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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
1885	A	RELEASED	EO	02/03/06	HO	2/6/06	JWM	2/6/06

Features:

- Low Collector Emitter Saturation Voltage: $V_{CE(sat)1V}$ $I_C = 15A$
- High Current Gain-Bandwidth Product: $f_T = 4.0MHz$ (Min) @ $I_C = 1A$
- Low Leakage Current $I_{CEX} = 1mA$ (max) at Rated Voltage
- Excellent DC Current Gain $h_{FE} = 20$ (min) @ $I_C = 10A$

Description: HIGH POWER TO-3 PNP TRANSISTOR



Absolute Maximum Ratings:

- Collector-Base Voltage, $V_{CBO} = 80V$
- Collector-Emitter Voltage, $V_{CEO} = 80V$
- Emitter-Base Voltage, $V_{EBO} = 5V$
- Continuous Collector Current, $I_C = 25A$
- Base Current $I_B = 7.5A$
- Total Device Dissipation ($T_C = +25^\circ C$), $P_D = 200W$
Derate above $25^\circ C = 1.15mW/^\circ C$
- Operating Junction Temperature Range, $T_J = -65^\circ$ to $+200^\circ C$
- Storage Temperature Range, $T_{stg} = -65^\circ$ to $+200^\circ C$

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

Parameter	Symbol	Test Conditions	Min	Max	Unit
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OFF Characteristics

Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 200mA$, $I_B = 0$, (Note 1)	80	—	V
Collector Cut-Off Current	I_{CEX}	$V_{CE} = 80V$, $V_{EB(off)} = 1.5V$	—	1	mA
	I_{CBO}	$V_{CB} = 80V$, $I_E = 0$	—	1	mA
	I_{CEO}	$V_{CB} = 40V$, $I_B = 0$	—	2	mA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 5V$, $I_C = 0$	—	1	mA

ON Characteristics (Note 1)

DC Current Gain	h_{FE}	$V_{CE} = 4V$, $I_C = 3A$	35	—	—
		$V_{CE} = 4V$, $I_C = 10A$	20	100	—
		$V_{CE} = 4V$, $I_C = 25A$	4	—	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 15A$, $I_B = 1.5A$	—	1	V
		$I_C = 25A$, $I_B = 6.25A$	—	4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 25A$, $I_B = 6.25A$	—	2.5	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C = 10A$, $V_{CE} = 4V$	—	1.5	V

Small-Signal Characteristics

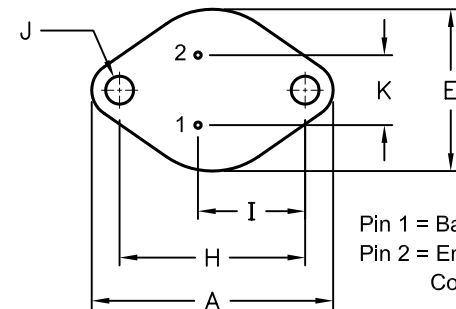
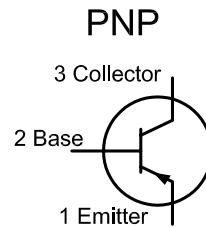
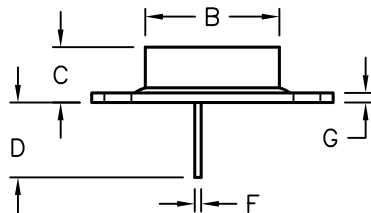
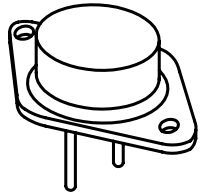
Current Gain-Bandwidth Product (Note 2)	f_T	$V_{CE} = 10V$, $I_C = 1A$, $f = 1MHz$	4	—	MHz
Output Capacitance	C_{obo}	$V_{CB} = 10V$, $I_E = 0$, $f = 1MHz$	—	1000	pF
Small-Signal Current Gain	h_{fe}	$V_{CE} = 4V$, $I_C = 3A$, $f = 1kHz$	20	—	—

Switching Characteristics

Rise Time	t_r	$V_{CC} = 30V$, $I_C = 10A$, $I_{B1} = I_{B2} = 1A$	—	0.7	ns
Storage Time	t_s	$V_{CC} = 30V$, $I_C = 150mA$, $I_{B1} = I_{B2} = 15mA$	—	1	us
Fall Time	t_f		—	0.8	us

Notes:

- Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.



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

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:
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TOLERANCES:

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

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APPROVED BY:	DATE:
JEFF MCVICKER	2/6/06

DRAWING TITLE:

Transistor, Bipolar, Metal, TO-3, PNP

SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	2N5884	01H1384.DWG	A
SCALE:	NTS	U.O.M.: Millimeters	SHEET: 1 OF 1