NPN Power Silicon Transistor

2N3766 & 2N3767

NEW

AEROFLEX
A passion for performance.

Features

- Available in JAN, JANTX, and JANTXV per MIL-PRF-19500/518
- TO-66 (TO-213AA) Package

Maximum Ratings

Ratings	Symbol	2N3766	2N3767	Units
Collector - Emitter Voltage	V_{CEO}	60	80	Vdc
Collector - Base Voltage	V_{CBO}	80	100	Vdc
Emitter - Base Voltage	V_{EBO}	6.0		Vdc
Base Current	I_B	2.0		Adc
Collector Current	I_C	4.0		Adc
Total Power Dissipation @ T_C = +25 °C [1]	P_T	25		W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200		°C

Thermal Characteristics

Characteristics	Symbol	Maximum	Units
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.66	°C/W

1) Derate linearly 143 mW/°C between T_C = +25°C and T_C = +200°C

Electrical Characteristics (T_C = 25°C unless otherwise noted)

OFF Characteristics	Symbol	Mimimum	Maximum	Units
Collector - Emitter Breakdown Voltage I_C = 100 mAdc 2N3766 2N3767	$V_{(BR)CEO}$	60 80	- - -	Vdc
Collector - Emitter Cutoff Current V_{CE} = 60 Vdc 2N3766 V_{CE} = 80 Vdc 2N3767	I_{CEO}	- - -	500 500	µAdc
Collector - Emitter Cutoff Current V_{CE} = 80 Vdc, V_{BE} = 1.5 Vdc 2N3766 V_{CE} = 100 Vdc, V_{BE} = 1.5 Vdc 2N3767	I_{CEX}	- - -	10	µAdc
Collector - Base Cutoff Current V_{CB} = 80 Vdc 2N3766 V_{CB} = 100 Vdc 2N3767	I_{CBO}	- - -	10 10	µAdc
Emitter - Base Cutoff Current V_{EB} = 6.0 Vdc	I_{EBO}	- - -	500	µAdc

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Electrical Characteristics -con't

ON Characteristics (2)	Symbol	Minimum	Maximum	Unit
Forward Current Transfer Ratio I_C = 50 mAdc, V_{CE} = 5.0 Vdc I_C = 500 mAdc, V_{CE} = 5.0 Vdc I_C = 1.0 Adc, V_{CE} = 10.0 Vdc	H_{FE}	30 40 20	160	
Collector - Emitter Saturation Voltage I_C = 1.0 Adc, I_B = 0.1 Adc I_C = 0.5 Adc, I_B = 0.5 Adc	$V_{CE(sat)}$	- - - - - -	2.5 1.0	Vdc
Base-Emitter Voltage I_C = 1.0 Adc, V_{CE} = 10.0 Vdc	$V_{BE(on)}$	- - -	1.5	Vdc
DYNAMIC Characteristics				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 500 mAdc, V_{CE} = 10.0 Vdc, f = 10 MHz	$|h_{fe}|$	1.0	8.0	
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, 0.1 MHz $\leq$ f $\leq$ 1.0 MHz	C_{obo}	- - -	50	pF
Switching Characteristics				
Turn-on Time V_{CC} = 30 Vdc, I_C = 0.5 Adc, I_{B1} = 0.05 Adc	t_{on}	- - -	0.25	μs
Turn-Off Time V_{CC} = 30 Vdc, I_C = 0.5 Adc, I_{B1} = -I_{B2} = 0.05 Adc	t_{off}	- - -	2.5	μs
SAFE OPERATING AREA				
DC Tests: $\qquad$ T_C = +25 °C, 1 Cycle, t = 1.0 s **Test 1:** $\qquad$ V_{CE} = 6.22 Vdc, I_C = 4.0 Adc **Test 2:** $\qquad$ V_{CE} = 20 Vdc, I_C = 1.25 Adc **Test 3:** $\qquad$ V_{CE} = 50 Vdc, I_C = 150 mAdc $\qquad$ 2N3766 $\qquad\qquad$ V_{CE} = 65 Vdc, I_C = 150 mAdc $\qquad$ 2N3767				

(2) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤2.0%.

Outline Drawing

.620 [15.75] MAX.
.470 [11.94] MIN.
.500 [12.70] MAX.
.250 [6.35] MIN.
.340 [8.64] MAX.
.050 [1.27] MAX.
.050 [1.27] MIN.
.075 [1.91] MAX.
.360 [9.14] MIN.
.028 [0.71] MIN.
.034 [0.86] MAX.

PIN-1 * BASE
PIN-2 * EMITTER
COLLECTOR (CASE)

.958 [24.33] MIN.
.962 [24.43] MAX.
.570 [14.48] MIN.
.590 [14.99] MAX.
R .145 [3.68]
Ø .142 [3.61] MIN.
Ø .152 [3.86] MAX.
R .350 [8.89]
.093 [24.33] MIN.
.107 [24.43] MAX.
.190 [4.83] MIN.
.210 [5.33] MAX.
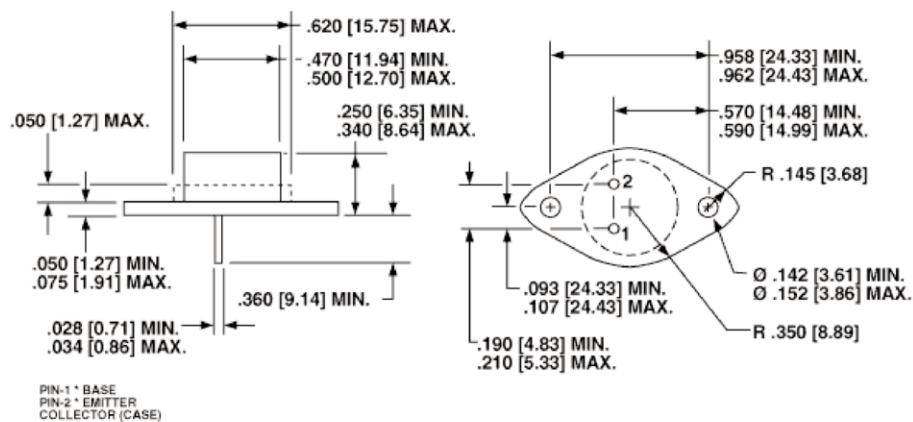
NOTE: Dimensions in Inches [mm]

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AEROFLEX
A passion for performance.

Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.

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