BC585 (NPN)
BC586 (PNP)

CASE 29-02, STYLE 17
TO-92 (TO-226AA)

SILICON TEMPERATURE SENSORS

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	20	Vdc
Collector-Base Voltage	V_{CBO}	25	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current – Continuous	I_C	50	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	350 2.8	mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.0 8.0	Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JC}$	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 10 mA, I_B = 0)	BV_{CEO}	20			Vdc
Collector-Base Breakdown Voltage (I_C = 10 μA, I_E = 0)	BV_{CBO}	25			Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μA, I_C = 0)	BV_{EBO}	5			Vdc
Collector Cutoff Current (V_{CB} = 15 V, I_E = 0)	I_{CBO}			100	nAdc
Emitter Cutoff Current (V_{EB} = 4 V, I_C = 0)	I_{EBO}			100	nAdc
DC Current Gain (I_C = 0.5 mA, V_{CE} = 5 V)	h_{FE}	120		320	
Base-Emitter On Voltage (I_C = 0.5 mA, V_{CE} = 5 V)	$V_{BE(on)}$	0.57		0.69	Vdc
Thermal Time Constant in Oil Bath	τ		10		sec

BC585 (NPN), BC586 (PNP)

FIGURE 1 – TYPICAL APPLICATION BC 585

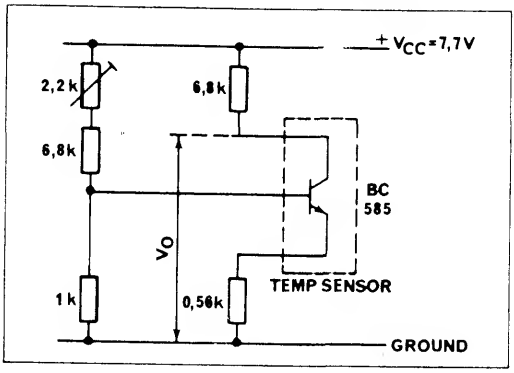


FIGURE 4 – TYPICAL APPLICATION BC 586

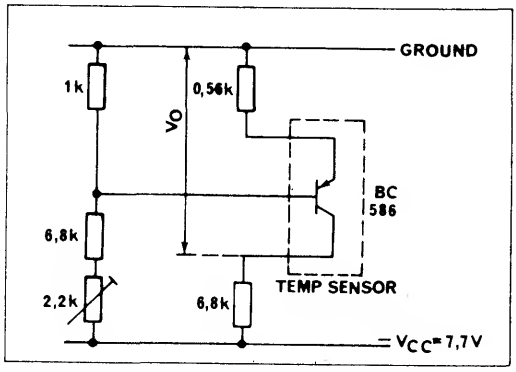


FIGURE 2 – OUTPUT VOLTAGE VERSUS TEMPERATURE

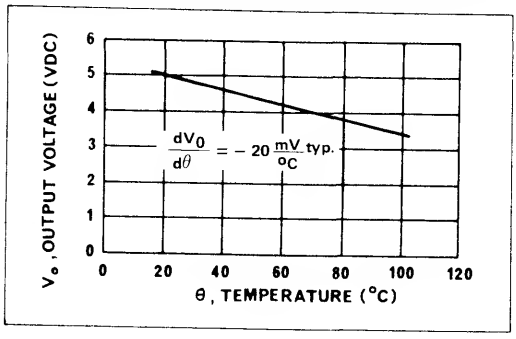


FIGURE 5 – OUTPUT VOLTAGE VERSUS TEMPERATURE

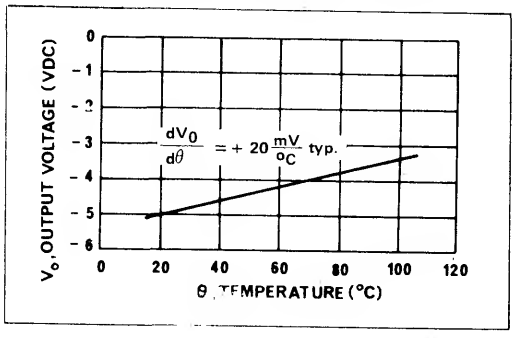


FIGURE 3 – TYP. ERROR DISTRIBUTION OF TEMP. COEF.

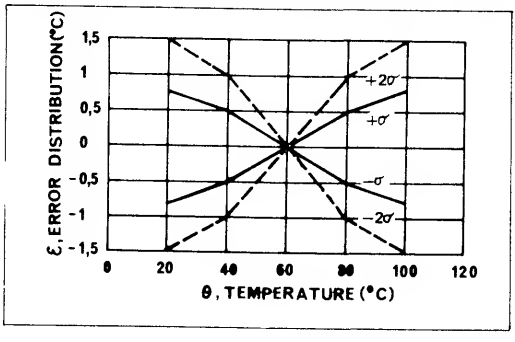
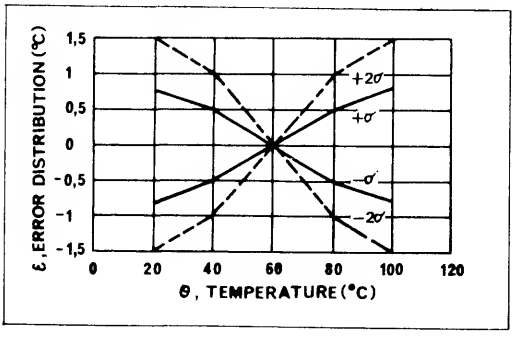


FIGURE 6 – TYP. ERROR DISTRIBUTION OF TEMP. COEF.



Note

These devices are mainly intended for use in temperature control applications using the following linear integrated circuits:

UAA 1004, UAA 1005 } zero voltage switch for on-off controls;

UAA 1006 zero voltage switch for proportional controls.