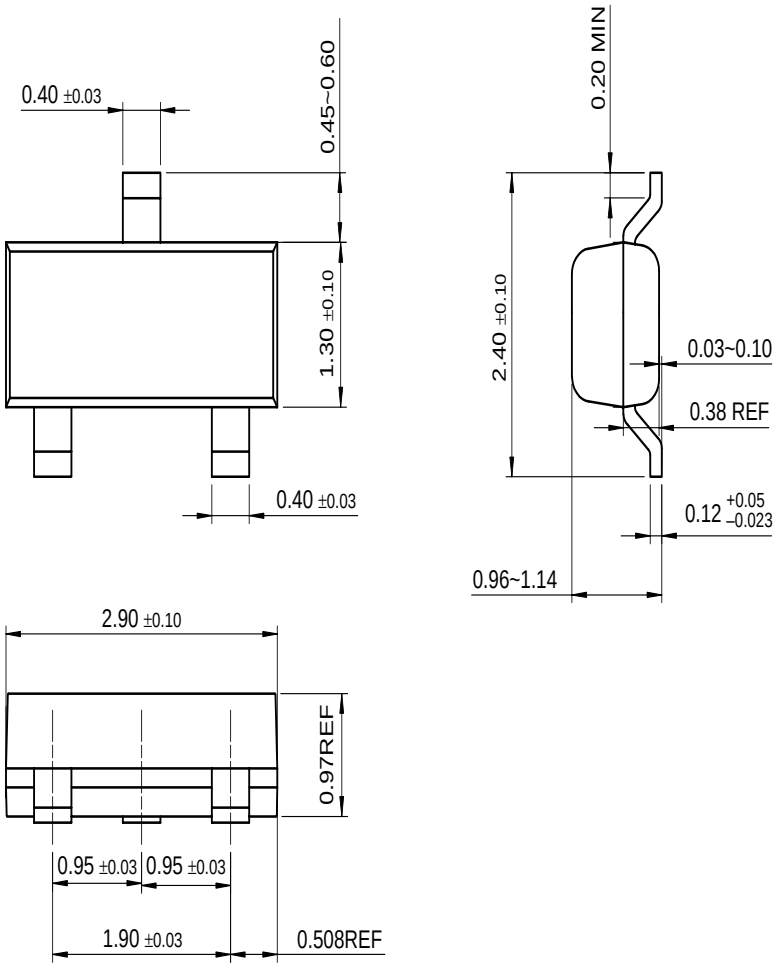
Package Dimensions

SOT-23



Dimensions in Millimeters

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