

DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1262	A	RELEASED	HO	2/26/03	JWM	2/26/03	DJC	2/26/03
1885	B	UPDATED TO ROHS COMPLIANCE	EO	02/03/06	HO	2/6/06	HO	2/6/06

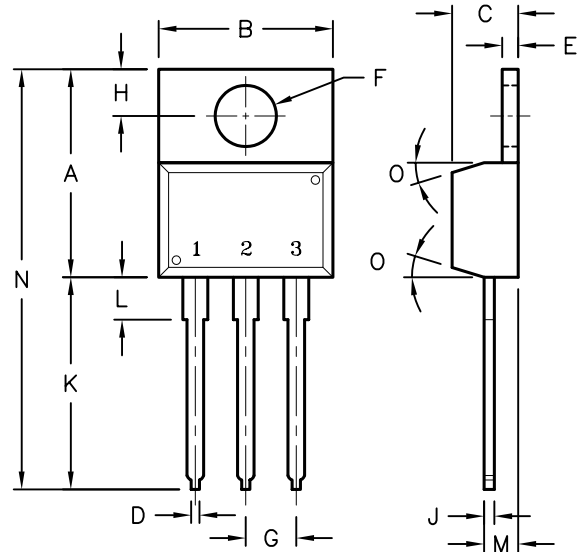
Description: A silicon NPN Darlington transistor in a TO-220 type case designed for general-purpose amplifier and low-speed switching applications.

Features:

- High DC Current Gain
- Collector-Emitter Sustaining Voltage: $V_{CE(sus)} = 100V$ Min @ 100mA
- Monolithic Construction with Built-in Base-Emitter Shunt Resistors

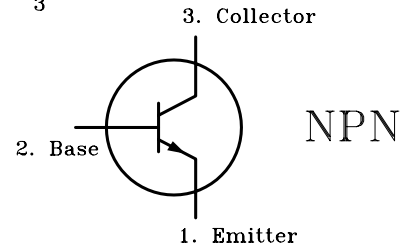
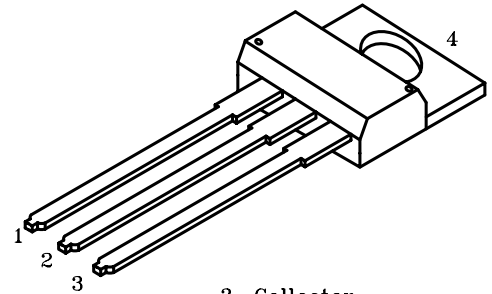
Absolute Maximum Ratings:

- Collector-Emitter Voltage, $V_{CEO} = 100V$
- Collector-Base Voltage, $V_{CB} = 100V$
- Emitter-Base Voltage, $V_{EB} = 5V$
- Collector Current, I_C :
 - Continuous = 5A
 - Peak = 8A
- Base Current, $I_B = 120mA$
- Total Power Dissipation ($T_C = +25^\circ C$), $P_D = 65W$
Derate above $+25^\circ C = 0.52W/^\circ C$
- Total Power Dissipation ($T_A = +25^\circ C$), $P_D = 2W$
Derate above $+25^\circ C = 0.016W/^\circ C$
- Operating Junction Temperature Range, $T_J = -65^\circ$ to $+150^\circ C$
- Storage Temperature Range, $T_{stg} = -65^\circ$ to $+150^\circ C$
- Thermal Resistance, Junction-to-Case, $R_{thJC} = 1.92^\circ C/W$
- Thermal Resistance, Junction-to-Ambient, $R_{thJA} = 62.5^\circ C/W$



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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage	$V_{CE(sus)}$	$I_C = 100mA, I_B = 0$, (Note 1)	100	-	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 50V, I_B = 0$	-	-	0.5	mA
	I_{CBO}	$V_{CB} = 100V, I_E = 0$	-	-	0.2	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 5V, I_C = 0$	-	-	2	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$V_{CE} = 3V, I_C = 0.5A$	1000	-	-	
		$V_{CE} = 3V, I_C = 3A$	1000	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 12mA$	-	-	2	V
		$I_C = 5A, I_B = 20mA$	-	-	4	V
Base-Emitter ON Voltage	$V_{BE(on)}$	$V_{CE} = 3V, I_C = 3A$	-	-	2.5	V
Dynamic Characteristics						
Small-Signal Current Gain	$ h_{fe} $	$V_{CE} = 4V, I_C = 3A, f = 1MHz$	4	-	-	
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 0.1MHz$	-	-	200	pF


Note:

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

Dimensions	A	B	C	D	E	F	G	H	J	K	L	M	N	0
Min.	14.42	9.63	3.56	-	1.15	3.75	2.29	2.54	-	12.70	2.80	2.03	-	7
Max.	16.51	10.67	4.83	0.90	1.40	3.88	2.79	3.43	0.56	14.73	4.07	2.92	31.24	

Pin Configuration

1. Base
2. Collector
3. Emitter
4. Collector

SPC-F004.DWG

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	HISHAM ODISH	2/26/03	Transistor, General Purpose, Bipolar, TO-220, NPN			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	JEFF MCVICKER	2/26/03	A	TIP122	35C0636.DWG	B
	APPROVED BY:	DATE:	SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 1
DANIEL CAREY	2/26/03					

ALL RIGHTS RESERVED. NO PORTION OF THIS PUBLICATION, WHETHER IN WHOLE OR IN PART CAN BE REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPC TECHNOLOGY. 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.