

PNP Power Silicon Transistor

2N3740 & 2N3741



Features

- Available in JAN, JANTX, JANTXV and JANS per MIL-PRF-19500/441
- TO-66 (TO-213AA) Package



Maximum Ratings

Ratings	Symbol	2N3740	2N3741	Units
Collector - Emitter Voltage	V_{CEO}	60	80	Vdc
Collector - Base Voltage	V_{CBO}	60	80	Vdc
Emitter - Base Voltage	V_{EBO}	7.0		Vdc
Base Current	I_B	2.0		Adc
Collector Current	I_C	4.0		Adc
Total Power Dissipation @ $T_A = +25^\circ\text{C}$ @ $T_C = +100^\circ\text{C}$	P_T	3 14		W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200		$^\circ\text{C}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	7.0		$^\circ\text{C/W}$

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

OFF Characteristics	Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 100 \text{ mAdc}$ 2N3740 2N3741	$V_{(BR)CEO}$	60 80	---	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 40 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}$ 2N3740 2N3741	I_{CEO}	---	10 10	μAdc
Collector - Emitter Cutoff Current $V_{CE} = 60 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ $V_{CE} = 80 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ 2N3740 2N3741	I_{CEX}	---	300 300	nAdc
Collector - Base Cutoff Current $V_{CB} = 60 \text{ Vdc}$ $V_{CB} = 80 \text{ Vdc}$ 2N3740 2N3741	I_{CBO}	---	100 100	nAdc
Emitter - Base Cutoff Current $V_{EB} = 7.0 \text{ Vdc}$	I_{EBO}	---	100	nAdc

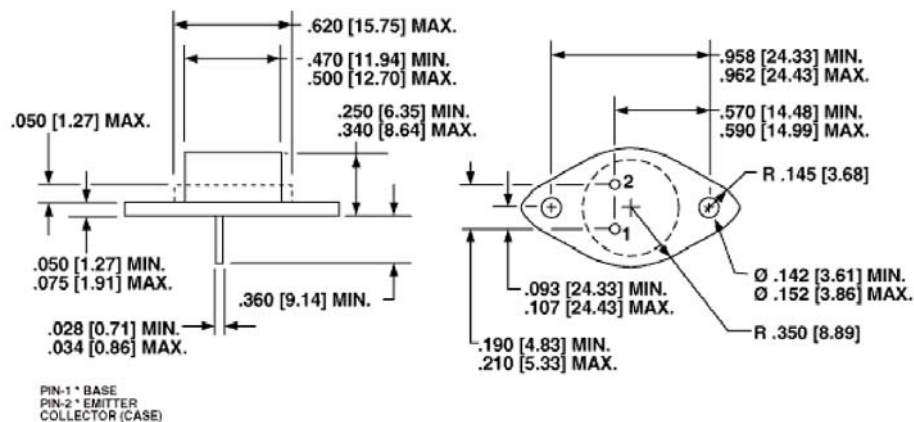


Electrical Characteristics -con't

ON Characteristics ⁽¹⁾	Symbol	Minimum	Maximum	Unit
Forward Current Transfer Ratio $I_C = 100 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 250 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 500 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 1.0 \text{ Adc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 4.0 \text{ Adc}, V_{CE} = 5.0 \text{ Vdc}$	H_{FE}	40 30 20 10 3	120	
Collector - Emitter Saturation Voltage $I_C = 250 \text{ mAdc}, I_B = 25 \text{ mAdc}$ $I_C = 1.0 \text{ Adc}, I_B = 1.25 \text{ mA}$	$V_{CE(sat)}$	- - - - - -	0.4 0.6	Vdc
Base - Emitter Voltage $I_C = 250 \text{ mAdc}, V_{CE} = 1 \text{ Vdc}$	$V_{BE(on)}$	- - -	1.0	Vdc
DYNAMIC Characteristics				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 100 \text{ mAdc}, V_{CE} = 10.0 \text{ Vdc}, f = 5.0 \text{ MHz}$	$ h_{fe} $	1	12	
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 50 \text{ mAdc}, V_{CE} = 10.0 \text{ Vdc}, f = 1.0 \text{ kHz}$	h_{fe}	25	250	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}	- - -	100	pF
SWITCHING Characteristics				
Turn-On Time $V_{CC} = 30 \text{ Vdc}, I_C = 1.0 \text{ Adc}, I_B = 0.1 \text{ Adc}$	t_{on}	- - -	400	μs
Turn-off Time $V_{CC} = 30 \text{ Vdc}, I_C = 1.0 \text{ Adc}, I_{B1} = -I_{B2} = 0.1 \text{ Adc}$	t_{off}	- - -	1.0	μs
SAFE OPERATING AREA				
DC Tests: $T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t = 1.0 \text{ s}$ Test 1: $V_{CE} = 6.25 \text{ Vdc}, I_C = 4.0 \text{ Adc}$ Test 2: $V_{CE} = 20 \text{ Vdc}, I_C = 1.25 \text{ Adc}$ Test 3: $V_{CE} = 50 \text{ Vdc}, I_C = 150 \text{ mAdc}$ 2N3740 $V_{CE} = 65 \text{ Vdc}, I_C = 150 \text{ mAdc}$ 2N3741				

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

Outline Drawing



NOTE: Dimensions in Inches [mm]

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