

PNP general purpose transistor

BC856W; BC857W; BC858W

N AMER PHILIPS/DISCRETE

67E D

FEATURES

- S- mini package.

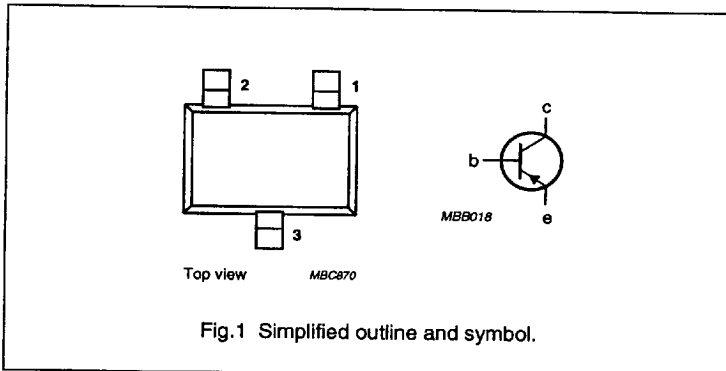
DESCRIPTION

PNP transistor in a plastic SOT323 (SC70) 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	μA
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	$I_E = I_C = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	—	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	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$			
	BC856W; BC857W; BC858W		125	800	
	BC856AW; BC857AW; BC858AW		125	250	
	BC856BW; BC857BW; BC858BW		220	475	
	BC856CW; BC857CW; BC858CW		420	800	

Note

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

