



# THE DATASHEET OF BCX53-16-TP



## Features

- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 250 °C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-100	V
Collector-Emitter Voltage	$V_{CEO}$	-80	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-1.0	A
Collector Power Dissipation	$P_C$	500	mW <sup>(Note2)</sup>
		950	mW <sup>(Note3)</sup>
		1350	mW <sup>(Note4)</sup>

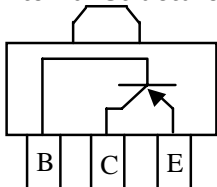
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, t in-plated and standard footprint.

3. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm<sup>2</sup>.

4. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm<sup>2</sup>.

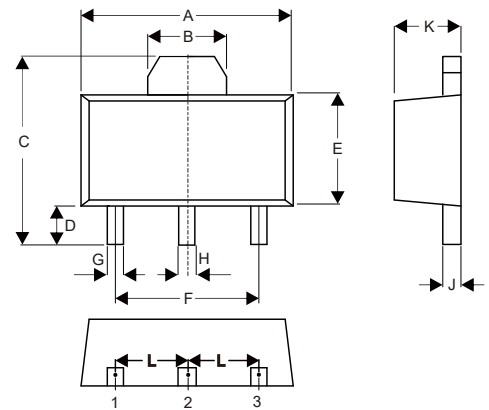
## Internal Structure



**Marking:**  
BCX53=AH,  
BCX53-10=AK  
BCX53-16=AL

# PNP Plastic Encapsulate Transistor

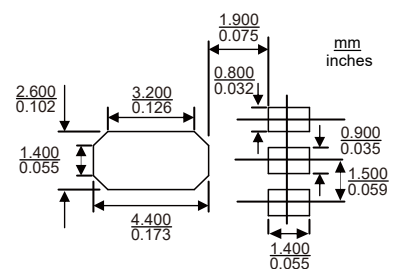
## SOT-89



## DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.061		1.55		TYP.
C	0.154	0.171	3.91	4.35	
D	0.031	0.047	0.80	1.20	
E	0.089	0.104	2.25	2.65	
F	0.118		3.00		TYP.
G	0.013	0.020	0.33	0.52	
H	0.015	0.021	0.38	0.53	
J	0.014	0.017	0.35	0.44	
K	0.055	0.063	1.40	1.60	
L	0.059		1.50		TYP.

## Suggested Solder Pad Layout



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-100			V	$I_C=-100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage <sup>(Note5)</sup>	$V_{(BR)CEO}$	-80			V	$I_C=-10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E=-100\mu A, I_C=0$
Collector Cutoff Current	$I_{CBO}$			-0.1	$\mu A$	$V_{CB}=-30V, I_E=0$
Emitter-Base Cutoff Current	$I_{EBO}$			-0.1	$\mu A$	$V_{EB}=-5V, I_C=0$
DC Current Gain <sup>(Note5)</sup>	$h_{FE1}$	63				$V_{CE}=-2V, I_C=-5mA$
DC Current Gain <sup>(Note5)</sup>	BCX53	63		250		$V_{CE}=-2V, I_C=-150mA$
	BCX53-10	63		160		
	BCX53-16	100		250		
DC Current Gain <sup>(Note5)</sup>	$h_{FE3}$	40				$V_{CE}=-2V, I_C=-500mA$
Collector-Emitter Saturation Voltage <sup>(Note5)</sup>	$V_{CE(sat)}$			-0.5	V	$I_C=-500mA, I_B=-50mA$
Base-Emitter Saturation Voltage <sup>(Note5)</sup>	$V_{BE(sat)}$			-1.0	V	$I_C=-500mA, V_{CE}=-2.0V$
Transition Frequency	$f_T$		50		MHz	$V_{CE}=-5V, I_C=-10mA, f=100MHz$

Note:

