

## Low $V_{CE(SAT)}$ PNP Transistor

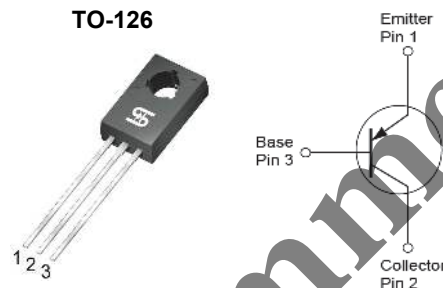
### FEATURES

- Low  $V_{CE(SAT)}$  -0.3 @  $I_C = -2A, I_B = -200mA$  (Typ.)
- Complementary part with TSD882
- Epitaxial Planar Type
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC.
- Halogen-free according to IEC 61249-2-21

### APPLICATION

- Power Supply
- Low Speed Switching Applications

KEY PERFORMANCE PARAMETERS			
PARAMETER		VALUE	UNIT
$BV_{CEO}$		-30	V
$BV_{CBO}$		-50	V
$I_C$		-3	A
$V_{CE(SAT)}$	$I_C = -2A, I_B = -200mA$	-0.5	V



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)				
PARAMETER		SYMBOL	LIMIT	UNIT
Collector-Base Voltage		$V_{CBO}$	-50	V
Collector-Emitter Voltage		$V_{CEO}$	-30	V
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Current	DC	$I_C$	-3	A
	Pulse		-7 (note)	
Collector Power Dissipation	$T_A = 25^\circ C$	$P_D$	1	W
	$T_C = 25^\circ C$		10	
Operating Junction Temperature		$T_J$	+150	$^\circ C$
Operating Junction and Storage Temperature Range		$T_{STG}$	- 55 to +150	$^\circ C$

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

THERMAL PERFORMANCE				
PARAMETER		SYMBOL	LIMIT	UNIT
Junction to Case Thermal Resistance		$R_{\theta JC}$	6.25	$^\circ C/W$

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$I_C = -50\mu\text{A}, I_E = 0$	$BV_{CBO}$	-50	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	$BV_{CEO}$	-30	--	--	V
Emitter-Base Breakdown Voltage	$I_E = -50\mu\text{A}, I_C = 0$	$BV_{EBO}$	-5	--	--	V
Collector Cutoff Current	$V_{CB} = -30\text{V}, I_E = 0$	$I_{CBO}$	--	--	-1	$\mu\text{A}$
Emitter Cutoff Current	$V_{EB} = -33\text{V}, I_C = 0$	$I_{EBO}$	--	--	-1	$\mu\text{A}$
Collector-Emitter Saturation Voltage	$I_C = -2\text{A}, I_B = -200\text{mA}$	$*V_{CE(SAT)}$	--	-0.3	-0.5	V
Base-Emitter Saturation Voltage	$I_C = -2\text{A}, I_B = -200\text{mA}$	$*V_{BE(SAT)}$	--	-1	-2	V
DC Current Transfer Ratio	$V_{CE} = -2\text{V}, I_C = -1\text{A}$	$*h_{FE}$	100	--	500	
Transition Frequency	$V_{CE} = -5\text{V}, I_C = -100\text{mA}, f = 100\text{MHz}$	$f_T$	--	80	--	MHz
Output Capacitance	$V_{CB} = -10\text{V}, f = 1\text{MHz}$	$C_{ob}$	--	55	--	pF
Collector Cutoff Current	$V_{CB} = -30\text{V}, I_E = 0$	$I_{CBO}$	--	--	-1	$\mu\text{A}$

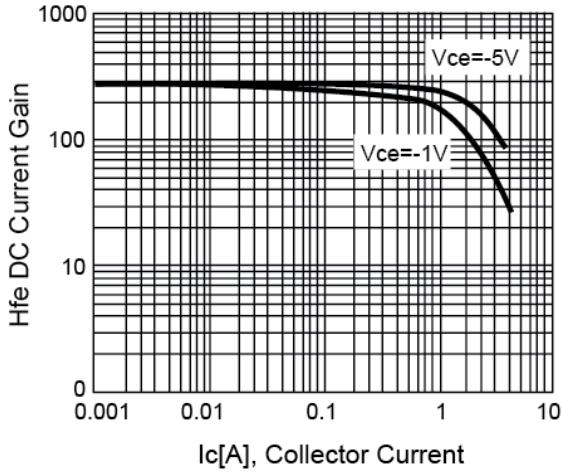
\* Pulse Test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$

