

New Jersey Semi-Conductor Products, Inc.

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2N3740, A (SILICON)

2N3741, A

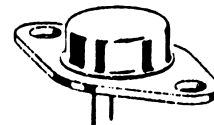
MEDIUM-POWER PNP TRANSISTORS

... ideal for use as drivers, switches and direct replacement of germanium medium-power devices. These devices feature:

- Low Saturation Voltage —
 $V_{CE(sat)} = 0.6 \text{ Vdc @ } I_C = 1.0 \text{ Amp}$
- High Gain Characteristics —
 $h_{FE} = 30-100 @ I_C = 250 \text{ mAdc}$
- Direct Substitution for Germanium Equivalents
- Excellent Safe Area Limits (See Figure 2)
- Low Collector Cutoff Current —
100 nA (Max) 2N3740A, 2N3741A
- Complementary to NPN 2N3766
(2N3740) and 2N3767 (2N3741)

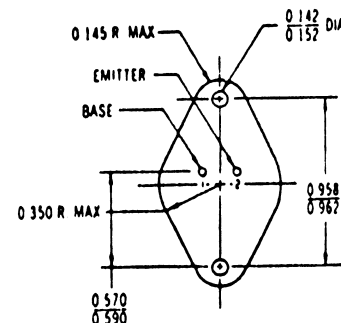
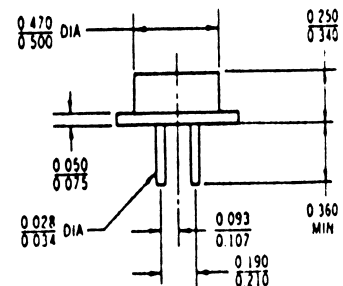
POWER TRANSISTORS

PNP SILICON
60-80 VOLTS
25 WATTS



MAXIMUM RATINGS

Rating	Symbol	2N3740 2N3740A	2N3741 2N3741A	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	Vdc
Emitter-Base Voltage	V_{EB}	7.0	7.0	Vdc
Collector-Base Voltage	V_{CB}	60	80	vdc
Collector Current — Continuous	I_C	4.0		Adc
— Peak (Note 1)		10		
Base Current	I_B	2.0		Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$	P_D	25		Watts
Derate above 25°C		0.143		W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$



(TO-66)

COLLECTOR CONNECTED TO CASE



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2N3740,A, 2N3741,A (continued)

*ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Figure No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage ① ($I_C = 100 \text{ mAdc}$, $I_B = 0$)	2	$V_{CE(sus)} ①$	60 80	— —	Vdc
Emitter Base Cutoff Current ($V_{EB} = 7.0 \text{ Vdc}$)	—	I_{EBO}	—	0.5 100	mAdc nAdc
Collector Cutoff Current ($V_{CE} = 60 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$)	5, 6②	I_{CEX}	—	100	μAdc
($V_{CE} = 80 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$)			—	100	nAdc
($V_{CE} = 40 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)			—	100	μAdc
($V_{CE} = 60 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)			—	100	nAdc
			—	1.0	mAdc
			—	0.5	mAdc
Collector-Emitter Cutoff Current ($V_{CE} = 40 \text{ Vdc}$, $I_B = 0$)	5, 6②	I_{CEO}	—	1.0	mAdc
($V_{CE} = 60 \text{ Vdc}$, $I_B = 0$)			—	1.0	μAdc
			—	1.0	mAdc
			—	1.0	μAdc
Collector Base Cutoff Current ($V_{CB} = 60 \text{ Vdc}$, $I_E = 0$)	—	I_{CBO}	—	100	μAdc
($V_{CB} = 80 \text{ Vdc}$, $I_E = 0$)			—	100	nAdc
			—	100	μAdc
			—	100	nAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 100 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$) ($I_C = 250 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$) ($I_C = 500 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$) ($I_C = 1.0 \text{ Adc}$, $V_{CE} = 1.0 \text{ Vdc}$)	7	$h_{FE} ①$	40 30 20 10	— 100 — —	—
Collector-Emitter Saturation Voltage ($I_C = 1.0 \text{ Adc}$, $I_B = 125 \text{ mAdc}$)	8, 9, 10	$V_{CE(sat)} ①$	—	0.6	Vdc
Base-Emitter Voltage ($I_C = 250 \text{ mAdc}$, $V_{CE} = 1.0 \text{ Vdc}$)	3, 4, 9, 10	$V_{BE} ①$	—	1.0	Vdc

TRANSIENT CHARACTERISTICS

Current-Gain-Bandwidth Product ($I_C = 100 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ MHz}$)	—	f_T	4.0	—	MHz
Common Base Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_C = 0$, $f = 100 \text{ kHz}$)	14	C_{ob}	—	100	pF
Small-Signal Current Gain ($I_C = 50 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ kHz}$)	—	h_{fe}	25	—	—

* Indicates JEDEC Registered Data.

① Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

② Figures 5 and 6 apply to 2N3740 and 2N3741 only.



Quality Semi-Conductors