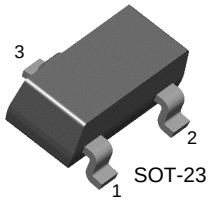
FAIRCHILD SEMICONDUCTOR®

February 2005

MMBT2222AK

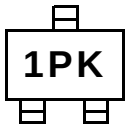
NPN Epitaxial Silicon Transistor

General Purpose Transistor



1. Base 2. Emitter 3. Collector

Marking



Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	75	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	350	mW
T_{STG}	Storage Temperature	150	°C

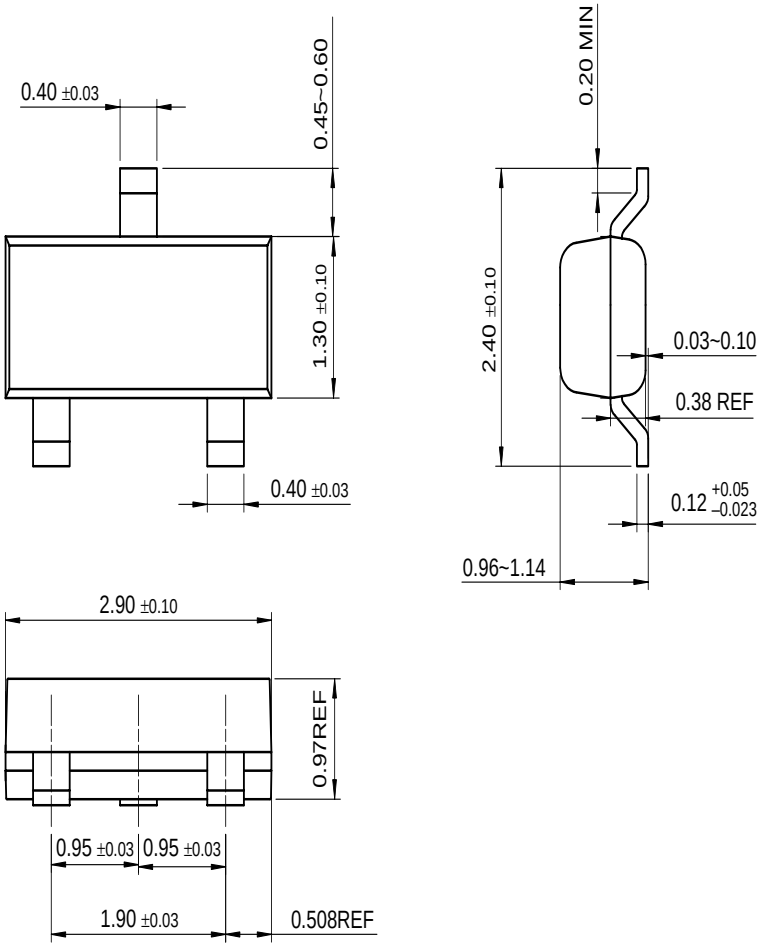
Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 10μA, I_E = 0	75		V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10mA, I_B = 0	40		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	6		V
I_{CBO}	Collector Cut-off Current	V_{CB} = 60V, I_E = 0		0.01	μA
h_{FE}	DC Current Gain *	V_{CE} = 10V, I_C = 0.1mA V_{CE} = 10V, I_C = 1mA V_{CE} = 10V, I_C = 10mA V_{CE} = 10V, I_C = 150mA V_{CE} = 10V, I_C = 500mA	35 50 75 100 40	 300 	
V_{CE} (sat)	Collector-Emitter Saturation Voltage *	I_C = 150mA, I_B = 15mA I_C = 500mA, I_B = 50mA		0.3 1.0	V V
V_{BE} (sat)	Base-Emitter Saturation Voltage *	I_C = 150mA, I_B = 15mA I_C = 500mA, I_B = 50mA	0.6	1.2 2.0	V V
f_T	Current Gain Bandwidth Product	I_C = 20mA, V_{CE} = 20V, f = 100MHz	300		MHz
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz		8	pF
NF	Noise Figure	I_C = 100μA, V_{CE} = 10V R_S = 1KΩ, f = 1MHz		4	dB
t_{ON}	Turn On Time	V_{CC} = 30V, I_C = 150mA V_{BE} = 0.5V, I_{B1} = 15mA		35	ns
t_{OFF}	Turn Off Time	V_{CC} = 30V, I_C = 150mA, I_{B1} = I_{B2} = 15mA		285	ns

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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