



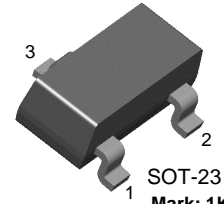
ON Semiconductor®

MMBT6428

MMBT6428

NPN General Purpose Amplifier

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



SOT-23
Mark: 1K
1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings* $T_C=25^\circ\text{C}$ 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	$^\circ\text{C}$

*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 $T_C=25^\circ\text{C}$ unless otherwise noted

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

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

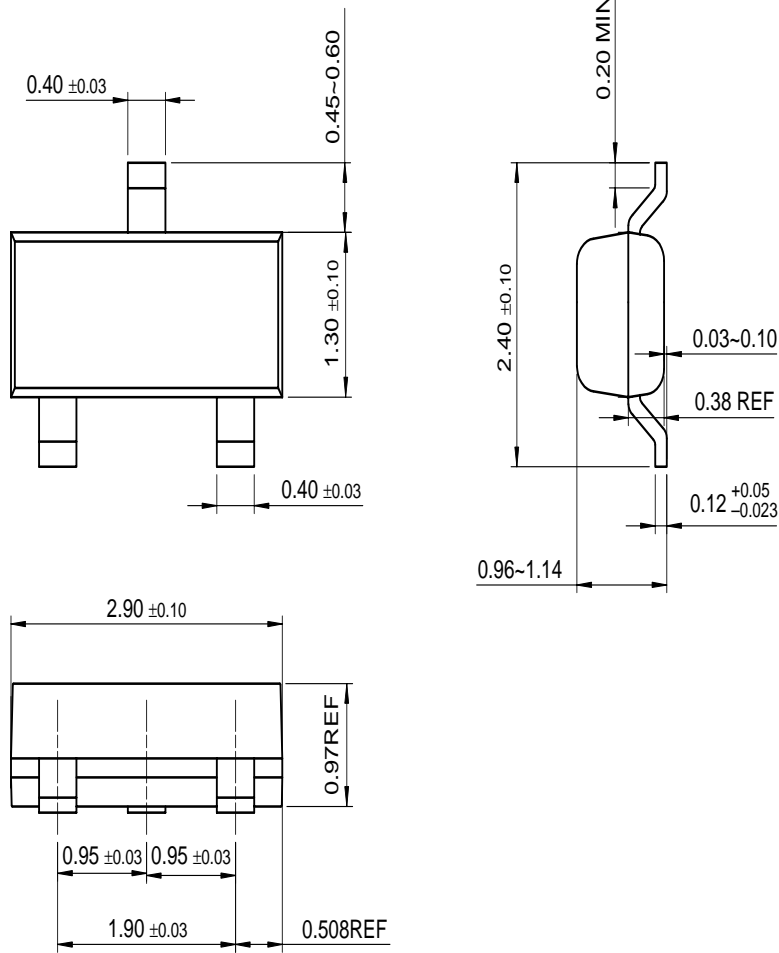
Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

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

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

Package Dimensions

SOT-23



Dimensions in Millimeters

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