5.Pulse Test

**Curve Characteristics**

Fig. 1 - Static Characteristics

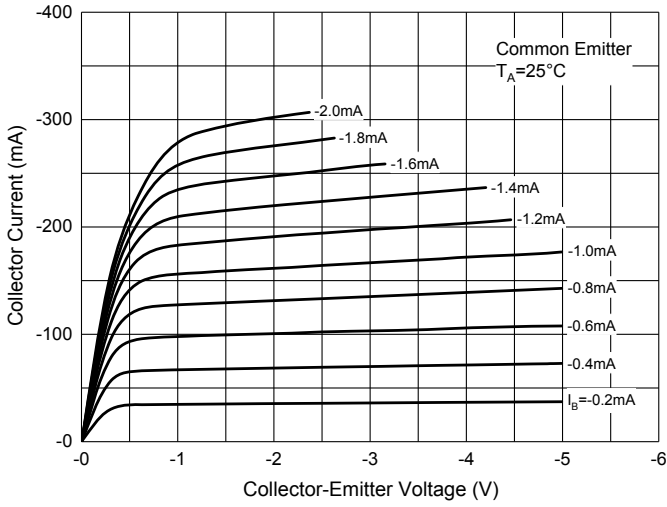


Fig. 2 - DC Current Gain Characteristics

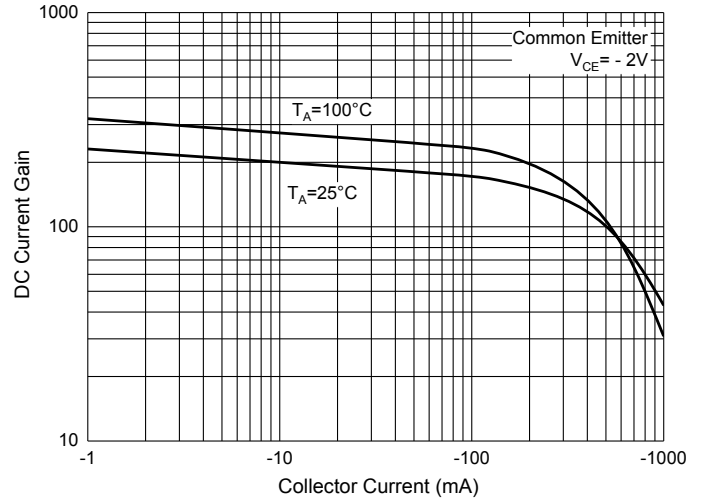


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

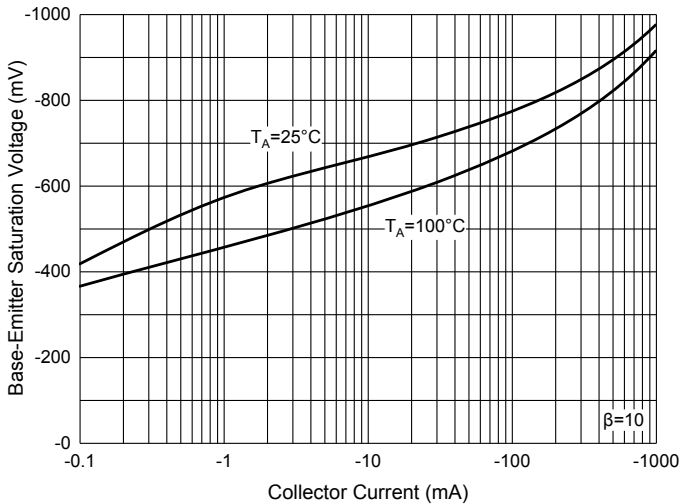


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

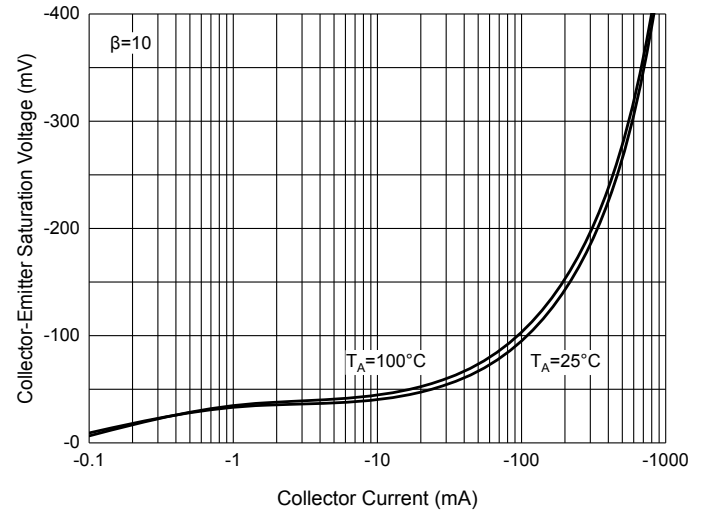


Fig. 5 - Base-Emitter Voltage Characteristics

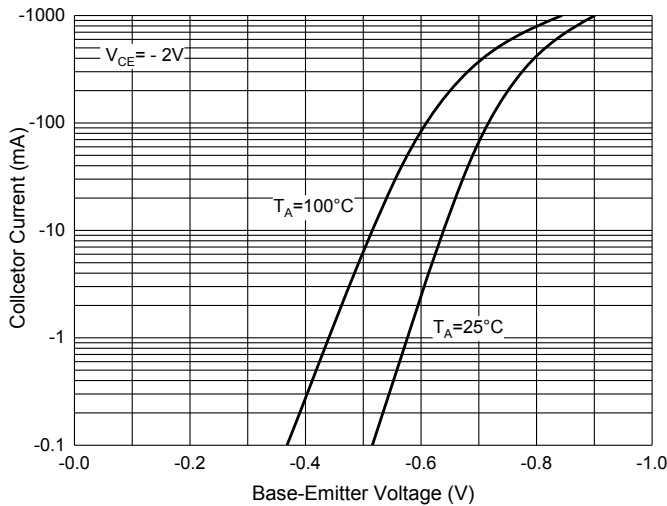
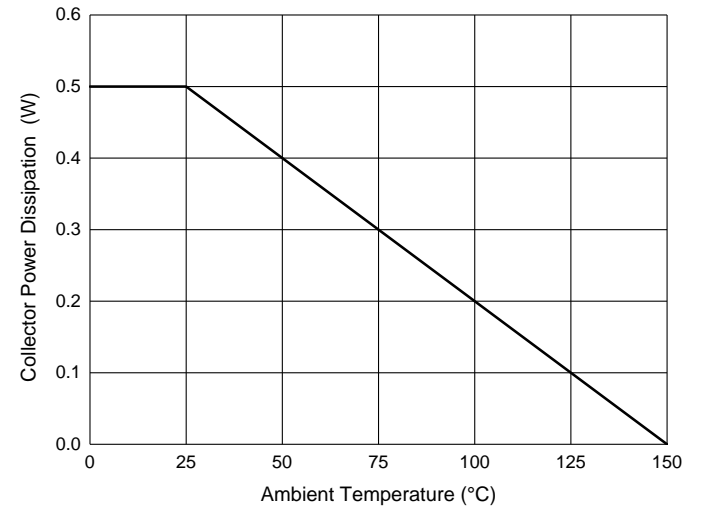


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 1Kpcs/Reel

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