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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
1447	A	RELEASED	HO	10/23/03	JWM	11/25/03	JC	11/26/03
1885	B	UPDATED TO ROHS COMPLIANCE	EO	02/03/06	HO	2/6/06	HO	2/6/06

Description: The 2N3902 is a silicon NPN transistor in a TO-3 type package designed for use in high voltage inverters, converters, switching regulators and line operated amplifiers.

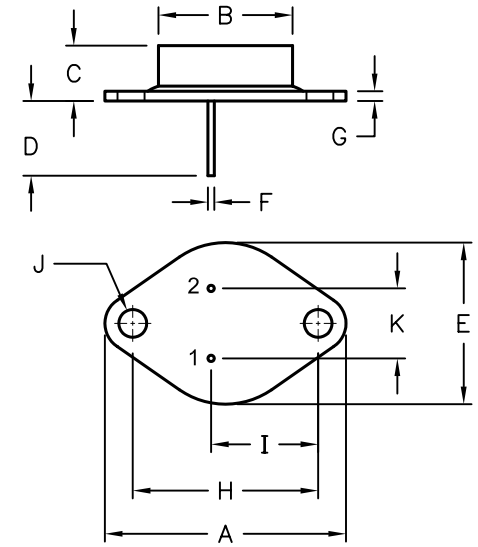
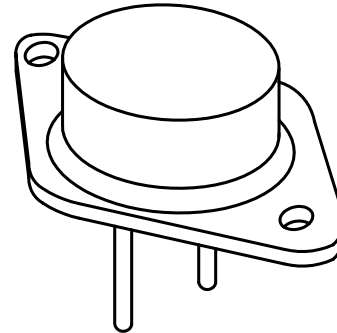
Features:

Collector-Emitter Voltage: $V_{CEX} = 700V$



Absolute Maximum Ratings:

- Collector-Emitter Voltage, $V_{CEX} = 700V$
- Collector-Emitter Voltage, $V_{CEO(sus)} = 400V$
- Emitter-Base Voltage, $V_{EB} = 5V$
- Collector Current, I_C Continuous = 3.5A
- Peak Base Current, $I_B = 2A$
- Total Device Dissipation ($T_C = +75^\circ C$), $P_D = 100W$
Derate above $95^\circ C = 1.33W/^\circ C$
- Operating Junction Temperature Range, $T_J = -65^\circ$ to $+150^\circ C$
- Storage Temperature Range, $T_{stg} = -65^\circ$ to $+200^\circ C$
- Thermal Resistance, Junction-to-Case, $R_{thJC} = 0.75^\circ C/W$
- Maximum Lead Temperature (During Soldering, 1/8" from case, 5sec), $T_L = +275^\circ C$



Pin 1 = Base
Pin 2 = Emitter
Collector (Case)

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

Parameter	Symbol	Test Conditions	Min	Max	Unit
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OFF Characteristics (Note 2)

Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100mA, I_B = 0$	325	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 400V, V_{BE} = 0$	-	0.25	mA
Emitter-Base Voltage	I_{EBO}	$I_E = 10mA, I_C = 5V$	-	5	mA

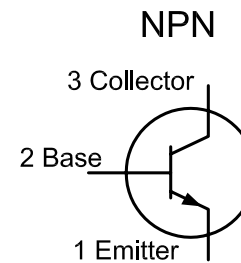
ON Characteristics (Note 2)

DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 1A$	30	90	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5A, I_B = 0.5A$	-	2.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2.5A, I_B = 0.5A$	-	2	V

Dynamic Characteristics

Current Gain-Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 200mA, f = 1MHz$	2.8	-	MHz
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Note 1. Pulse test: Pulse Width = 5ms. Duty Cycle $\leq 10\%$.
Note 2. Pulse test: Pulse Width = 300 μs . Duty Cycle $\leq 2\%$.



DIM	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

DISCLAIMER:
ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED HEREIN ARE BASED UPON INFORMATION AND/OR TESTS WE BELIEVE TO BE ACCURATE AND RELIABLE. SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE INTENDED USE AND ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH.

TOLERANCES:
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

DRAWN BY:	DATE:
HISHAM ODISH	10/23/03
CHECKED BY:	DATE:
JEFF MCVICKER	11/25/03
APPROVED BY:	DATE:
JOHN COLE	11/26/03

DRAWING TITLE: Transistor, Bipolar, TO-3, NPN, 3.5 A, 400-700 V, 100 W			
SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	2N3902	35C0707.DWG	B
SCALE: NTS	U.O.M.: Millimeters	SHEET: 1 OF 1	