

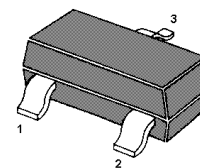
# PBSS4140T

30 V Low  $V_{CE(sat)}$  NPN Transistor

SOT-23

## FEATURES

- Low collector-emitter saturation voltage
- High current capabilities
- Improved device reliability due to reduced heat generation.



1.BASE 2.EMITTER 3.COLLECTOR

## APPLICATIONS

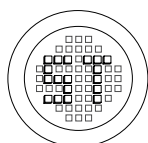
- General purpose switching and muting
- LCD backlighting
- Supply line switching circuits
- Battery driven equipment (mobile phones, video cameras and hand-held devices).

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

		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	$T_{amb} = 25^\circ\text{C}^{1)}$	$P_{tot}$	200	mW
	$T_{amb} = 25^\circ\text{C}^{2)}$		450	
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_s$	-65 to +150	$^\circ\text{C}$
Thermal Resistance From Junction to Ambient	In free air <sup>1)</sup>	$R_{thj-a}$	417	K/W
	In free air <sup>2)</sup>		278	
Operating Ambient Temperature		$T_{amb}$	-65 to +150	$^\circ\text{C}$

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

<sup>2)</sup> Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1cm<sup>2</sup>.



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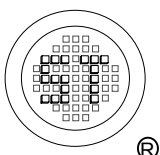
РАДИОТЕХ

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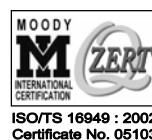
## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	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 $V_{CE}=5\text{V}$ , $I_C=1\text{A}$	$h_{FE}$ $h_{FE}$ $h_{FE}$	300 300 200	- - -	- 900 -	
Collector-Base Cutoff Current at $V_{CB}=40\text{V}$ at $V_{CB}=40\text{V}$ , $T_{amb}=150\text{ }^{\circ}\text{C}$	$I_{CBO}$	- -	- -	100 50	nA $\mu\text{A}$
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 $I_C=1\text{A}$ , $I_B=100\text{mA}$	$V_{CE(sat)}$	- - -	- - -	200 250 500	mV
Equivalent on-Resistance at $I_C=500\text{mA}$ , $I_B=50\text{mA}$ ;	$R_{CE(sat)}$	-	260	<500	m $\Omega$
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 $V_{CB}=10\text{V}$ , $f=1\text{MHz}$	$C_C$	-	-	10	pF



## SEMTECH ELECTRONICS LTD.

(Subsidiary of Semtech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



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