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SPC-F005.DWG

REVISIONS

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

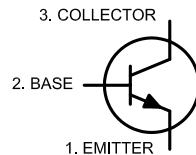
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1447	A	RELEASED	HO	10/27/03	JWM	12/4/03	JC	12/4/03
1885	B	UPDATE TO ROHS COMPLIANT	EO	02/04/06	HO	2/6/06	HO	2/6/06

Description: A epitaxial silicon NPN planer transistors in a TO-39 type package designed for use as drivers for high power transistors in general purpose amplifier and switching circuits.

Absolute Maximum Ratings:

- Collector-Emitter Voltage, $V_{CE0} = 100V$
- Collector-Base Voltage ($I_B = 0$), $V_{CB0} = 100V$
- Emitter-Base Voltage ($I_C = 0$), $V_{EB0} = 4V$
- Collector Current, $I_C = 1A$
- Base Current, $I_B = 500mA$
- Total Device Dissipation ($T_C = +25^\circ C$), $P_{tot} = 10W$
- Total Device Dissipation ($T_A = +25^\circ C$), $P_{tot} = 1W$
- Operating Junction Temperature, $T_J = -65^\circ C \sim +200^\circ C$
- Storage Temperature Range, $T_{stg} = -65^\circ C \sim +200^\circ C$

NPN



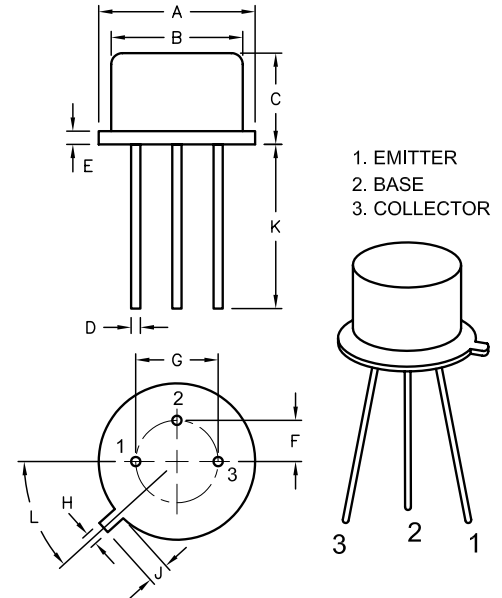
- Thermal Resistance, Junction-to-Case, $R_{thJC} = 17.4^\circ C/W$
- Thermal Resistance, Junction-to-Ambient, $R_{thJA} = 175^\circ C/W$

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

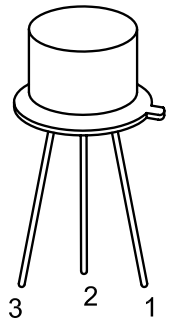
Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100V, I_B = 0$	-	1	μA
	I_{CEO}	$V_{CE} = 70V, I_B = 0$	-	10	μA
	I_{CEV}	$V_{CE} = 100V, V_{BE} = -1.5V$ $V_{CE} = 100V, V_{BE} = -1.5V, T_C = +150^\circ C$	-	1	$m A$
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	-	1	μA
Collector-Emitter Sustaining Voltage	$V_{CE0(sus)}$	$I_C = 10mA, I_B = 0$, Note 1	100	-	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 250mA, I_B = 25mA$, Note 1	-	0.6	V
		$I_C = 500mA, I_B = 50mA$, Note 1	-	1.0	V
		$I_C = 1A, I_B = 200mA$, Note 1	-	2.0	V
Base-Emitter Voltage	$V_{BE(on)}$	$V_{CE} = 2V, I_C = 250mA$	-	1.0	V
DC Current Gain	h_{FE}	$I_C = 250mA, V_{CE} = 2V$, Note 1	40	150	-
		$I_C = 1A, V_{CE} = 2V$, Note 1	5	-	-
Transition Frequency	f_T	$V_{CE} = 10V, I_C = 100mA, f = 10MHz$	30	-	MHz
Collector-Base Capacitance	C_{cbo}	$V_{CB} = 20V, I_B = 0, f = 1MHz$	-	50	pF
Small-Signal Current Gain	h_{fe}	$V_{CE} = 1.5V, I_C = 200mA, f = 1kHz$	40	-	-

Note 1. Pulse Duration: 300 μs , Duty Cycle $\leq 2\%$.

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°



- 1. EMITTER
- 2. BASE
- 3. COLLECTOR



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

DRAWN BY:	DATE:
HISHAM ODISH	10/27/03
CHECKED BY:	DATE:
JEFF MCVICKER	12/4/03
APPROVED BY:	DATE:
JOHN COLE	12/4/03

DRAWING TITLE: Transistor, Bipolar, Metal, TO-39, NPN, Amplifier & Switching			
SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	2N5681	35C0730.DWG	B
SCALE: NTS	U.O.M.: Millimeters	SHEET: 1 OF 1	