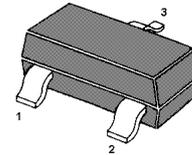


## NPN Silicon Epitaxial Planar Switching Transistor



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  $T_{amb}=25\text{ °C}$** 

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