





# TSB772S

## Low Vce(sat) PNP Transistor

<p><b>TO-92</b></p>  <p>1 2 3</p>	<p><b>SOT-89</b></p>  <p>1 2 3</p>	<p>Pin assignment:</p> <p><b>TO-92</b></p> <p>1. Emitter 2. Collector 3. Base</p> <p><b>SOT-89</b></p> <p>1. Base 2. Collector 3. Emitter</p>	<p><b><math>BV_{CEO} = - 50V</math></b>  <b><math>I_C = - 3A</math></b>  <b><math>V_{CE(SAT)}, = - 0.3V(\text{typ.}) @ I_C / I_B = - 2A / - 20mA</math></b></p>									
<p><b>Features</b></p> <ul style="list-style-type: none"> <li>◇ Low <math>V_{CE(SAT)}</math>.</li> <li>◇ Excellent DC current gain characteristics</li> </ul>		<p><b>Ordering Information</b></p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Packing</th> <th>Package</th> </tr> </thead> <tbody> <tr> <td>TSB772SCT</td> <td>Bulk Pack</td> <td>TO-92</td> </tr> <tr> <td>TSB772SCY</td> <td>Tape &amp; Reel</td> <td>SOT-89</td> </tr> </tbody> </table>		Part No.	Packing	Package	TSB772SCT	Bulk Pack	TO-92	TSB772SCY	Tape & Reel	SOT-89
Part No.	Packing	Package										
TSB772SCT	Bulk Pack	TO-92										
TSB772SCY	Tape & Reel	SOT-89										
<p><b>Structure</b></p> <ul style="list-style-type: none"> <li>◇ Epitaxial planar type.</li> <li>◇ PNP silicon transistor</li> </ul>												

### Absolute Maximum Rating (Ta = 25 °C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	- 50V	V
Collector-Emitter Voltage	$V_{CEO}$	- 50V	V
Emitter-Base Voltage	$V_{EBO}$	- 5	V
Collector Current	DC	- 3	A
	Pulse	- 7 (note 1)	
Collector Power Dissipation	TO-92	0.75	W
	SOT-89	0.50	
Operating Junction Temperature	$T_J$	+150	°C
Operating Junction and Storage Temperature Range	$T_{STG}$	- 55 to +150	°C

Note: 1. Single pulse,  $P_w = 350\mu s$ , Duty  $\leq 2\%$

### Electrical Characteristics

Ta = 25 °C unless otherwise noted

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
<b>Static</b>						
Collector-Base Voltage	$I_C = - 50\mu A, I_E = 0$	$BV_{CBO}$	- 50	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = - 1mA, I_B = 0$	$BV_{CEO}$	- 50	--	--	V
Emitter-Base Breakdown Voltage	$I_E = - 50\mu A, I_C = 0$	$BV_{EBO}$	- 5	--	--	V
Collector Cutoff Current	$V_{CB} = - 40V, I_E = 0$	$I_{CBO}$	--	--	- 1	$\mu A$
Emitter Cutoff Current	$V_{EB} = - 4V, I_C = 0$	$I_{EBO}$	--	--	-1	$\mu A$
Collector-Emitter Saturation Voltage	$I_C / I_B = - 2.0A / - 0.2A$	$V_{CE(SAT)}$	--	- 0.3	- 0.5	V
DC Current Transfer Ratio	$V_{CE} = - 2V, I_C = - 1A$	$h_{FE}$	160	--	350	
Transition Frequency	$V_{CE} = - 5V, I_C = - 100mA,$ $f = 100MHz$	$f_T$	--	80	--	MHz
Output Capacitance	$V_{CB} = - 10V, f = 1MHz$	$C_{ob}$		55	--	pF

