



REVISIONS

DOC. NO. SPC-F004 * Effective: 7/8/02 * DCP No: 1398

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

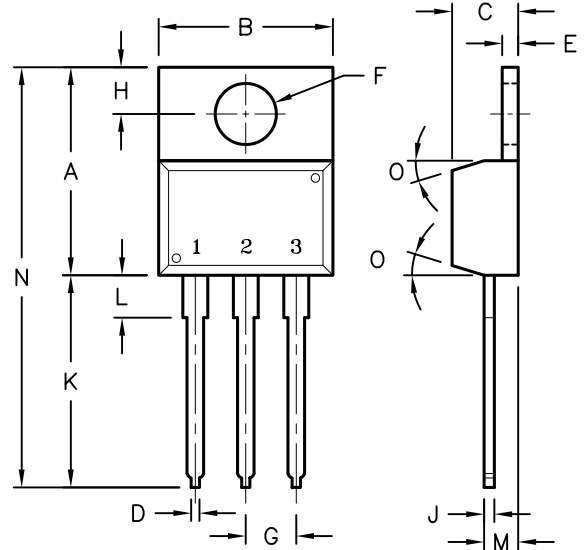
Description: A silicon NPN Darlington transistor in a TO-220 type case designed for general-purpose amplifier and low-speed switching applications.

Features:

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

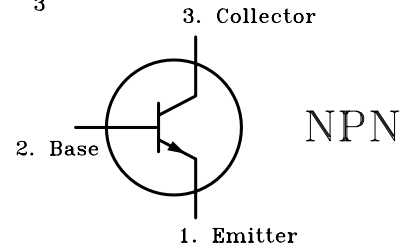
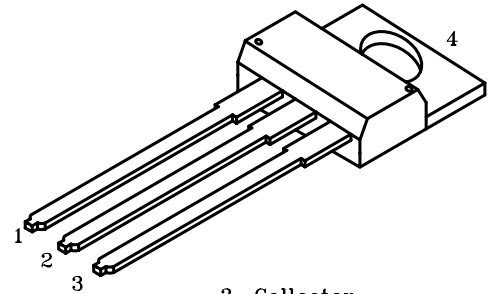
Absolute Maximum Ratings:

- 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					

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