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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) @ $I_C = 0.3A$



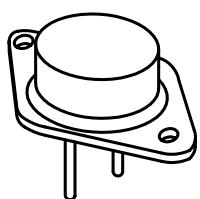
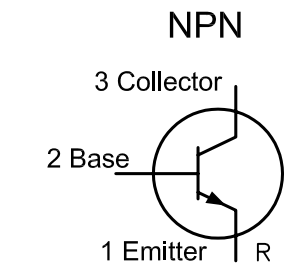
Absolute Maximum Ratings:

- Collector–Base Voltage, $V_{CBO} = 700V$
- Collector–Emitter Voltage, $V_{CEO} = 350V$
- Emitter–Base Voltage, $V_{EB0} = 8V$
- 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 $+200^\circ C$

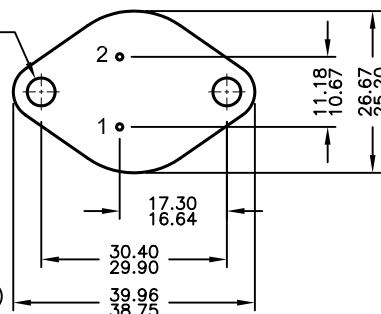
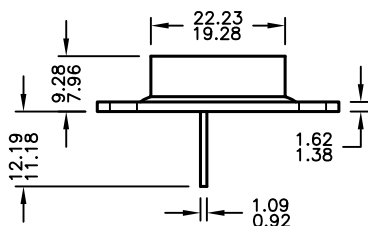
Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

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
	I_{CEO}	$V_{CB} = 350V, I_B = 0$	–	–	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}	$V_{CB} = 10V, I_E = 0, f = .1MHz$	–	–	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 $\leq 2\%$.



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



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.

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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