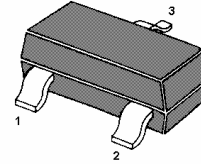


NPN Silicon Epitaxial Planar Switching Transistor

SOT-23



1.BASE 2.EMITTER 3.COLLECTOR

SOT-23 Plastic Package

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

	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CES}	40	V
Collector Emitter Voltage	V_{CEO}	15	V
Emitter Base Voltage	V_{EBO}	4.5	V
Collector Current	I_C	500	mA
Power Dissipation	P_{tot}	200	mW
Thermal Resistance Form junction to ambient in free air	R_{thj-a}	500	K/W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^\circ\text{C}$



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

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $V_{CE}=1\text{V}$, $I_C=10\text{mA}$	h_{FE}	40	-	120	-
at $V_{CE}=1\text{V}$, $I_C=10\text{mA}$, $T_a=-55\text{ }^{\circ}\text{C}$	h_{FE}	20	-	-	-
at $V_{CE}=2\text{V}$, $I_C=100\text{mA}$	h_{FE}	20	-	-	-
Small Signal Current Gain					
at $V_{CE}=10\text{V}$, $I_C=1\text{mA}$, $f=100\text{MHz}$	h_{fe}	5	-	-	-
Collector Cutoff Current					
at $V_{CB}=20\text{V}$	I_{CBO}	-	-	0.4	μA
at $V_{CB}=20\text{V}$, $T_j=125\text{ }^{\circ}\text{C}$		-	-	30	mA
Collector Saturation Voltage					
at $I_C=10\text{mA}$, $I_B=1\text{mA}$	$V_{CE(sat)}$	-	-	0.25	V
Base Saturation Voltage					
at $I_C=10\text{mA}$, $I_B=1\text{mA}$	$V_{BE(sat)}$	0.7	-	0.85	V
Collector Emitter Breakdown Voltage					
at $I_C=10\text{mA}$	$V_{(BR)CEO}$	15	-	-	V
Collector Emitter Breakdown Voltage					
at $I_C=10\text{mA}$	$V_{(BR)CES}$	40	-	-	V
Collector Base Breakdown Voltage					
at $I_C=10\text{mA}$	$V_{(BR)CBO}$	40	-	-	V
Emitter Base Breakdown Voltage					
at $I_E=10\text{mA}$	$V_{(BR)EBO}$	4.5	-	-	V
Output Capacitance					
at $V_{CB}=5\text{V}$, $f=1\text{MHz}$	C_{ob}	-	-	4	pF
Storage Time					
at $I_{Con}=I_{Bon}=-I_{Boff}=10\text{mA}$	t_s	-	5	13	ns
Turn-on Time					
at $I_C=10\text{mA}$, $I_{Bon}=3\text{mA}$, $V_{CC}=3\text{V}$	t_{on}	-	8	12	ns
Turn-off Time					
at $I_C=10\text{mA}$, $I_{Bon}=3\text{mA}$, $I_{Boff}=1.5\text{mA}$, $V_{CC}=3\text{V}$	t_{off}	-	10	18	ns



SEMTECH ELECTRONICS LTD.

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