

PNP general purpose transistor

BC856W; BC857W; BC858W

FEATURES

- S- mini package.

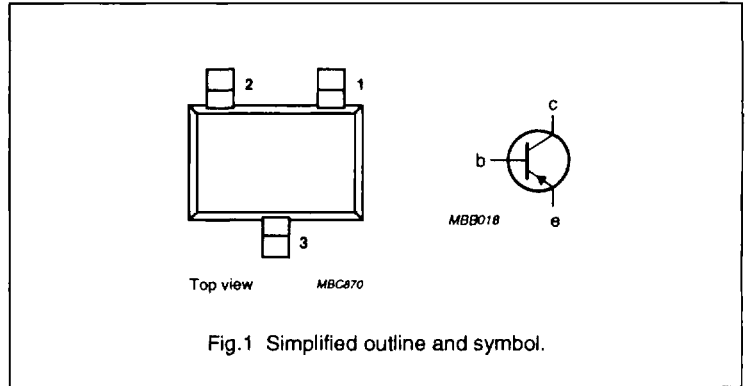
DESCRIPTION

NPN transistor in a plastic SOT323 package.

PINNING - SOT323

PIN	DESCRIPTION
1	base
2	emitter
3	collector

PIN CONFIGURATION



MARKING CODES

BC856W:	3D
BC856AW:	3A
BC856BW:	3B
BC857W:	3H
BC857AW:	3E
BC857BW:	3F
BC857CW:	3G
BC858W:	3M
BC858AW:	3J
BC858BW:	3K
BC858CW:	3L

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT	
$V_{CEX}$	collector-emitter voltage	$V_{BE} = 1\text{ V}$				
			BC856W	-	-80	V
			BC857W	-	-50	V
			BC858W	-	-30	V
$V_{CEO}$	collector-emitter voltage	open base				
			BC856W	-	-65	V
			BC857W	-	-45	V
			BC858W	-	-30	V
$I_{CM}$	peak collector current		-	-200	mA	
$P_{tot}$	total power dissipation	up to $T_{amb} = 25\text{ °C}$	-	200	mW	
$h_{FE}$	DC current gain	$I_C = -2\text{ mA}$ ; $V_{CE} = -5\text{ V}$ ; $T_{amb} = 25\text{ °C}$	125	800		
$f_T$	transition frequency	$I_C = -10\text{ mA}$ ; $V_{CE} = -5\text{ V}$ ; $T_{amb} = 25\text{ °C}$	100	-	MHz	

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**LIMITING VALUES**

In accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter			
	BC856W		-	-80	V
	BC857W		-	-50	V
	BC858W		-	-30	V
$V_{CEX}$	collector-emitter voltage	$V_{BE} = 1\text{ V}$			
	BC856W		-	-80	V
	BC857W		-	-50	V
	BC858W		-	-30	V
$V_{CEO}$	collector-emitter voltage	open base			
	BC856W		-	-65	V
	BC857W		-	-45	V
	BC858W		-	-30	V
$V_{EBO}$	emitter-base voltage	open collector	-	-5	V
$I_C$	DC collector current		-	-100	mA
$I_{CM}$	peak collector current		-	-200	mA
$I_{EM}$	peak emitter current		-	200	mA
$I_{BM}$	peak base current		-	-200	mA
$P_{tot}$	total power dissipation	up to $T_{amb} = 25\text{ °C}$ (note 1) see Fig.2	-	200	mW
$T_{stg}$	storage temperature		-65	150	°C
$T_J$	junction temperature		-	150	°C
$T_{amb}$	operating ambient temperature	see Fig.2	-65	150	°C

**Note**

1. Refer to SOT323 standard mounting conditions.

**THERMAL RESISTANCE**

SYMBOL	PARAMETER	CONDITIONS	THERMAL RESISTANCE
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air (note 1)	max. 625 K/W

**Note**

1. Refer to SOT323 standard mounting conditions.

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## CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	-	-15	nA
		$I_E = 0; V_{CB} = -30\text{ V}; T_J = 150\text{ }^{\circ}\text{C}$	-	-4	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	-	-500	nA
$V_{BE}$	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	-600	-750	mV
		$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}$	-	-820	mV
$V_{CE(sat)}$	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	-	-300	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}$ (note 1)	-	-650	mV
$C_c$	collector capacitance	$I_E = I_{\sigma} = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	-	5	pF
$f_T$	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ $f = 100\text{ MHz}$	100	-	MHz
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V};$ $R_S = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}$	-	10	dB
$h_{FE}$	DC current gain BC856W; BC857W; BC858W BC856AW; BC857AW; BC858AW BC856BW; BC857BW; BC858BW BC856CW; BC857CW; BC858CW	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$	125	800	
			125	250	
			220	475	
			420	800	

## Note

1. Pulse test :  $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$

