

NPN Power Silicon Transistor

2N3766 & 2N3767



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 @ $T_C = +25^\circ\text{C}$ (1)	P_T	25		W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200		$^\circ\text{C}$

Thermal Characteristics

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

1) Derate linearly 143 mW/ $^\circ\text{C}$ between $T_C = +25^\circ\text{C}$ and $T_C = +200^\circ\text{C}$

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

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

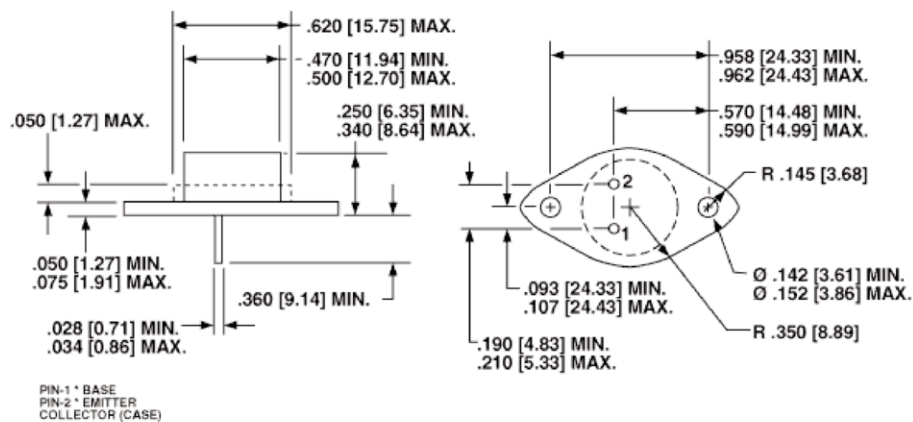


Electrical Characteristics -con't

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

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

Outline Drawing



NOTE: Dimensions in Inches [mm]

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