POWER TRANSISTOR

NPN SILICON

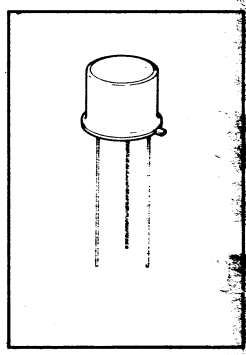
BC323

GENERAL PURPOSE POWER DEVICE FOR EUROPEAN MARKET

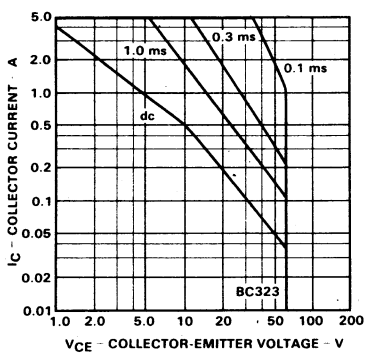
- 7.0 W DISSIPATION AT 25°C CASE
- 5.0 A MAXIMUM CONTINUOUS COLLECTOR CURRENT
- 0.15 $V_{CE(sat)}$ MAXIMUM @ 500 mA

3SOLUTE MAXIMUM RATINGS (Note 1)

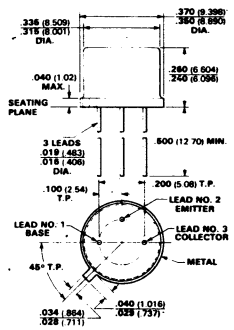
		BC323
Maximum Voltages and Currents		
V_{CEO}	Collector to Emitter Voltage	60 V
V_{CBO}	Collector to Base Voltage	100 V
V_{EBO}	Emitter to Base Voltage	5.0 V
I_C	Continuous Collector Current	5.0 A
Maximum Power Dissipation		
P_D	Total Dissipation @ 25°C Case Temperature	7.0 W
	Derate Linearly from 25°C	40 mW/°C
Maximum Temperatures		
T_J, T_{stg}	Storage and Operation Junction Temperatures	−65°C to +200°C
Thermal Characteristics		
$R_{\theta JC}$	Thermal Resistance, Junction to Case	25°C/W



SAFE OPERATING AREA



JEDEC (TO-39) Outline



NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Leads are gold-plated kovar
Lead No. 3 connected to case
Package weight is 1.23 grams

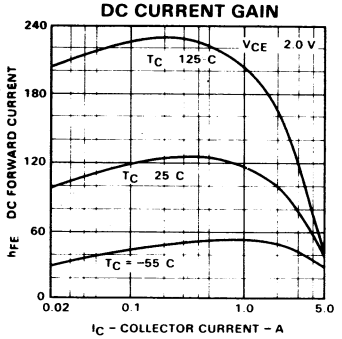
ELECTRICAL CHARACTERISTICS (25°C Case Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	BC323 MIN	BC323 MAX	UNIT	TEST CONDITIONS
OFF CHARACTERISTICS					
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage (Note 1)	60		V	I_C = 50 mA, I_B = 0
V_{CES}	Collector-Emitter Breakdown Voltage	100		V	I_C = 1.0 mA, V_{BE} = 0
V_{EBO}	Emitter-Base Breakdown Voltage	5.0		V	I_E = 1.0 mA, I_C = 0
I_{CBO}	Collector Cutoff Current		0.1	mA	V_{CB} = 100 V, I_E = 0
			0.01	mA	V_{CB} = 40 V, I_E = 0
		0.35 TYP		μA	V_{CB} = 40 V, I_E = 0, T_C = 75°C
I_{EBO}	Emitter Cutoff Current		0.01	mA	V_{EB} = 4.0 V, I_C = 0
ON CHARACTERISTICS					
h_{FE}	DC Current Gain (Note 1)	40	225		I_C = 50 mA, V_{CE} = 1.0 V
		50	250		I_C = 500 mA, V_{CE} = 1.0 V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (Note 1)		0.15	V	I_C = 500 mA, I_B = 50 mA
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (Note 1)		0.9	V	I_C = 500 mA, I_B = 50 mA
DYNAMIC CHARACTERISTICS					
C_{ob}	Output Capacitance		80	pF	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz
C_{eb}	Emitter-Transition Capacitance		500	pF	V_{EB} = 0.5 V, I_C = 0, f = 1.0 MHz
h_{fe}	Small Signal Current Gain	5.0 TYP			I_C = 500 mA, V_{CE} = 5.0 V, f = 20 MHz

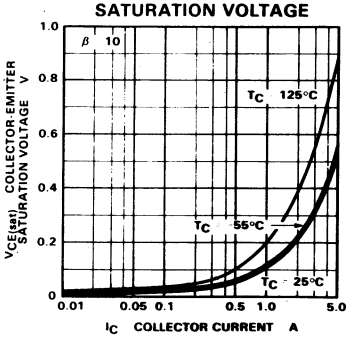
NOTE: 1. Pulse conditions: Length = 300 μs, Duty Cycle = 2%.

TYPICAL ELECTRICAL CHARACTERISTICS

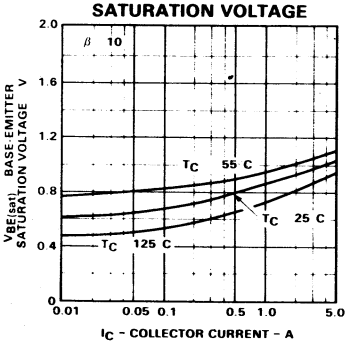
DC CURRENT GAIN



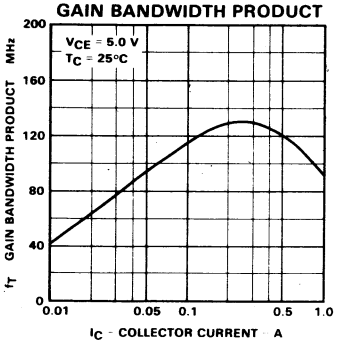
COLLECTOR-EMITTER SATURATION VOLTAGE



BASE-EMITTER SATURATION VOLTAGE



GAIN BANDWIDTH PRODUCT



OUTPUT CAPACITANCE