

## Features

- Epitaxial Die Construction
- Complementary PNP Type Available BC857BV
- Ultra-Small Surface Mount Package
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

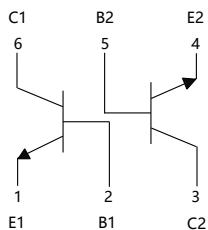
## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 833°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	100	mA
Collector Power Dissipation	$P_C$	150	mW

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

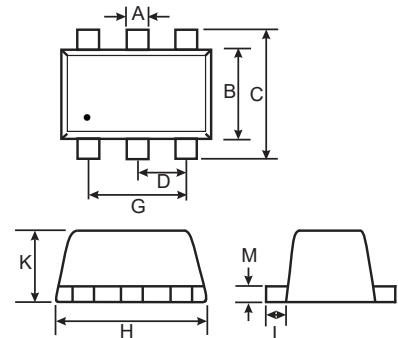
## Internal Structure



Marking: K4V

# NPN Plastic Encapsulate Amplifier

## SOT-563



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.006	0.011	0.15	0.30	
B	0.043	0.051	1.10	1.30	
C	0.059	0.067	1.50	1.70	
D	0.020		0.50		TYP.
G	0.035	0.043	0.90	1.10	
H	0.059	0.067	1.50	1.70	
K	0.022	0.026	0.55	0.65	
L	0.004	0.011	0.10	0.30	
M	0.004	0.007	0.10	0.18	

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

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=1\mu A, I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			15	nA	$V_{CB}=30V, I_E=0$
Emitter-Base Cutoff Current	$I_{EBO}$			100	nA	$V_{EB}=5V, I_C=0$
DC Current Gain	$h_{FE}$	200		450		$V_{CE}=5V, I_C=2mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.1	V	$I_C=10mA, I_B=0.5mA$
				0.3	V	$I_C=100mA, I_B=5mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.7		V	$I_C=10mA, I_B=0.5mA$
			0.9		V	$I_C=100mA, I_B=5mA$
Base-Emitter Voltage	$V_{BE}$	0.58	0.66	0.7	V	$V_{CE}=5V, I_C=2mA$
				0.77	V	$V_{CE}=5V, I_C=10mA$
Collector Output Capacitance	$C_{ob}$			4.5	pF	$V_{CB}=10V, I_E=0, f=1MHz$
Transition Frequency	$f_T$	100			MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$
Noise Figure	NF			10	dB	$V_{CE}=5V, f=1KHz$ $R_S=2K\Omega, BW=200Hz$

