

## Features

- For Switching and AF Amplifier Applications
- 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)

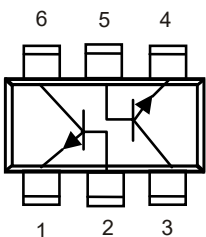
## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	65	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	100	mA
Collector Power Dissipation	$P_C$	200	mW

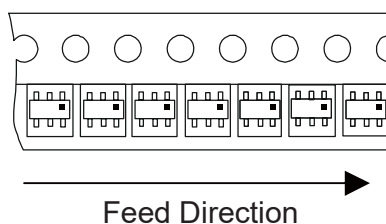
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Internal Structure



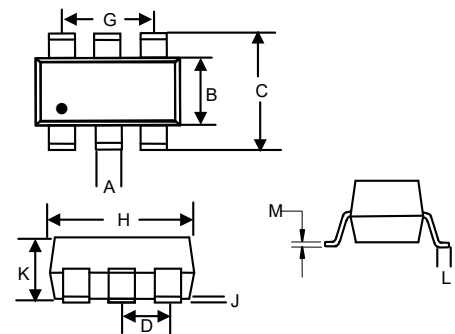
Marking: 4Ft

Special packing as below



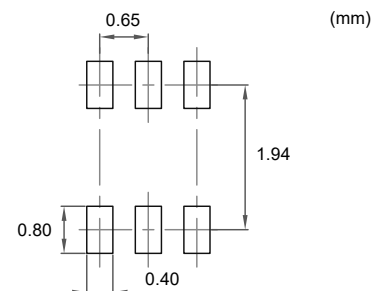
# Dual NPN Small Signal Transistors

## SOT-363



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.006	0.014	0.15	0.35	
B	0.045	0.053	1.15	1.35	
C	0.079	0.096	2.00	2.45	
D	0.026		0.65		TYP.
G	0.047	0.055	1.20	1.40	
H	0.071	0.087	1.80	2.20	
J	-----	0.004	-----	0.10	
K	0.031	0.043	0.80	1.10	
L	0.010	0.018	0.26	0.46	
M	0.003	0.006	0.08	0.15	

## Suggested Solder Pad Layout



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

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	65			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=10\mu A, I_C=0$
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 <sup>(Note2)</sup>	$h_{FE}$ BC846S BC846BS	110				$V_{CE}=5V, I_C=2mA$
		200		450		
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	$V_{BE(sat)}$		0.75	0.85	V	$I_C=10mA, I_B=0.5mA$
Base-Emitter Voltage	$V_{BE}$			0.7	V	$V_{CE}=5V, I_C=2mA$
				0.77	V	$V_{CE}=5V, I_C=10mA$
Transition Frequency	$f_T$		100		MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$
Output Capacitance	$C_{ob}$		1.5		pF	$V_{CB}=10V, I_E=0, f=1MHz$

