

ATA MOSPEC

MEDIUM- POWER NPN SILICON TRANSISTORS

... designed for use in general-purpose amplifier and switching applications

FEATURES:

- * Low Saturation Voltage-1.0 V, $V_{CE(SAT)}$ @ $I_C = 500$ mA
- * High Gain Characteristics - $h_{FE} = 40-160$ @ $I_C = 500$ mA
- * Packaged in the compact, High-Efficiency TO-66 Case

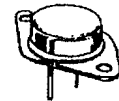
NPN
2N3766
2N3767

4 AMPERE
POWER TRANSISTORS
NPN SILICON

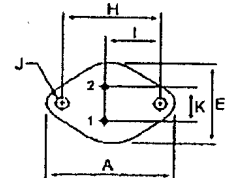
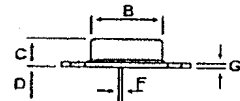
60-80 VOLTS
20 WATTS

MAXIMUM RATINGS

Characteristic	Symbol	2N3766	2N3767	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	V
Collector-Base Voltage	V_{CBO}	80	100	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Collector Current-Continuous	I_C	4.0		A
Base Current	I_B	2.0		A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	20		W
		0.133		W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	- 65 to + 200		$^\circ\text{C}$



TO-66

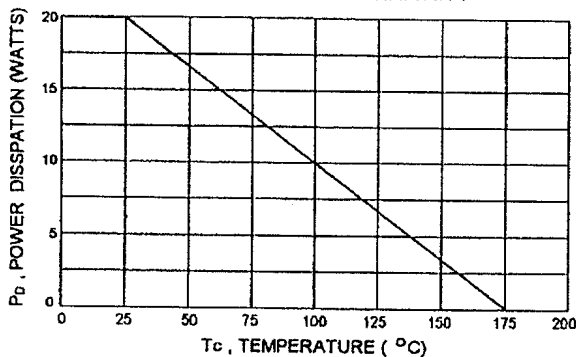


PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max.	Unit
Thermal Resistance Junction to Case	$R\theta_{jc}$	7.5	$^\circ\text{C/W}$

FIGURE-1 POWER DERATING



DIM	MILLMETERS	
	MIN	MAX
A	30.60	32.52
B	13.85	14.16
C	6.54	7.22
D	9.50	10.50
E	17.26	18.46
F	0.76	0.92
G	1.38	1.65
H	24.16	24.78
I	13.84	15.60
J	3.32	3.92
K	4.86	5.34

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

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

OFF CHARACTERISTICS

Collector - Emitter Sustaining Voltage(1) ($I_c = 100\text{ mA}$, $I_B = 0$)	2N3766 2N3767	$V_{CEO(SUS)}$	60 80	V
Collector -Base Cutoff Current ($V_{CB} = 80\text{ V}$, $I_E = 0$) ($V_{CB} = 100\text{ V}$, $I_E = 0$)	2N3766 2N3767	I_{CBO}	0.1 0.1	mA
Collector -Emitter Cutoff Current ($V_{CE} = 60\text{ V}$, $I_B = 0$) ($V_{CE} = 80\text{ V}$, $I_B = 0$)	2N3766 2N3767	I_{CEO}	0.7 0.7	mA
Collector Cutoff Current ($V_{CE} = 80\text{ V}$, $V_{BE(off)} = 1.5\text{ V}$) ($V_{CE} = 100\text{ V}$, $V_{BE(off)} = 1.5\text{ V}$)	2N3766 2N3767	I_{CEX}	0.1 0.1	mA
Emitter Cutoff Current ($V_{EB} = 6.0\text{ V}$, $I_C = 0$)		I_{EBO}	0.75	mA

ON CHARACTERISTICS

DC Current Gain ($I_c = 50\text{ mA}$, $V_{CE} = 5.0\text{ V}$) ($I_c = 500\text{ mA}$, $V_{CE} = 5.0\text{ V}$) ($I_c = 1.0\text{ A}$, $V_{CE} = 10\text{ V}$)	h_{FE}	30 40 20	160	
Collector - Emitter Saturation Voltage ($I_c = 500\text{ mA}$, $I_B = 50\text{ mA}$) ($I_c = 1.0\text{ A}$, $I_B = 0.1\text{ A}$)	$V_{CE(SAT)}$		1.0 2.5	V
Base - Emitter On Voltage ($I_c = 1.0\text{ A}$, $V_{CE} = 10\text{ V}$)	$V_{BE(on)}$		1.5	V

DYNAMIC CHARACTERISTICS

Current Gain - Bandwidth Product ($I_c = 500\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 1\text{ MHz}$)	f_T	5.0		MHz
Small - Signal Current Gain ($I_c = 100\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 1\text{ KHz}$)	h_{fe}	30		

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