RATINGS 81C 00120 D

T-37-17

The ratings quoted are limiting values of operating and environmental conditions and are in accordance with the absolute maximum rating system defined in BS 3494 (Part 1) and IEC Publication 134.

Voltage Ratings

V_{CBO}	Collector-base voltage at $I_E = 0$	60V
V_{CEO}	Collector-emitter voltage at $I_B = 0$	40V
V_{EBO}	Emitter-base voltage at $I_C = 0$	5V

Current Rating

I_C	Collector current (continuous)	600mA

Power Ratings

P_{tot}	Total power dissipation	
	$T_{amb} = 25°C$	0.4W
	$T_{case} = 25°C$	1.8W

Thermal Ratings

T_j	Operating junction temperature range	−65°C to +200°C
T_{stg}	Storage temperature range	−65°C to +200°C

CHARACTERISTICS

Electrical Characteristics

		Min.	Typ.	Max.
I_{CBO}	Collector-base cut-off current			
	$V_{CB} = 50V$, $I_E = 0$ and $T_{amb} = 25°C$			20nA
	$V_{CB} = 50V$, $I_E = 0$ and $T_{amb} = 150°C$			20μA
I_{CEX}	Collector-emitter cut-off current at			
	$V_{CE} = 30V$, $V_{BE} = 0.5V$ and $T_{amb} = 25°C$			50nA
I_{BEX}	Base-emitter cut-off current at			
	$V_{BE} = 0.5V$, $V_{CE} = 30V$ and $T_{amb} = 25°C$			50nA
V_{CBO}	Collector-base voltage at			
	$I_C = 10μA$, $I_E = 0$ and $T_{amb} = 25°C$	60V		
$V_{CEO(sus)}$	*Collector-emitter sustaining voltage at			
	$I_C = 10mA$, $I_B = 0$ and $T_{amb} = 25°C$	40V		
V_{EBO}	Emitter-base voltage at			
	$I_C = 0$, $I_E = 10μA$ and $T_{amb} = 25°C$	5V		
$V_{BE(sat)}$	*Base-emitter saturation voltage			
	$I_C = 150mA$, $I_B = 15mA$ and $T_{amb} = 25°C$			1.3V
	$I_C = 500mA$, $I_B = 50mA$ and $T_{amb} = 25°C$			2.6V
$V_{CE(sat)}$	*Collector-emitter saturation voltage			
	$I_C = 150mA$, $I_B = 15mA$ and $T_{amb} = 25°C$			0.4V
	$I_C = 500mA$, $I_B = 50mA$ and $T_{amb} = 25°C$			1.6V

1.8W PNP GENERAL PURPOSE SMALL SIGNAL TRANSISTORS

2N2906
2N2907

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Electrical Characteristics (continued)

		Min.	Typ.	Max.
h_{FE}	Static value of common emitter forward current transfer ratio			
	$V_{CE} = 10V, I_C = 0.1mA$ and $T_{amb} = 25°C$			
	2N2906	20		
	2N2907	35		
	$V_{CE} = 10V, I_C = 1.0mA$ and $T_{amb} = 25°C$			
	2N2906	25		
	2N2907	50		
	$V_{CE} = 10V, I_C = 10mA$ and $T_{amb} = 25°C$			
	2N2906	35		
	2N2907	75		
	$V_{CE} = 10V, I_C = 150mA^*$ and $T_{amb} = 25°C$			
	2N2906	40		120
	2N2907	100		300
	$V_{CE} = 10V, I_C = 500mA^*$ and $T_{amb} = 25°C$			
	2N2906	20		
	2N2907	30		
f_T	Transition frequency at $V_{CE} = 20V, I_C = 50mA, f = 100MHz$ and $T_{amb} = 25°C$	200MHz		
C_{EBO}	Emitter-base capacitance at $V_{EB} = 2V, I_C = 0, f = 100$ kHz and $T_{amb} = 25°C$			30pF
C_{CBO}	Collector-base capacitance at $V_{CB} = 10V, I_E = 0, f = 100$ kHz and $T_{amb} = 25°C$			8pF

*Pulsed; $t_p = 300\,\mu s$; duty cycle 1%

Switching Times

($I_C = 150mA, I_{B1} = -I_{B2} = 15mA, V_{CC} = 30V$ (t_d and t_r) or 6V (t_s and t_f) and $T_{amb} = 25°C$)

		Min.	Typ.	Max.
t_d	Delay time			10ns
t_r	Rise time			40ns
t_s	Storage time			80ns
t_f	Fall time			30ns

Thermal Characteristics

		Min.	Typ.	Max.
$R_{th(j\text{-}case)}$	Thermal resistance (junction to case)			97.3 deg C/W
$R_{th(j\text{-}amb)}$	Thermal resistance (junction to ambient)			437.5 deg C/W

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MECHANICAL DETAILS

Outline and Dimensions

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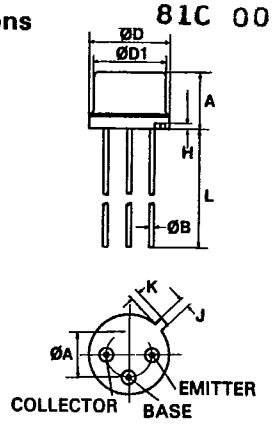

Ref.	Millimetres		Inches		Notes
	Min.	Max.	Min.	Max.	
A	4.32	5.33	0.170	0.210	
ØA	2.54 nom.		0.100 nom.		
ØB	0.41	0.53	0.016	0.021	
ØD	5.31	5.84	0.209	0.230	
ØD1	4.52	4.95	0.178	0.195	
H	0.13	0.76	0.005	0.030	
J	0.92	1.16	0.036	0.046	
K	0.71	1.21	0.028	0.048	
L	12.7	—	0.500	—	

Notes

1. The transistors conform to BS SO-132A, IEC C7/B11 and JEDEC TO-18 outlines.
2. The millimetre dimensions are derived from the inch dimensions.

Weight 0.3 gramme.

INSTALLATION NOTES

The emitter, base and collector leads are identified on the transistor outline. Note the collector is connected also to the case.

The leads must not be bent within 0.06in (1.5mm) of the seals.

When soldering, a thermal shunt should be used to protect the transistor.

The transistor leads may be dip-soldered at at temperature of 240°C for 10 seconds up to a point 0.04in (1mm) from the seals.

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