



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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NPN POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/518

Devices

2N3766

2N3767

Qualified Level

JAN
JANTX
JANTXV

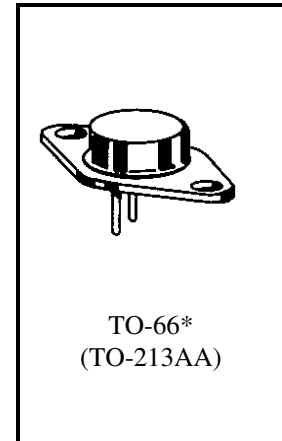
MAXIMUM RATINGS

Ratings	Symbol	2N3766	2N3767	Units
Collector-Emitter Voltage	V_{CE0}	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	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	7.0	$^{\circ}\text{C}/\text{W}$

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



*See Appendix A for Package Outline

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

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 100 \text{ mAdc}$	2N3766 2N3767	$V_{(BR)CE0}$	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 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)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽²⁾				
Forward-Current Transfer Ratio I _C = 50 mA _{dc} , V _{CE} = 5.0 V _{dc} I _C = 500 mA _{dc} , V _{CE} = 5.0 V _{dc} I _C = 1.0 A _{dc} , V _{CE} = 10 V _{dc}	h _{FE}	30 40 20	160	
Collector-Emitter Saturation Voltage I _C = 1.0 A _{dc} , I _B = 0.1 A _{dc} I _C = 0.5 A _{dc} , I _B = 0.05 A _{dc}	V _{CE(sat)}		2.5 1.0	V _{dc}
Base-Emitter Voltage I _C = 1.0 A _{dc} , V _{CE} = 10 V _{dc}	V _{BE(on)}		1.5	V _{dc}

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I _C = 500 mA _{dc} , V _{CE} = 10 V _{dc} , f = 10 MHz	h _{fe}	1.0	8.0	
Output Capacitance V _{CB} = 10 V _{dc} , I _E = 0, 0.1 MHz ≤ f ≤ 1.0 MHz	C _{obo}		50	pF

SWITCHING CHARACTERISTICS

Turn-On Time V _{CC} = 30 V _{dc} ; I _C = 0.5 A _{dc} ; I _B = 0.05 A _{dc}	t _{on}		0.25	μs
Turn-Off Time V _{CC} = 30 V _{dc} ; I _C = 0.5 A _{dc} ; I _B = I _B = 0.05 A _{dc}	t _{off}		2.5	μs

SAFE OPERATING AREA

DC Tests T _C = +25°C, 1 Cycle, t = 1.0 s	
Test 1 V _{CE} = 6.25 V _{dc} , I _C = 4.0 A _{dc}	
Test 2 V _{CE} = 20 V _{dc} , I _C = 1.25 A _{dc}	
Test 3 V _{CE} = 50 V _{dc} , I _C = 150 mA _{dc} 2N3766 V _{CE} = 65 V _{dc} , I _C = 150 mA _{dc} 2N3767	

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

