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SPC-F005.DWG

REVISIONS

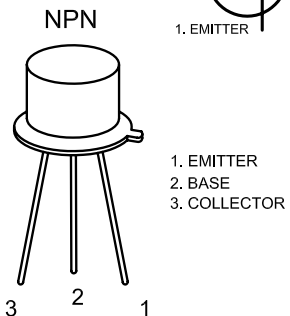
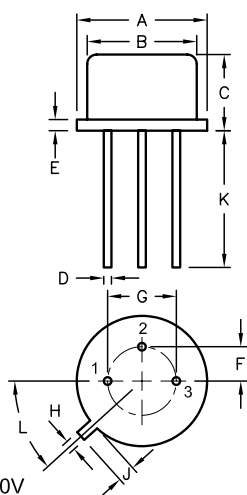
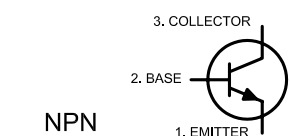
DOC. NO. SPC-F005 \* Effective: 7/8/02 \* DCP No: 1398

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1447	A	RELEASED	HYO	5/15/02	JWM	2/20/04	JC	2/20/04
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	J	K	L
Min.	8.50	7.74	6.09	0.40	-	2.41	4.82	0.71	0.73	12.70	42°
Max.	9.39	8.50	6.60	0.53	0.88	2.66	5.33	0.86	1.02	-	48°



This is a silicon NPN transistor in a TO-39 type case designed primarily for amplifier and switching applications. This device features high breakdown voltage, low leakage current, low capacity, and beta useful over an extremely wide current range.



Electrical Characteristics: (T<sub>A</sub> = +25°C Unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Max	Unit
<b>OFF Characteristics</b>					
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 0.1mA, I <sub>B</sub> = 0	60	-	V
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100µA, I <sub>E</sub> = 0	80	-	V
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 100µA, I <sub>C</sub> = 0	5	-	V
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>BE</sub> = 4V, I <sub>C</sub> = 0	-	0.25	µA

Absolute Maximum Ratings:

1. Collector-Base Voltage, V<sub>CB0</sub> = 80V
2. Collector-Emitter Voltage, V<sub>CEO</sub> = 60V
3. Emitter-Base Voltage, V<sub>EBO</sub> = 5V
4. Continuous Collector Current, I<sub>C</sub> = 0.7A
5. Total Device Dissipation (T<sub>A</sub> = +25°C), P<sub>D</sub> = 800mW  
Derate above 25°C = 4.6mW/°C
6. Total Device Dissipation (T<sub>C</sub> = +25°C), P<sub>D</sub> = 5W  
Derate above 25°C = 28.6mW/°C
7. Operating Junction Temperature Range, T<sub>J</sub> = -65° to +200°C
8. Storage Temperature Range, T<sub>stg</sub> = -65° to +200°C

ON Characteristics, Note 1

DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 150mA	50	-	250
		V <sub>CE</sub> = 2.5V, I <sub>C</sub> = 150mA	25	-	-
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 150mA, I <sub>B</sub> = 15mA	-	1.4	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 150mA, I <sub>B</sub> = 15mA	-	1.0	V

Small-Signal Characteristics

Current Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 50mA, f = 20MHz	100	-	MHz
Output Capacitance	C <sub>obo</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	-	12	pF
Input Capacitance	C <sub>ibo</sub>	V <sub>BE</sub> = 500mV, I <sub>C</sub> = 0, f = 1MHz	-	80	pF

Note 1. Pulse Test: Pulse Width ≤300µs, Duty Cycle ≤1%.

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	5/15/02
CHECKED BY:	DATE:
JEFF MCVICKER	2/20/04
APPROVED BY:	DATE:
JOHN COLE	2/20/04

DRAWING TITLE:			
Transistor, Bipolar, Metal, TO-39, NPN			
SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	2N3053A	35C0699.DWG	B
SCALE:	NTS	U.O.M.: Millimeters	SHEET: 1 OF 1