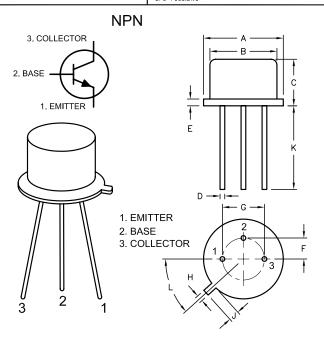


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SPC-	F005	DWG

		REVISIONS	DOC. NO. SPC-F005 * Effective: 7/8/02 * DCP No: 1398						
DCP #	DCP # REV DESCRIPTION 1447 A RELEASED		DRAWN	DATE	CHECKD	DATE	APPRVD	DATE	
1447			HYO	5/10/02	JWM	2/20/04	JC	2/20/04	
1885	В	UPDATED TO ROHS COMPLIANCE	EO	02/03/06	но	2/6/06	но	2/6/06	

RoHS Compliant



This is a silicon NPN transistor in a TO-18 type case designed primarily for amplifier and switching applications. This device features high breakdown voltage, low leakage current, low capacity, and beta useful over an extremely wide current range.

Absolute Maximum Ratings:

- Collector-Base Voltage, $V_{CBO} = 140V$
- Collector-Emitter Voltage, V_{CEO} = 80V
- Emitter-Base Voltage, $V_{EBO} = 7V$
- Continuous Collector Current, I_C = 1A
- Total Device Dissipation ($T_A = +25$ °C), $P_D = 0.5$ W

Derate above 25°C = 2.85mW/°C

- Total Device Dissipation ($T_C = +25$ °C), $P_D = 1.8$ W
 - Derate above 25°C = 10.6mW/°C
- Operating Junction Temperature Range, T_J = -65° to +200°C
- Storage Temperature Range, T_{stg} = -65° to +200°C Thermal Resistance, Junction-to-Case, R_{thJC} = 97°C/W
- Thermal Resistance, Junction-to-Ambient, $R_{thJA} = 350$ °C/W - Lead Temperature (During Soldering, 1/16" from case, 60sec max), T_L = 300°C

Dimensions	Α	В	С	D	E	F	G	Η	J	K	L
Min.	5.24	4.52	4.31	0.40	-	-	-	0.91	0.71	12.70	45°
Max.	5.84	4.97	5.33	0.53	0.76	1.27	2.97	1.17	1.21	-	

TOLERANCES:

JOHN COLE

2/20/04

DRAWN BY: DRAWING TITLE: DATE: Transistor, Bipolar, Metal, TO-18, NPN HISHAM ODISH 5/10/02 UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE CHECKED BY: DATE: DWG. NO. ELECTRONIC FILE REV JEFF MCVICKER 2/20/04 Α 2N3700 35C0706.DWG В APPROVED BY: DATE: PURPOSES ONLY. SCALE: NTS U.O.M.: Millimeters SHEET:

DISCLAIMER:
ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED

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.

Electrical Characteristics: (T _A = +25°	C Unless of	therwise specified)			
Parameter	Symbol	Test Conditions	Min	Max	Unit
OFF Characteristics			_		
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	$I_{\rm C} = 30 {\rm mA}, I_{\rm B} = 0$	80	-	V
Collector-Base Breakdown Voltage	V _{(BR)CBO}	$I_{\rm C} = 100 \mu A, I_{\rm E} = 0$	140	-	V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	$I_E = 100 \mu A, I_C = 0$	7	-	V
Collector Cut-Off Current	I _{CBO}	$V_{CB} = 90V, I_E = 0$ $V_{CB} = 90V, I_E = 0, T_A = +150^{\circ}C$	-	0.01	μΑ
Emitter Cut-Off Current	I _{EBO}	$V_{BE} = 5V, I_{C} = 0$	+	0.01	μA μA
ON Characteristics	-250	- BE			ļ
ON Characteristics	h _{FE}	$V_{CE} = 10V, I_{C} = 0.1mA$	50	-	T_
		$V_{CE} = 10V$, $I_C = 10mA$	90	_	-
DC Current Gain (Note 1)		V _{CE} = 10V, I _C = 150mA	100	300	-
DC Current Gain (Note 1)		V _{CE} = 10V, I _C = 150mA, T _A = -55°C	40	-	-
		V _{CE} = 10V, I _C = 500mA	50	-	-
		V _{CE} = 10V, I _C = 1A	15	-	-
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C = 150mA, I _B = 15mA	-	0.2	V
		$I_C = 500 \text{mA}, I_B = 50 \text{mA}$	-	0.5	V
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C = 150mA, I _B = 15mA	1_	1.1	V
			_	•	
Small-Signal Characteristics					
Current Gain-Bandwidth Product	f _T	V _{CE} = 10V, I _C = 50mA, f = 20MHz	100	400	MHz
Output Capacitance	C _{obo}	$V_{CB} = 10V, I_{E} = 0, f = 1MHz$	-	12	pF
Input Capacitance	C _{ibo}	$V_{BE} = 500 \text{mV}, I_{C} = 0, f = 1 \text{MHz}$	-	60	pF
Small-Signal Current Gain	h _{fe}	$V_{CE} = 5V$, $I_C = 1mA$, $f = 1kHz$	80	400	-
Collector-Base Time Constant	rb'C _c	V _{CB} = 10V, I _E = 10mA, f = 79.8MHz	-	400	ps
Noise Figure	NF	$V_{CE} = 10V, I_{C} = 100\mu A, f = 1kHz, R_{S} = 1kohm$	_	4	dB

SIZE

Α

SCALE: NTS

DWG. NO.

2N3700

U.O.M.: Millimeters

ELECTRONIC FILE

35C0706.DWG

SHEET:

REV

В

2 OF 2

Note 1. Pulse Test: Pulse Width \leq 300µs, Duty Cycle \leq 1%.

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