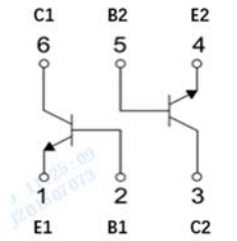
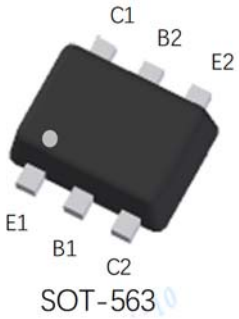
Dual NPN Small Signal Transistor





SOT-563

Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic Insertion
- Epoxy meets UL-94 V-0 flammability rating

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package**: SOT-563
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				K4V
Collector-base voltage	V_{CBO}	V	I_C=10uA,I_E=0	50
Collector-emitter voltage	V_{CEO}	V	I_C=10mA,I_B=0	45
Emitter-base voltage	V_{EBO}	V	I_E=10uA,I_C=0	6
Collector current	I_C	mA		100
Power dissipation	P_D	mW		150
Junction temperature	T_J	℃		-55 to +150
Storage temperature	T_{STG}	℃		-55 to +150

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C=10uA,I_E=0	50		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C=10mA,I_B=0	45		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=10uA,I_C=0	6		
Collector cut-off current	I_{CBO}	nA	V_{CB}=30V,I_B=0			15
Emitter-base cutoff current	I_{EBO}	nA	V_{EB}=5V, I_C=0			100
DC current gain	h_{FE}		V_{CE}=5V,I_C=2mA	200		450
Collector-emitter saturation voltage	$V_{CE(sat)1}$	V	I_C=10mA,I_B=0.5mA			0.1
	$V_{CE(sat)2}$	V	I_C=100mA,I_B=5mA			0.3
Base-emitter saturation voltage	$V_{BE(sat)1}$	V	I_C=10mA,I_B=0.5mA		0.7	
	$V_{BE(sat)2}$	V	I_C=100mA,I_B=5mA		0.9	
Base-emitter voltage	V_{BE1}	V	V_{CE}=5V,I_C=2mA	0.58	0.66	0.7
	V_{BE2}	V	V_{CE}=5V, I_C=10mA			0.77
Transition frequency	f_T	MHz	V_{CE}=5V,I_C=10mA,f=100MHz	100		

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	833
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	667

Note:

（1）Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BC847BV	F2	Approximate 0.0035	3000	30000	120000	7” reel