Note : pulse test: pulse width  $\leq 380\mu s$ , duty cycle  $\leq 2\%$

## Electrical Characteristics Curve

Figure 1. Current Gain vs Collector Current

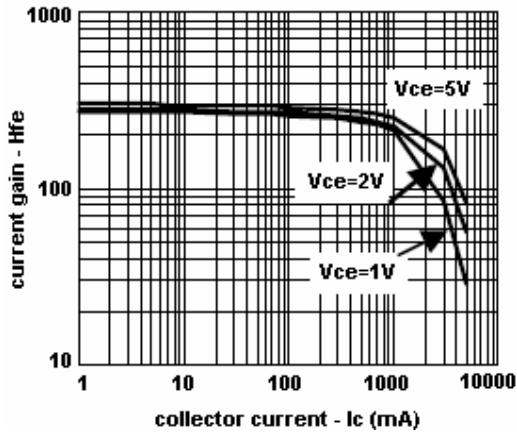


Figure 2. Saturation Voltage vs Collector Current

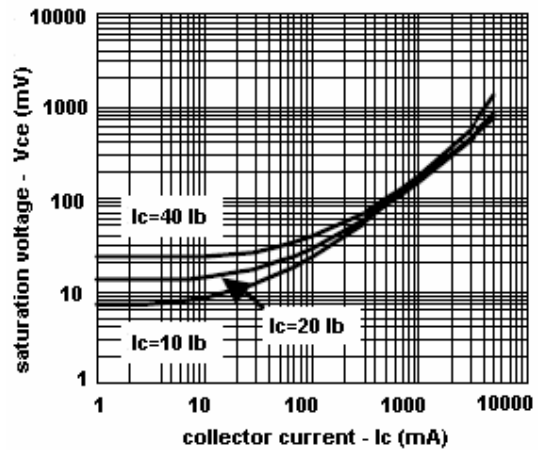


Figure 3. Saturation Voltage vs Collector Current

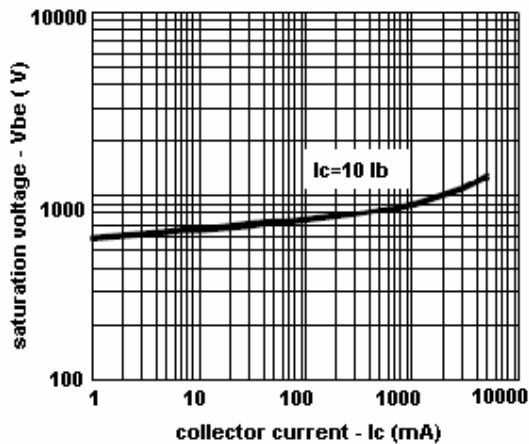
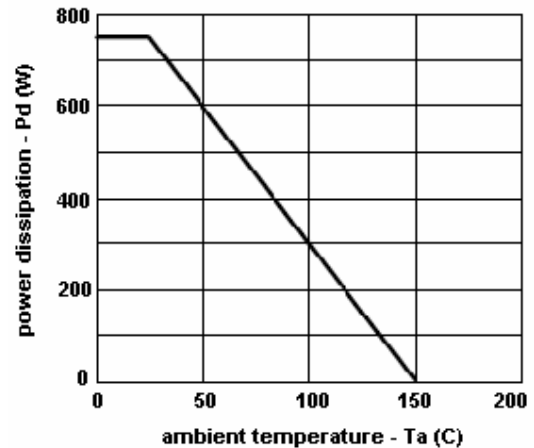
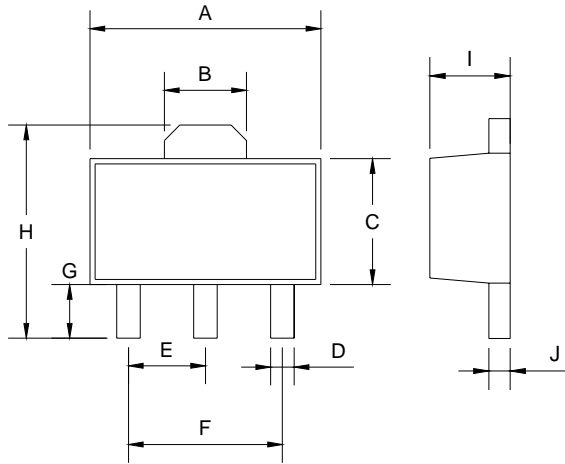


Figure 4. Power Derating Curves

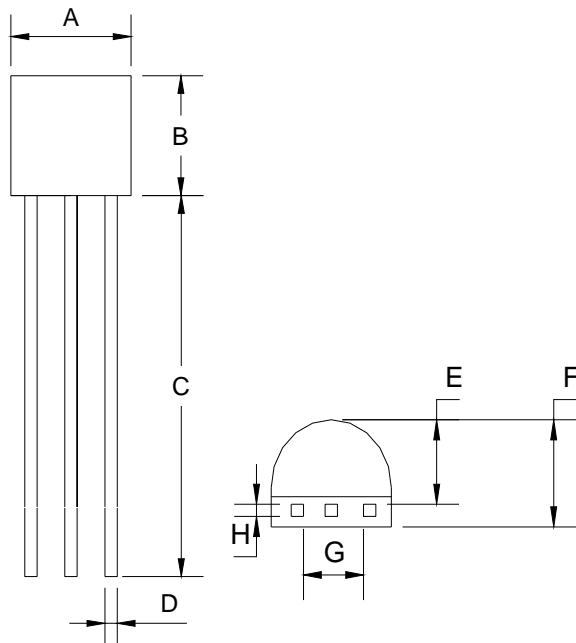


## SOT-89 Mechanical Drawing



SOT-89 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.40	4.60	0.173	0.181
B	1.50	1.7	0.059	0.070
C	2.30	2.60	0.090	0.102
D	0.40	0.52	0.016	0.020
E	1.50	1.50	0.059	0.059
F	3.00	3.00	0.118	0.118
G	0.89	1.20	0.035	0.047
H	4.05	4.25	0.159	0.167
I	1.4	1.6	0.055	0.068
J	0.35	0.44	0.014	0.017

## TO-92 Mechanical Drawing



TO-92 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.30	4.70	0.169	0.185
B	4.30	4.70	0.169	0.185
C	14.30(typ)		0.563(typ)	
D	0.43	0.49	0.017	0.019
E	2.19	2.81	0.086	0.111
F	3.30	3.70	0.130	0.146
G	2.42	2.66	0.095	0.105
H	0.37	0.43	0.015	0.017