**Curve Characteristics**

Fig. 1 - Static Characteristics

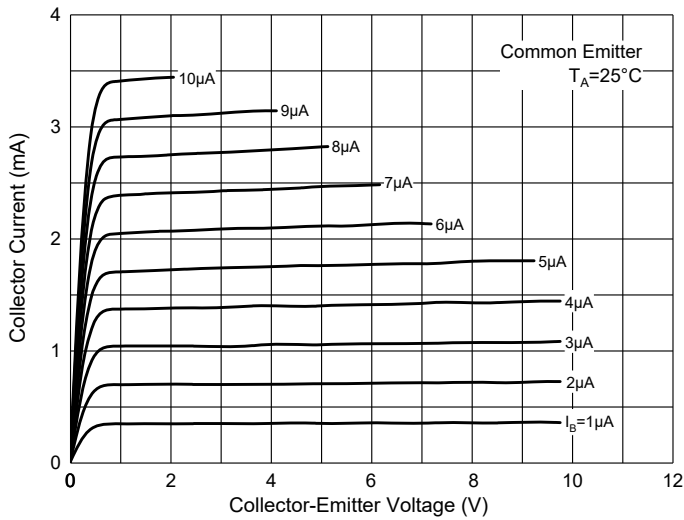


Fig. 2 - DC Current Gain Characteristics

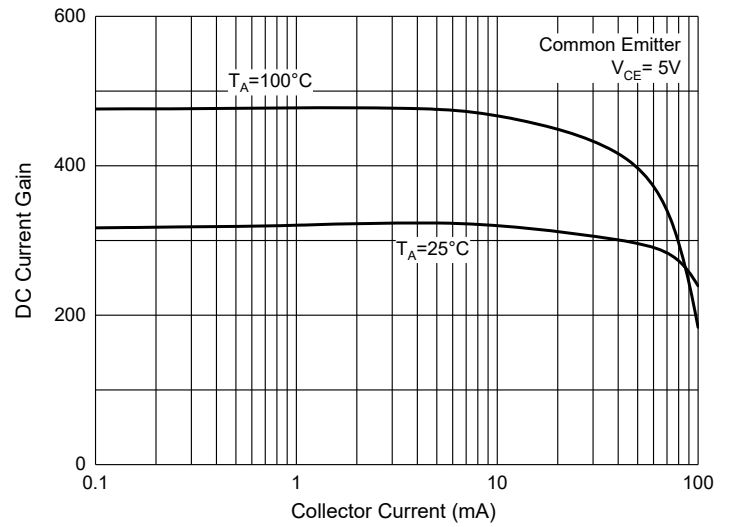


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

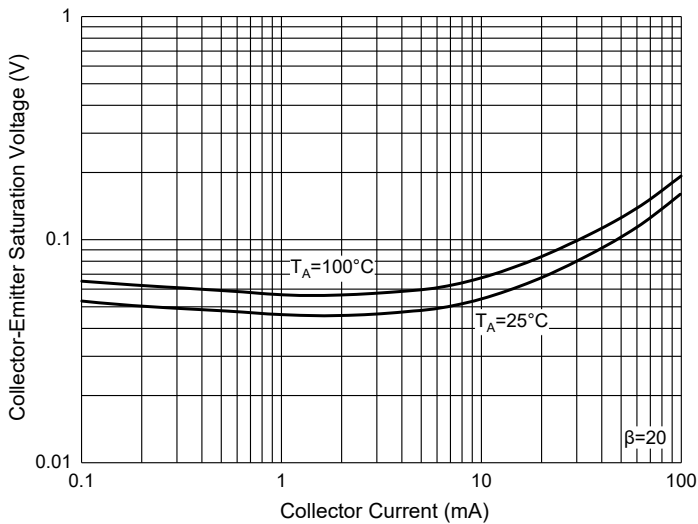


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

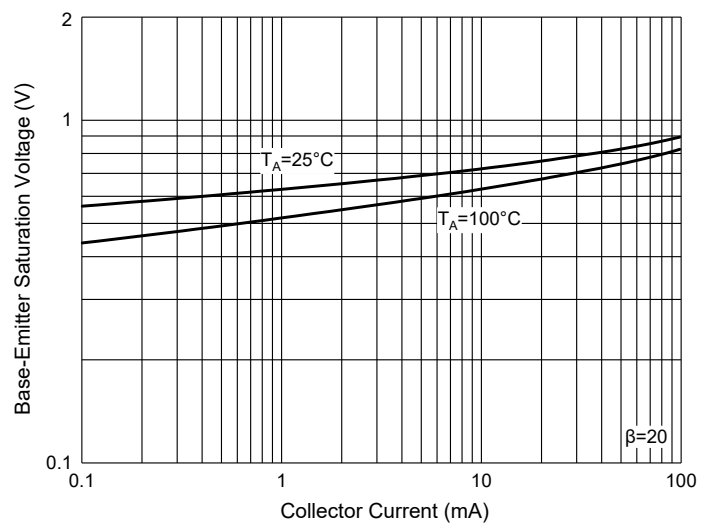


Fig. 5 - Base-Emitter Voltage Characteristics

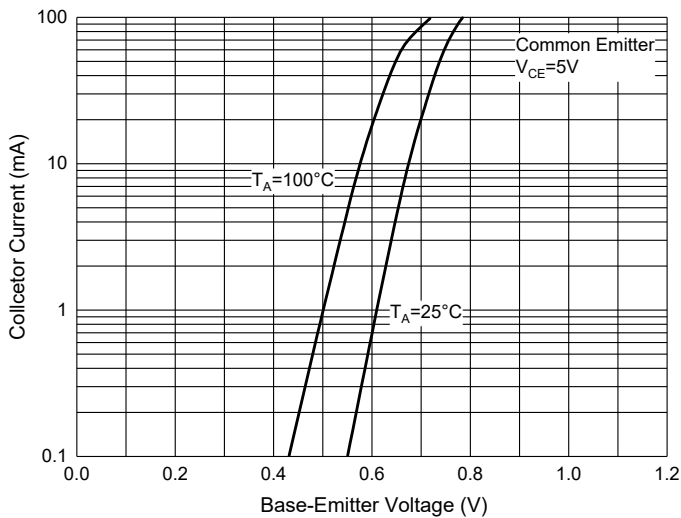


Fig. 6 - Collector Power Derating Curve

