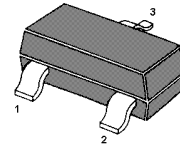


MMBT4140

NPN Silicon General Purpose Transistor



1.BASE 2.EMITTER 3.COLLECTOR
SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

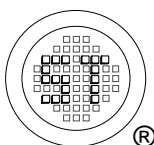
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	30	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	1	A
Peak Collector Current	I_{CM}	2	A
Peak Base Current	I_{BM}	1	A
Total Power Dissipation	P_{tot}	200 ¹⁾	mW
		450 ²⁾	
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to +150	$^\circ\text{C}$

¹⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.

²⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1cm²

Characteristics at $T_{amb} = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 1\text{ mA}$ at $V_{CE} = 5\text{ V}$, $I_C = 500\text{ mA}$ at $V_{CE} = 5\text{ V}$, $I_C = 1\text{ A}$	h_{FE}	300	-	
	h_{FE}	300	900	
	h_{FE}	200	-	
Collector Base Cutoff Current at $V_{CB} = 40\text{ V}$	I_{CBO}	-	100	nA
Collector Emitter Cutoff Current at $V_{CE} = 30\text{ V}$	I_{CEO}	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$	I_{EBO}	-	100	nA
Collector Emitter Saturation Voltage at $I_C = 100\text{ mA}$, $I_B = 1\text{ mA}$ at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$ at $I_C = 1\text{ A}$, $I_B = 100\text{ mA}$	$V_{CE(sat)}$	-	200	mV
		-	250	
		-	500	
Base Emitter Saturation Voltage at $I_C = 1\text{ A}$, $I_B = 100\text{ mA}$	$V_{BE(sat)}$	-	1.2	V
Base Emitter Turn-on Voltage at $V_{CE} = 5\text{ V}$, $I_C = 1\text{ A}$	$V_{BE(on)}$	-	1.1	V
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_C = 50\text{ mA}$, $f = 100\text{ MHz}$	f_T	150	-	HMz
Collector Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	10	pF



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