

# SOT-23 Plastic-Encapsulate Transistors

## MMBT4403 TRANSISTOR (PNP)

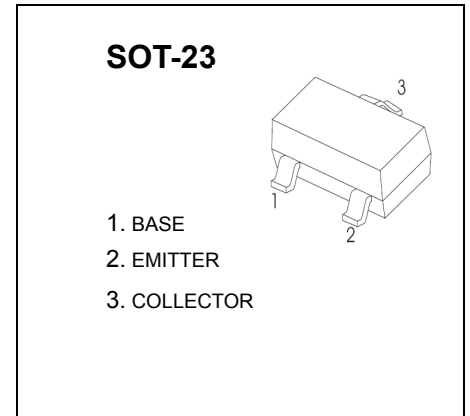
### FEATURES

Switching transistor

MARKING : 2T

### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-40	V
$V_{CEO}$	Collector-Emitter Voltage	-40	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-600	mA
$P_C$	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	$^\circ\text{C}/\text{W}$
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^\circ\text{C}$



### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\ \mu\text{A}, I_E=0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\ \mu\text{A}, I_C=0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-35\text{V}, I_E=0$			-0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEX}$	$V_{CE}=-35\text{V}, V_{BE}=0.4\text{V}$			-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0$			-0.1	$\mu\text{A}$
DC current gain	$h_{FE1}$	$V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$	HD			
	$h_{FE2}$	$V_{CE}=-1\text{V}, I_C=-1\text{mA}$	$\hat{I}0$			
	$h_{FE3}$	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	F€0			
	$h_{FE4}$	$V_{CE}=-2\text{V}, I_C=-150\text{mA}$	100		300	
	$h_{FE5}$	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$	GD			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.4	V
		$I_C=-500\text{mA}, I_B=-50\text{mA}$			-0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.95	V
		$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1.3	V
Transition frequency	$f_T$	$V_{CE}=-10\text{V}, I_C=-20\text{mA}, f=100\text{MHz}$	200			MHz
Delay time	$t_d$	$V_{CC}=-30\text{V}, V_{BE(off)}=-0.5\text{V}$			15	}s
Rise time	$t_r$	$I_C=-150\text{mA}, I_{B1}=-15\text{mA}$			20	}s
Storage time	$t_s$	$V_{CC}=-30\text{V}, I_C=-150\text{mA}$			225	}s
Fall time	$t_f$	$I_{B1}=I_{B2}=-15\text{mA}$			$\hat{I}0$	}s

# Typical Characteristics

