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SPC-F005.DWG

REVISIONS

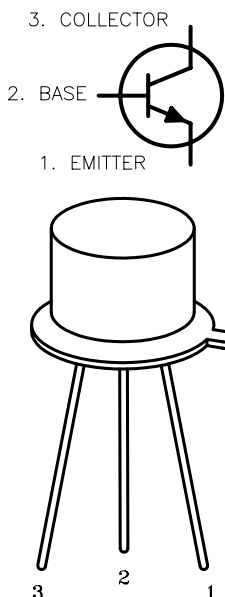
DOC. NO. SPC-F005 * Effective: 7/8/02 * DCP No: 1398

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1262	A	RELEASED	HO	12/5/02	JWM	12/5/02	DJC	12/5/02
1885	B	UPDATED TO ROHS COMPLIANCE	EO	02/03/06	HO	2/6/06	HO	2/6/06

Dimensions	A	B	C	D	E	F	G	H	I	J	K
Min.	8.5	7.74	6.09	0.40	—	2.41	4.82	0.71	0.73	12.7	42'
Max.	9.39	8.5	6.6	0.53	0.88	2.66	5.33	0.86	1.02	—	48'



NPN



Absolute Maximum Ratings:

- Collector-Emitter Voltage, $V_{CE0} = 250V$
- Collector-Base Voltage, $V_{CBO} = 300V$
- Emitter-Base Voltage, $V_{EBO} = 7V$
- Continuous Collector Current, $I_C = 1A$
- Base Current, $I_B = 500mA$
- Total Device Dissipation ($T_A = +25^\circ C$, Note 1), $P_D = 1W$
Derate above $25^\circ C = 5.7mW/^\circ C$
- Total Device Dissipation ($T_C = +25^\circ C$, Note 1), $P_D = 5W$
Derate above $25^\circ C = 28.6mW/^\circ C$
- Operating Junction Temperature Range, $T_J = -65^\circ C \sim +200^\circ C$
- Storage Temperature Range, $T_{stg} = -65^\circ C \sim +200^\circ C$
- Thermal Resistance, Junction-to-Case, $R_{thJC} = 35^\circ C/W$
- Thermal Resistance, Junction-to-Ambient, $R_{thJA} = 175^\circ C/W$

Description: A silicon NPN transistor in a TO-39 case intended for high voltage switching and linear amplifier applications.

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage	$V_{CE0(sus)}$	$I_C = 50mA$, $I_B = 0$, Note 1	250	—	—	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 200V$, $I_B = 0$	—	—	50	μA
	I_{CEX}	$V_{CE} = 300V$, $V_{BE} = -1.5V$	—	—	500	μA
	I_{CBO}	$V_{CB} = 250V$, $I_E = 0$	—	—	20	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 6V$, $I_C = 0$	—	—	20	μA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 20mA$, $V_{CE} = 10V$	40	—	160	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50mA$, $I_B = 4mA$	—	—	0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 50mA$, $I_B = 4mA$	—	—	1.3	V
Small-Signal Characteristics						
Current Gain-Bandwidth Product	f_T	$I_C = 10mA$, $V_{CE} = 10V$, $f = 5MHz$	15	—	—	MHz
Output Capacitance	C_{obo}	$V_{CB} = 10V$, $I_E = 0$, $f = 1MHz$	—	—	10	pF
Input Capacitance	C_{ibo}	$V_{CB} = 5V$, $I_C = 0$, $f = 1MHz$	—	—	75	pF
Small-Signal Current Gain	h_{fe}	$I_C = 5mA$, $V_{CE} = 10V$, $f = 1kHz$	25	—	—	
Real Part of Input Impedance	$Re(h_{ie})$	$V_{CE} = 10V$, $I_C = 5mA$, $f = 1MHz$	—	—	300	Ohm

Note 1:

Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

CAUTION: The sustaining voltage must not be measured on a curve tracer.

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TOLERANCES:

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

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DRAWING TITLE:

Transistor, Bipolar, TO-39, Silicon, NPN

SIZE

A

DWG. NO.

2N3440

ELECTRONIC FILE

35C0703.DWG

REV

B

SCALE: NTS

U.O.M.: Millimeters

SHEET: 1 OF 1