1.	VENDOR	PART NUMBER	CATALOG REFERENCE
A	SGS-THOMSON	BC 300	DBSMSIGST/1
B			
C			

2. DESCRIPTION..... NPN TRANSISTOR

3. VALUE.....80V; 0.5A;

4. SPECIFICATIONS NOT CALLED OUT IN VENDOR SPEC.....NONE

5. SPECIAL HANDLING REQUIREMENTS..... ESD PROTECTION: TO PROTECT AGAINST DAMAGE DUE TO ELECTROSTATIC DISCHARGE, THESE UNITS MUST BE MANUFACTURED,HANDLED,AND SHIPPED IN ACCORDANCE WITH DOD-STD-1686.

6. FOR VENDOR'S MECHANICAL AND ELECTRICAL SPECIFICATION,SEE REVERSE SIDE OF THIS DOCUMENT OR ATTACHED SHEETS.

7. SOLDERABILITY.....PARTS MUST MEET THE SOLDERABILITY REQUIREMENTS OF MIL-STD-202,METHOD 208.

8. THERMAL SHOCK ..... PARTS MUST MEET THE THERMAL SHOCK REQUIREMENTS OF MIL-STD-750, METHOD 1051.2

9. THE VENDOR HAS SUPPLIED A WRITTEN CONFIRMATION OF THIS SPECIFICATION CONTROL DOCUMENT.

REVISIONS		APPROVALS		
REV.	DESCRIPTION	ENG	PUR	QUAL
K	ECO#B13166 12/11/92	GGG	[signature]	[signature]

FIRST USED ON:	
ORIGINATED BY:	M.V. MV
HANDLING:	ESD
HAZARD:	
AGENCY:	
DWG. SIZE: A	

TITLE:

NPN TRANSISTOR

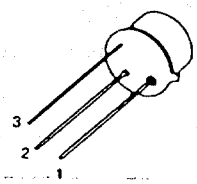
SCALE: N/A

LAMBDA ELECTRONICS

LAMBDA PART NO.	REV.
FBN-L109	K

TO-39

pin 1: Emitter - pin 2: Base - pin 3: Collector



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		BC300	BC301	BC302	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	120	90	60	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	80	60	45	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7			V
I_C	Collector Current	0.5			A
I_{CM}	Collector Peak Current	1			A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	0.85 6			W W
T_{stg}	Storage Temperature	– 65 to 175			°C
T_j	Junction Temperature	175			°C

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	25	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	V_{CB} = 60 V			5	20	nA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	V_{EB} = 5 V				10	nA
$V_{(BR)CEO}$*	Collector-emitter Breakdown Voltage ($I_B = 0$)	I_C = 30 mA	for BC300 for BC301 for BC302	80 60 45			V V V
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	I_C = 100 µA	for BC300 for BC301 for BC302	120 90 60			V V V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 150 mA	I_B = 15 mA		0.2	0.5	V
V_{BE}*	Base-emitter Voltage	I_C = 150 mA	V_{CE} = 10 V		0.78		V
h_{FE}*	DC Current Gain Gr. 4 Gr. 5 Gr. 6 	I_C = 150 mA I_C = 150 mA I_C = 150 mA I_C = 0.1 mA I_C = 500 mA	V_{CE} = 10 V V_{CE} = 10 V V_{CE} = 10 V V_{CE} = 10 V V_{CE} = 10 V	40 70 120 20 20		80 140 240	
f_T	Transition Frequency	I_C = 10 mA	V_{CE} = 10 V		100		MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$	V_{CB} = 10 V		12		pF
h_{ie}	Input Impedance	I_C = 5 mA f = 1 kHz	V_{CE} = 10 V		1.1		kΩ
h_{re}	Reverse Voltage Ratio	I_C = 5 mA f = 1 kHz	V_{CE} = 10 V		1.7×10^{-4}		
h_{fe}	Small Signal Current Gain	I_C = 5 mA f = 1 kHz	V_{CE} = 10 V		140		
h_{oe}	Output Admittance	I_C = 5 mA f = 1 kHz	V_{CE} = 10 V		14		µS

* Pulsed : pulse duration = 300 µs, duty cycle = 1 %.