

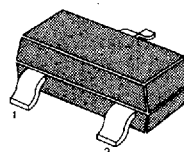
GENERAL PURPOSE TRANSISTOR

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	200	mA
Collector Dissipation	P_C	350	mW
Storage Temperature	T_{stg}	150	$^\circ\text{C}$

• Refer to MMBT3904 for graphs

SOT-23



1. Base 2. Emitter 3. Collector

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 2.0\text{mA}$, $I_B = 0$	45		V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 1.0\text{mA}$, $I_C = 0$	5		V
Collector Cutoff Current	I_{CES}	$V_{CE} = 32\text{V}$, $V_{BE} = 0$		20	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$		20	nA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$	20		
		$V_{CE} = 5\text{V}$, $I_C = 2.0\text{mA}$	180	310	
		$V_{CE} = 1\text{V}$, $I_C = 50\text{mA}$	70		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$, $I_B = 0.25\text{mA}$		0.35	V
		$I_C = 50\text{mA}$, $I_B = 1.25\text{mA}$		0.55	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}$, $I_B = 0.25\text{mA}$	0.6	0.85	V
		$I_C = 50\text{mA}$, $I_B = 1.25\text{mA}$	0.7	1.05	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C = 2.0\text{mA}$, $V_{CE} = 5\text{V}$	0.55	0.75	V
Current Gain-Bandwidth Product	f_T	$I_C = 10\text{mA}$, $V_{CE} = 5\text{V}$	125		MHz
		$f = 100\text{MHz}$			
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$		4.5	pF
		$f = 1\text{MHz}$			
Noise Figure	NF	$V_{CE} = 5\text{V}$, $I_C = 0.2\text{mA}$		6	dB
		$R_S = 2\text{K}\Omega$, $f = 1\text{KHz}$			
Turn On Time	t_{on}	$I_C = 10\text{mA}$, $I_{B1} = 1.0\text{mA}$		150	ns
Turn Off Time	t_{off}	$V_{BB} = 3.6\text{V}$, $I_{B2} = 1.0\text{mA}$		800	ns
		$R_1 = R_2 = 5\text{K}\Omega$, $R_L = 990\Omega$			

Marking

