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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	5/6/03	JWM	5/6/03	DJC	5/6/03
1885	B	UPDATED TO ROHS COMPLIANCE	EO	02/03/06	HO	2/6/06	HO	2/6/06

Description: High voltage, TO-3, NPN, Silicon, Power Transistor. Designed for high voltage inverters, switching regulators and line – operated amplifier applications. Especially well suited for switching power supply applications in associated consumer products.

Features:

- Low Collector Emitter Saturation Voltage: $V_{CE(sat)}$ 1.5V(Max) @ $I_C = 3A$
- Current Gain-Bandwidth Product: $f_T = 5MHz$ (Min) @ $I_C = 0.3A$



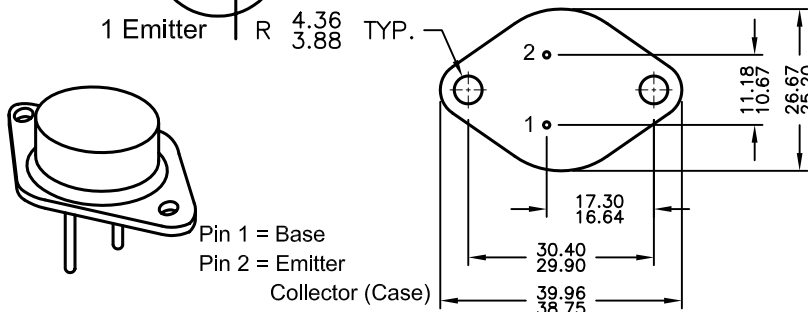
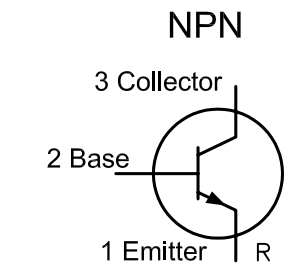
Absolute Maximum Ratings:

- Collector-Base Voltage, $V_{CBO} = 700V$
- Collector-Emitter Voltage, $V_{CEO} = 350V$
- Emitter-Base Voltage, $V_{EBO} = 8V$
- Continuous Collector Current, $I_C = 8A$
- Base Current, $I_B = 4A$
- Total Device Dissipation ($T_C = +25^\circ C$), $P_D = 125W$
Derate above $25^\circ C = 0.714mW/^\circ C$
- 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	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage (Note1)	$V_{(BR)CEO}$	$I_C = 100mA, I_B = 0$	350	-	-	V
Collector Cut-Off Current	I_{CEX}	$V_{CE} = 700V, V_{EB(off)} = 1.5V$	-	-	0.5	mA
		$V_{CB} = 350V, I_B = 0$	-	-	0.5	mA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 8V, I_C = 0$	-	-	1	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 3A$	12	-	60	-
		$V_{CE} = 5V, I_C = 8A$	3	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 0.6A$	-	-	1.5	V
		$I_C = 8A, I_B = 2.67A$	-	-	5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 8A, I_B = 2.67A$	-	-	2.5	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C = 3A, V_{CE} = 5V$	-	-	1.5	V
Small-Signal Characteristics						
Current Gain-Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 0.3A, f = 1MHz$	5	-	-	MHz
Output Capacitance	C_{obo}	$V_{CB} = 10V, I_B = 0, f = .1MHz$	-	-	250	pF
Switching Characteristics						
Rise Time	t_r	$V_{CC} = 125V, I_C = 3A, I_B = 0.6A$	-	-	0.6	us
Storage Time	t_s	$V_{CC} = 125V, I_C = 3A, I_{B1} = -.6, I_{B2} = 1.5A$	-	-	1.6	us
Fall Time	t_f		-	-	0.4	us

Note 1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.



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

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DRAWING TITLE: Transistor, Bipolar, TO-3, NPN, 8 A, 350-700 V, 125 W			
SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	2N6308	01H1389.DWG	B
SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 1