MOSPEC

NPN POWER TRANSISTOR

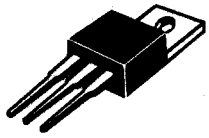
These devices are high voltage,high speed transistors for horizontal deflection output stages of TV"s and CTV"s circuits.

FEATURES:

* Collector-Emitter Sustaining Voltage -
  V_{CEV} = 330 V (Min.) - BU407
  = 400 V (Min.) - BU406
* Low Saturation Voltage
  $V_{CE(sat)}$=1.0V(Max) @I_C=5.0A
* Fast Switching Speed: tf=0.75 us (Max)

NPN
BU406
BU407

7 AMPERE
POWER
TRANSISTORS
150-200 VOLTS
60 WATTS



TO-220

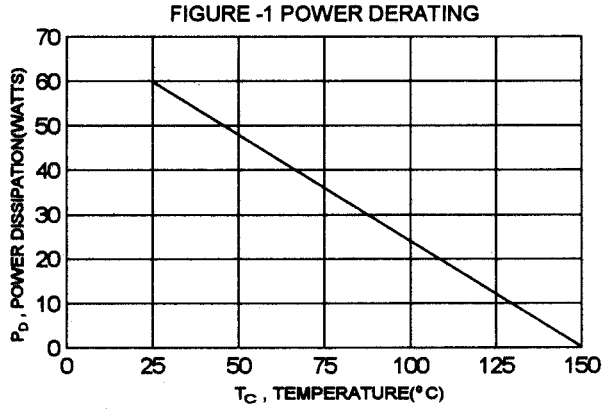
MAXIMUM RATINGS

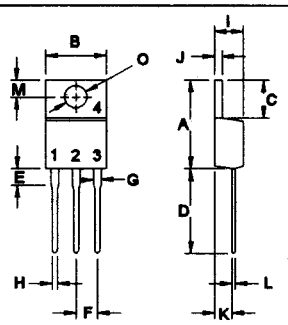
Characteristic	Symbol	BU406	BU407	Unit
Collector-Emitter Voltage	V_{CEO}	200	150	V
Collector-Emitter Voltage	V_{CEV}	400	330	V
Collector-Bse Voltage	V_{CBO}	400	330	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Collector Current - Continuous - Peak	I_C	7.0 10		A
Base Current - Continuous	I_B	4.0		A
Total Power Dissipation @T_C=25°C Derate above 25°C	P_D	60 0.48		W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	- 65 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	2.08	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

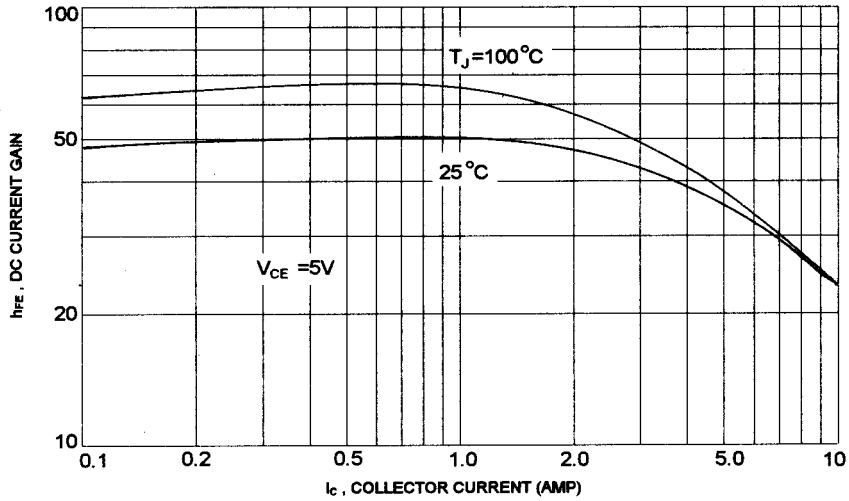
DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

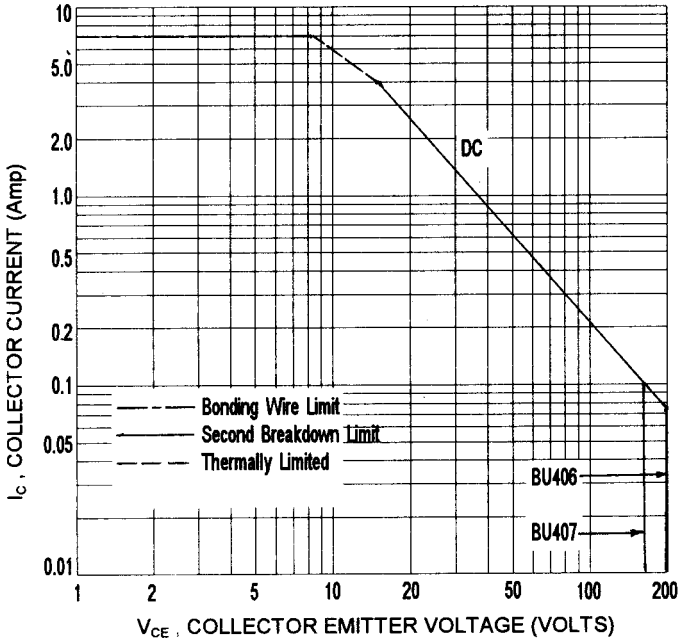
Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 100 mA, I_B = 0)	BU406 BU407	$V_{CEO(SUS)}$	 200 150		V
Collector Cutoff Current (V_{CE} = 400 V, V_{BE}= 0) (V_{CE} = 330 V, V_{BE}= 0)	BU406 BU407	I_{CES}		 5.0 5.0	mA
Emitter Cutoff Current (V_{EB}= 6.0 V , I_C = 0)		I_{EBO}		1.0	mA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C =2.0 A , V_{CE} = 5.0 V)		hFE	30(typ)		
Collector - Emitter Saturation Voltage (I_C =5.0 A, I_B = 0.5 A)		$V_{CE(sat)}$		1.0	V
Base - Emitter Saturation Voltage (I_C =5.0 A, I_B = 0.5 A)		$V_{BE(sat)}$		1.2	V
DYNAMIC CHARACTERISTICS					
Current Gain - Bandwidth Product (I_C = 0.5 A , V_{CE} = 10 V , f = 1.0 MHz)		f_T	10		MHz
Output Capacitance (V_{CE}=10V, I_E=0, f=1.0 MHz)		C_{ob}	80(typ)		pF
SWITCHING CHARACTERISTICS					
Fall Time (V_{CC}=40 V, I_C=5.0 A, I_{B1}=-I_{B2}= 0.6A, L=150 uH)		t_f		0.75	us

(1) Pulse Test: Pulse width ≦ 300 us , Duty Cycle ≦ 2.0%

DC CURRENT GAIN



ACTIVE-REGION SAFE OPERATING AREA (SOA)



There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

The data of SOA curve is base on $T_{J(PK)}$=150 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$≤150°C,At high case temperatures, thermal limita - tion will reduce the power that can be handled to values less than the limitations imposed by second breakdown.