New Jersey Semi-Conductor Products, Inc.

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2N3740, A (SILICON)
2N3741, A

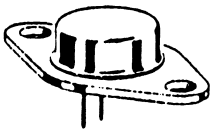
MEDIUM-POWER PNP TRANSISTORS

POWER TRANSISTORS

PNP SILICON
60–80 VOLTS
25 WATTS

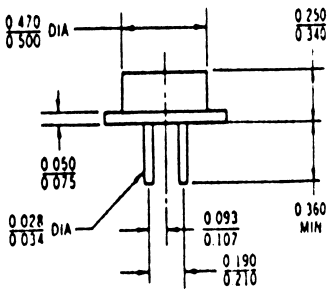
. . . ideal for use as drivers, switches and direct replacement of germanium medium-power devices. These devices feature:

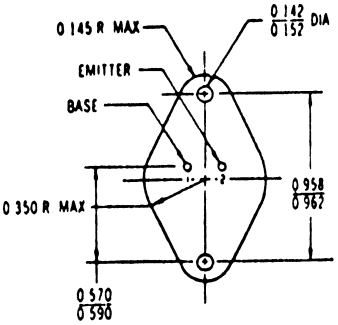
- Low Saturation Voltage — $V_{CE(sat)}$ = 0.6 Vdc @ I_C = 1.0 Amp
- High Gain Characteristics — h_{FE} = 30–100 @ I_C = 250 mAdc
- Direct Substitution for Germanium Equivalents
- Excellent Safe Area Limits (See Figure 2)
- Low Collector Cutoff Current — 100 nA (Max) 2N3740A, 2N3741A
- Complementary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



*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 – Peak (Note 1)	I_C	4.0 10		Adc
Base Current	I_B	2.0		Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	25 0.143		Watts W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		°C





(TO-66)

COLLECTOR CONNECTED TO CASE

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

*ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Figure No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Sustaining Voltage ① (I_C = 100 mAdc, I_B = 0)	2N3740, 2N3740A	2	$V_{CEO(sus)}$ ①	60	–	Vdc
	2N3741, 2N3741A			80	–	
Emitter Base Cutoff Current (V_{EB} = 7.0 Vdc)	2N3740, 2N3741	–	I_{EBO}	–	0.5	mAdc
	2N3740A, 2N3741A				100	nAdc
Collector Cutoff Current		5, 6②	I_{CEX}			
(V_{CE} = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N3740			–	100	µAdc
	2N3740A			–	100	nAdc
(V_{CE} = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N3741			–	100	µAdc
	2N3741A			–	100	nAdc
(V_{CE} = 40 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C)	2N3740			–	1.0	mAdc
	2N3740A			–	0.5	
(V_{CE} = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc, T_C = 150°C)	2N3741			–	1.0	mAdc
	2N3741A			–	0.5	
Collector-Emitter Cutoff Current		5, 6②	I_{CEO}			
(V_{CE} = 40 Vdc, I_B = 0)	2N3740			–	1.0	mAdc
	2N3740A			–	1.0	µAdc
(V_{CE} = 60 Vdc, I_B = 0)	2N3741			–	1.0	mAdc
	2N3741A			–	1.0	µAdc
Collector Base Cutoff Current		–	I_{CBO}			
(V_{CB} = 60 Vdc, I_E = 0)	2N3740			–	100	µAdc
	2N3740A			–	100	nAdc
(V_{CB} = 80 Vdc, I_E = 0)	2N3741			–	100	µAdc
	2N3741A			–	100	nAdc
ON CHARACTERISTICS						
DC Current Gain		7	h_{FE}①			–
(I_C = 100 mAdc, V_{CE} = 1.0 Vdc)				40	–	
(I_C = 250 mAdc, V_{CE} = 1.0 Vdc)				30	100	
(I_C = 500 mAdc, V_{CE} = 1.0 Vdc)				20	–	
(I_C = 1.0 Adc, V_{CE} = 1.0 Vdc)				10	–	
Collector-Emitter Saturation Voltage (I_C = 1.0 Adc, I_B = 125 mAdc)		8, 9, 10	$V_{CE(sat)}$①	-	0.6	Vdc
Base-Emitter Voltage (I_C = 250 mAdc, V_{CE} = 1.0 Vdc)		3, 4, 9, 10	V_{BE}①	–	1.0	Vdc
TRANSIENT CHARACTERISTICS						
Current-Gain–Bandwidth Product (I_C = 100 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)		–	f_T	4.0	–	MHz
Common Base Output Capacitance (V_{CB} = 10 Vdc, I_C = 0, f = 100 kHz)		14	C_{ob}	–	100	pF
Small-Signal Current Gain (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)		–	h_{fe}	25	–	–

*Indicates JEDEC Registered Data.

① Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤2.0%.
② Figures 5 and 6 apply to 2N3740 and 2N3741 only.