

MEDIUM-POWER PNP TRANSISTORS

...ideal for use as drivers, switches and medium-power amplifier application. These devices feature:

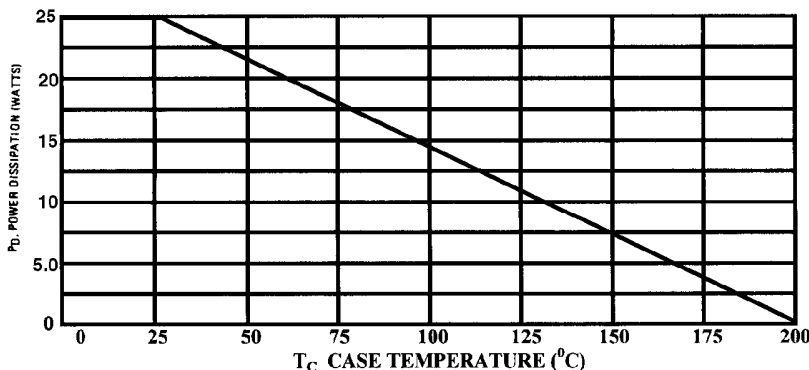
- Low Saturation Voltage - $0.6 V_{CE(sat)} @ I_c = 1.0 \text{ Amp}$
- High Gain Characteristics - $h_{FE} @ I_c = 250 \text{ mA}: 30 - 100$
- Excellent Safe Area Limits (See Figure 2)
- Low Collector Cutoff Current - $100 \text{ nA (Max) } 2N3740, 2N3741A$
- Complementary to NPN 2N3766 (2N3740) and 2N3767 (2N3741)

MAXIMUM RATINGS

Rating	Symbol	2N3740	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 (1)		10		
Base Current	I_B	2.0		Adc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	P_D	25		Watts
Derate above 25°C		0.143		W°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$

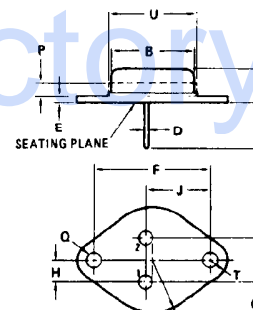
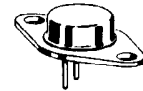
(1) See Figure 2

Figure 1 - POWER-TEMPERATURE DERATING CURVE



Safe Area Curves are indicated by Figure 2. Both limits are applicable and must be observed.

POWER TRANSISTOR
PNP SILICON
60 - 80 VOLTS
25 WATTS



STYLE 1:
PIN 1: BASE
2: EMITTER
CASE: COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
B	11.94	12.70	0.470	0.500
C	6.35	8.64	0.250	0.340
D	0.71	0.86	0.028	0.034
E	1.27	1.31	0.050	0.075
F	24.33	24.43	0.958	0.962
G	4.83	5.33	0.190	0.210
H	2.41	2.67	0.095	0.105
J	14.48	14.99	0.570	0.590
K	9.14	-	0.360	-
P	-	1.27	-	0.050
Q	3.61	3.86	0.142	0.152
S	-	8.89	-	0.350
T	-	3.68	-	0.145
U	-	15.75	-	0.620

All JEDEC Dimensions and Notes Apply.

CASE 90-02
TO-213AA
(TO-66)



NEW ENGLAND SEMICONDUCTOR

2N3740*
2N3741*
2N3741A

*also available as
JAN, JANTX,
JANTXV

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

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS (1)				
Collector-Emitter Sustaining Voltage $I_C = 100 \text{ mAdc}$, $I_B = 0$	$V_{CEO(SUS)}$	60		Vdc
		80		
Emitter-Base Cutoff Current $V_{EB} = 7.0 \text{ Vdc}$	I_{EBO}		0.5	mAdc
			100	nAdc
Collector Cutoff Current $V_{CE} = 60 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$	I_{CEX}		100	μAdc
			100	μAdc
			100	nAdc
			1.0	mAdc
			1.0	mAdc
			0.5	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 40 \text{ Vdc}$, $I_B = 0$	I_{CEO}		1.0	mAdc
			1.0	mAdc
			1.0	μAdc
Collector-Base Cutoff Current $V_{CB} = 60 \text{ Vdc}$, $I_E = 0$	I_{CBO}		100	μAdc
			100	μAdc
			100	nAdc

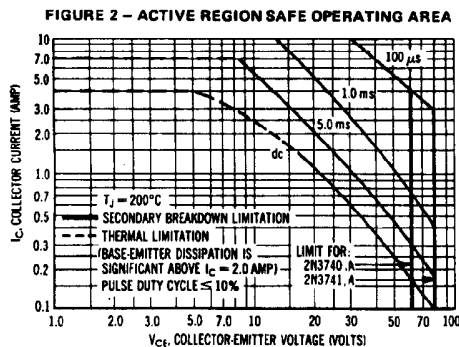
ON CHARACTERISTICS (1)

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

TRANSIENT CHARACTERISTICS

Current-Gain--Bandwidth Product $I_C = 100 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1.0 \text{ MHz}$	fT	3.0		MHz
Common-Base Output Capacitance $V_{CB} = 10 \text{ Vdc}$, $I_C = 0$, $f = 100 \text{ kHz}$	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		

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



The Safe Operating Area Curves indicate $I_C - V_{CE}$ limits below which the device will not enter secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a catastrophic failure. To insure operation below the maximum T_J , power-temperature derating must be observed for both steady state and pulse power conditions.

NEW ENGLAND SEMICONDUCTOR

6 Lake Street Lawrence, MA 01841
1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

T4-4.8-860-340 REV: --