 Note: 2. Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

**Curve Characteristics**

Fig. 1 - Static Characteristics

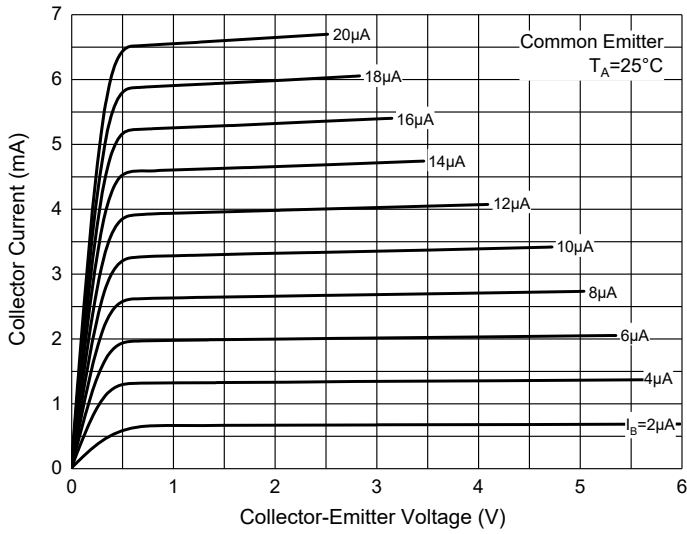


Fig. 2 - DC Current Gain Characteristics

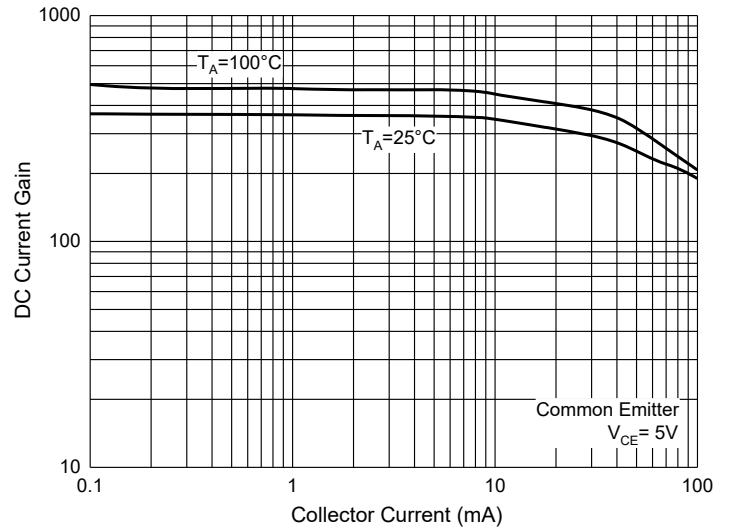


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

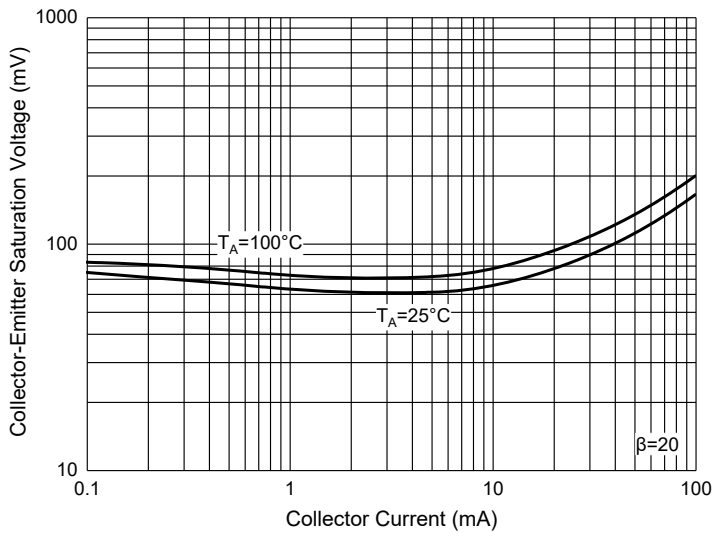


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

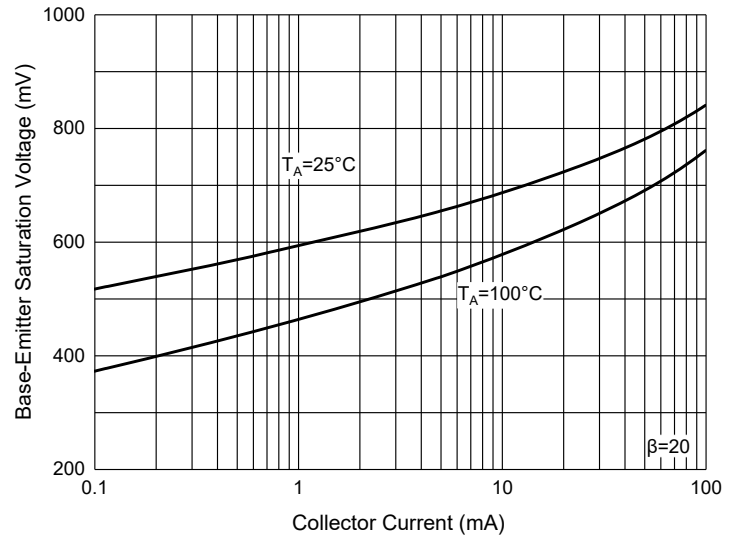


Fig. 5 - Base-Emitter Voltage Characteristics

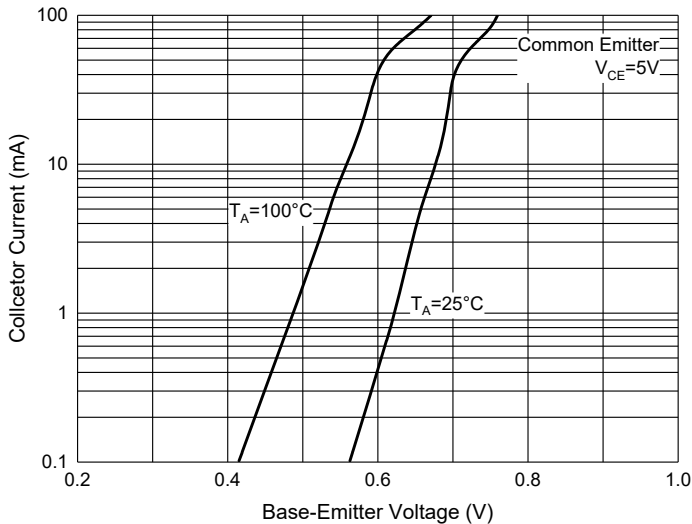
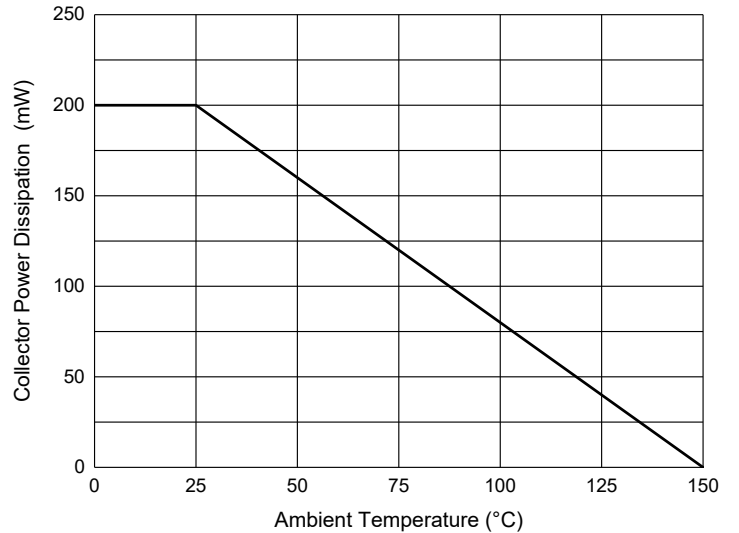


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
BC846S-TPQ2/BC846BS-TPQ2	Tape&Reel: 3Kpcs/Reel

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