**ORDERING INFORMATION**

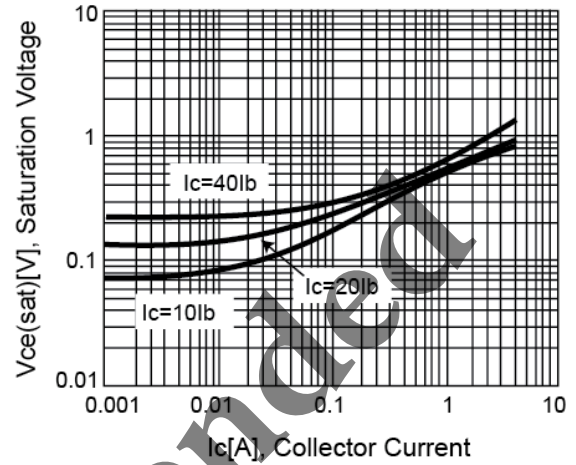
PART NO.	PACKAGE	PACKING
TSB772CK B0G	TO-126	250pcs / Bulk Bag
TSB772CK C0G	TO-126	50pcs / Tube

**ELECTRICAL CHARACTERISTICS CURVES** ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

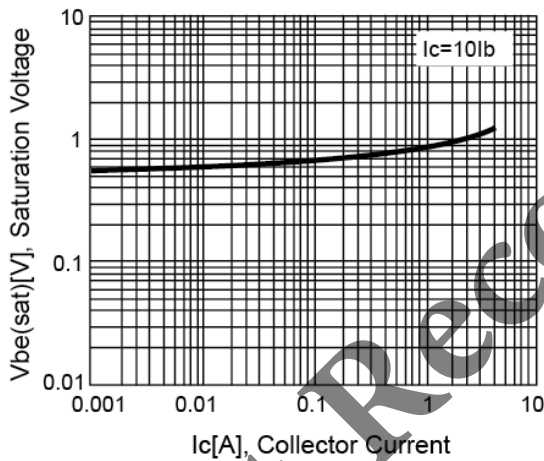
**Figure 1. DC Current Gain**



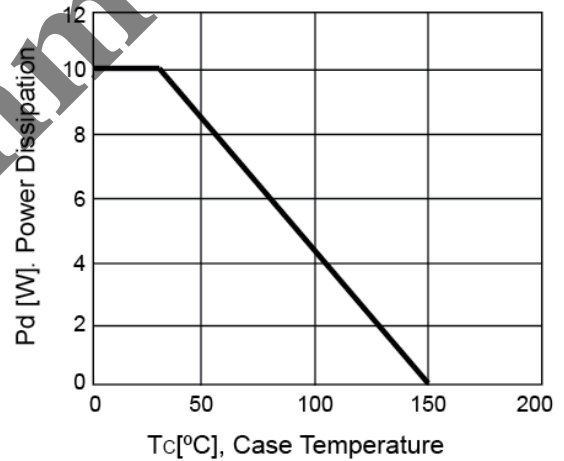
**Figure 2.  $V_{CE(SAT)}$  vs. Collector Current**



**Figure 3.  $V_{BE(SAT)}$  vs. Collector Current**



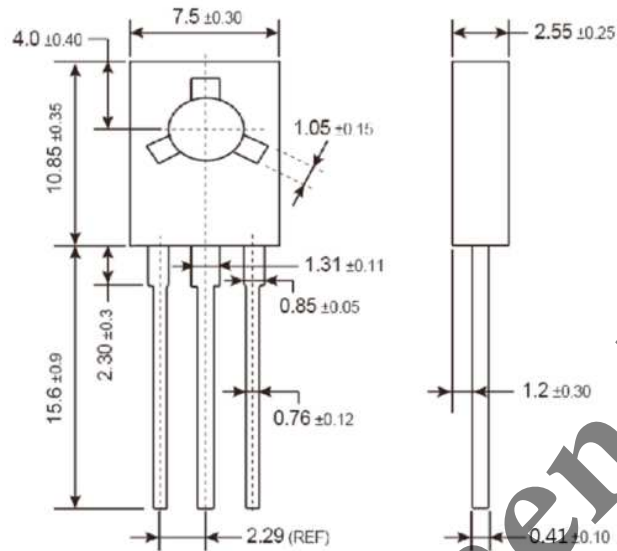
**Figure 4. Power Derating Curve**



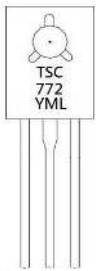
Not Recommended

**PACKAGE OUTLINE DIMENSIONS** (Unit: Millimeters)

**TO-126**



**MARKING DIAGRAM**



- Y = Year Code
- M = Month Code for Halogen Free Product
  - O =Jan    P =Feb    Q =Mar    R =Apr
  - S =May    T =Jun    U =Jul    V =Aug
  - W =Sep    X =Oct    Y =Nov    Z =Dec
- L = Lot Code

Not Recommended

**Not Recommended**

### Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.