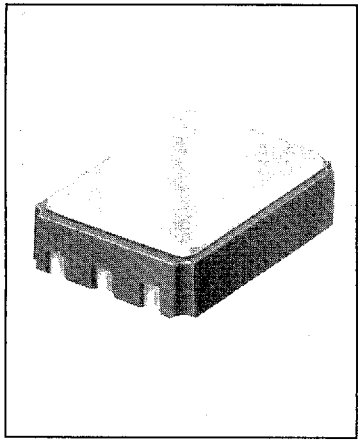
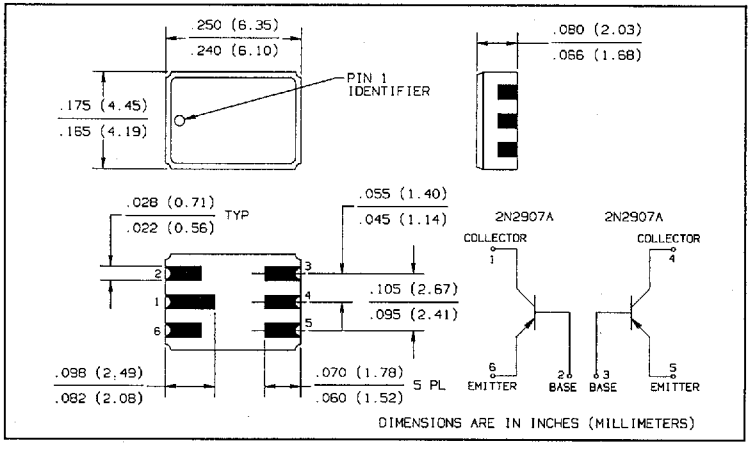
Surface Mount Dual PNP Transistor
Type HCT740





Features

- Surface mountable on ceramic or printed circuit board
- Miniature package to minimize circuit board area required
- Electrical performance similar to 2N2907A
- Hermetically sealed
- Screened per MIL-S-19500 TX or TXV equivalent levels on request

Description

The HCT740 is a hermetically sealed, ceramic surface-mount device, consisting of two 2N2907A silicon PNP transistor die. The HCT740 electrical characteristics are similar to the MIL-S-19500/291 specification for the 2N2907A. The miniature six pin ceramic package is ideal for designs where board space and device weight are important design considerations.

TX and TXV screening, if requested, will be performed similar to MIL-S-19500/496 per 2N5796 conditions. Order HCT740TX or HCT740TXV.

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Isolation Voltage	500VDC
Collector-Base Voltage	60V
Collector-Emitter Voltage	60V
Emitter-Base Voltage	5.0V
Collector Current - Continuous	600mA
Operating Junction Temperature (T_J)	-65°C to +200°C
Storage Junction Temperature (T_{stg})	-65°C to +200°C
Power Dissipation @ T_A = 25°C (Both sides driven equally)	0 .65W
Power Dissipation @ T_S[(1)] = 25°C (Both sides driven equally)	1.25W[(2)]
Soldering Temperature (vapor phase reflow for 30 sec.)	215°C
Soldering Temperature (heated collet for 5 sec.)	260°C

Notes

(1) T_S = Substrate temperature that the chip carrier is mounted on.
(2) Derate linearly 7.1mW/°C above 25°C. This rating is provided as an aid to designers. It is dependent upon mounting material and methods and is not measureable as an outgoing test.

Type HCT740

Electrical Characteristics ($T_A = 25^oC$ unless otherwise noted)

Symbol	Parameter	Min.	Max.	Units	Test Conditions
Off Characteristics					
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	60		V	$I_C = 10.0\mu A$, $I_E = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	60		V	$I_C = 10.0mA$, $I_B = 0$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	5.0		V	$I_E = 10.0\mu A$, $I_C = 0$
I_{CBO}	Collector-Base Cutoff Current		10.0	nA	$V_{CB} = 50V$, $I_E = 0$
			10.0	µA	$V_{CB} = 50V$, $I_E = 0$, $T_A = 150^oC$
I_{EBO}	Emitter-Base Cutoff Current		50.0	nA	$V_{EB} = 3.5V$, $I_C = 0$
On Characteristics					
h_{FE}	Forward-Current Transfer Ratio	75		—	$V_{CE} = 10.0V$, $I_C = 0.1mA$
		100	450	—	$V_{CE} = 10.0V$, $I_C = 1.0mA$
		100		—	$V_{CE} = 10.0V$, $I_C = 10.0mA$
		100	300	—	$V_{CE} = 10.0V$, $I_C = 150mA$(3)
		50		—	$V_{CE} = 10.0V$, $I_C = 500mA$(3)
		50		—	$V_{CE} = 10.0V$, $I_C = 1.00mA$, $T_A = -55^oC$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		0.40	V	$I_C = 150mA$, $I_B = 15mA$(3)
			1.60	V	$I_C = 500mA$, $I_B = 50mA$(3)
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage		1.30	V	$I_C = 150mA$, $I_B = 15mA$(3)
			2.60	V	$I_C = 500mA$, $I_B = 50mA$(3)
Small-Signal Characteristics					
hfe	Forward Current Transfer Ratio	100		—	$V_{CE} = 10.0V$, $I_C = 1.00mA$, $f = 1.0kHz$
|hfe|	Forward Current Transfer Ratio	2.0		—	$V_{CE} = 20V$, $I_C = 50mA$, $f = 100MHz$
C_{obo}	Open Circuit Output Capacitance		8.0	pF	$V_{CB} = 10.0V$, $100kHz \leq f \leq 1.0MHz$
C_{ibo}	Input Capacitance (Output Open)		30	pF	$V_{EB} = 2.0V$, $100kHz \leq f \leq 1.0MHz$
Switching Characteristics					
t_{on}	Turn-On Time		45	ns	$V_{CC} = 30V$, $I_C = 150mA$, $I_{B1} = 15mA$
t_{off}	Turn-Off Time		300	ns	$V_{CC} = 30V$, $I_C = 150mA$, $I_{B1} = I_{B2} = 15mA$

(3) Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2.0%

HI REL SURFACE MOUNT

Optek Technology, Inc. 1215 W. Crosby Road Carrollton, Texas 75006 (214)323-2200 Fax (214)323-2396