■Characteristics

Fig 1：Static Characteristics

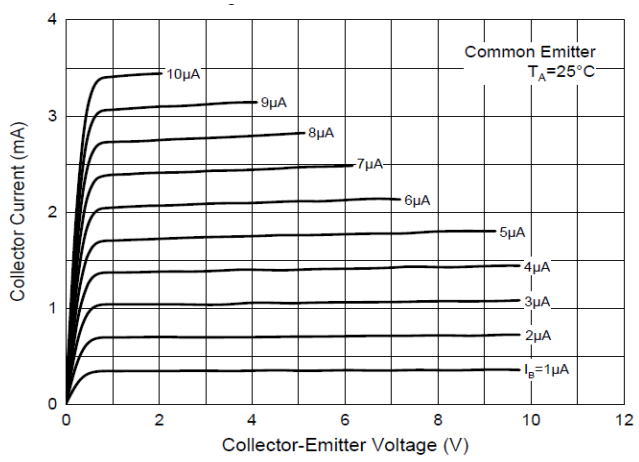


Fig 2：DC Current Gain Characteristics

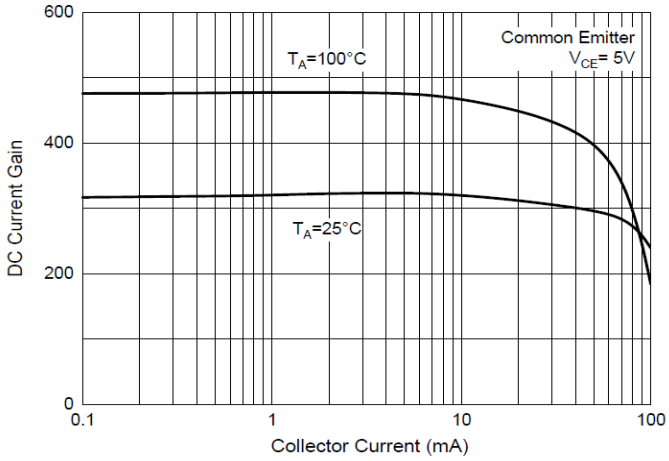


Fig 3：Collector-Emitter Saturation Voltage

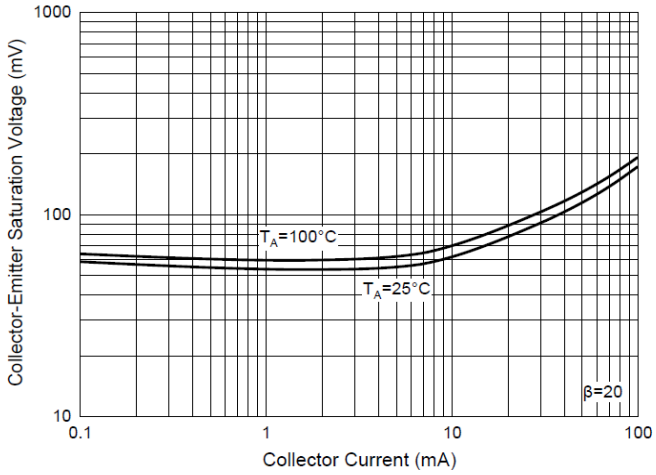


Fig 4：Base-Emitter Saturation Voltage

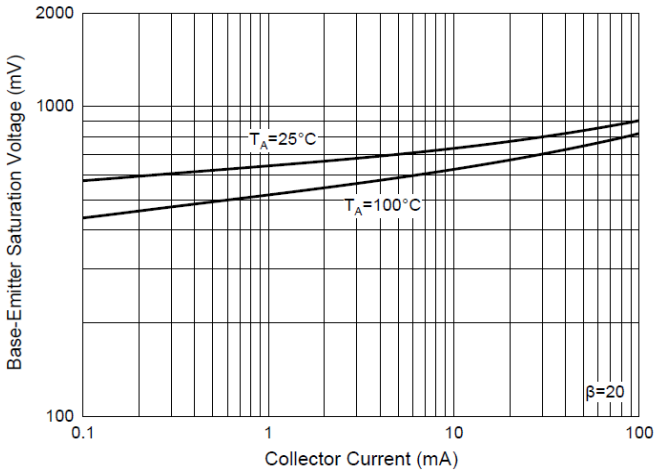


Fig 5：Base-emitter on voltage

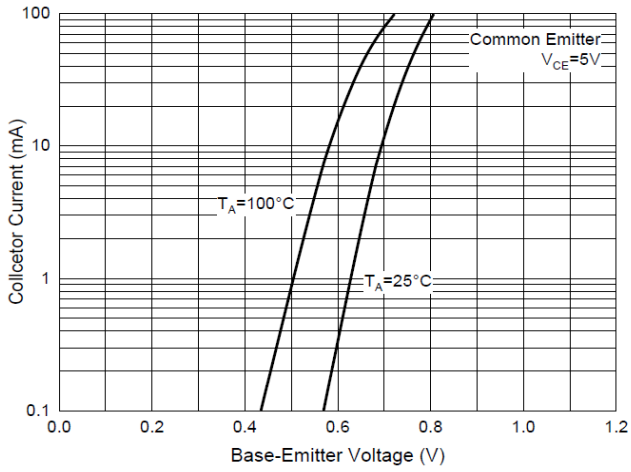
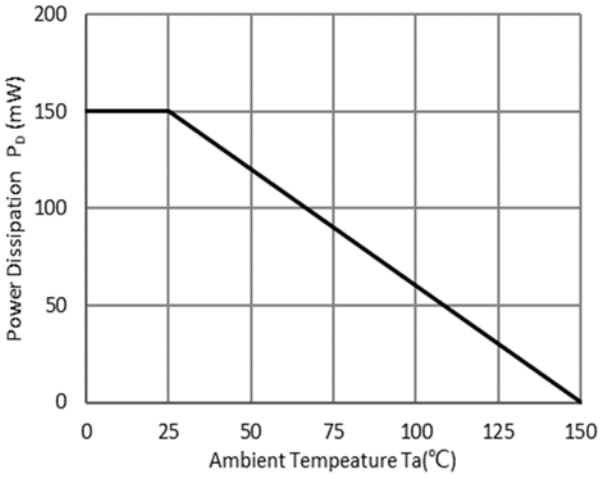
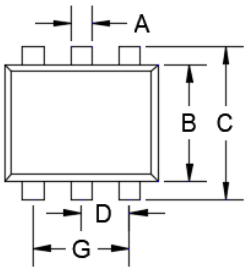


Fig 6：P_D-Ta Curve

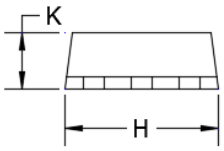


■ Outline Dimensions

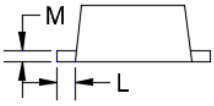
SOT-563



TOP VIEW



SIDE VIEW

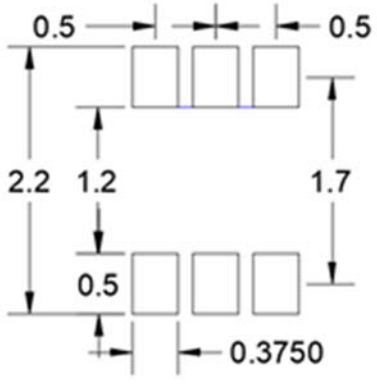


SIDE VIEW

DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	MAX
A	0.006	0.011	0.150	0.300
B	0.043	0.051	1.100	1.300
C	0.059	0.067	1.500	1.700
D	0.016	0.024	0.400	0.600
G	0.035	0.043	0.900	1.100
H	0.059	0.067	1.500	1.700
K	0.021	0.026	0.550	0.650
L	0.004	0.011	0.100	0.300
M	0.004	0.007	0.100	0.180

Note:
1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位，除非另有说明]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4.All dimensions shown are exclusive of burrs and gate residues.
Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5.Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6.Dimensions B and H are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[B和H是塑封体的外部极限尺寸，不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺，但是包含了包封错位的最大尺寸]
7.Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面，共面性最大为0.1mm]

■ Suggested Pad Layout



UNIT:mm

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

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 STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.