MOSPEC

SWITCHMODE SERIES NPN POWER TRANSISTORS

... designed for use in high-voltage,high-speed,power switching regulators,converters,inverters,motor control system application.

NPN
BUV48
BUV48A

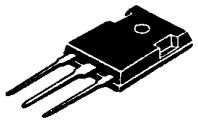
15 AMPERE
POWER
TRANSISTORS
400 - 450 VOLTS
150 WATTS

FEATURES:

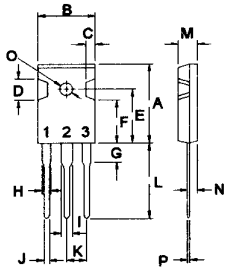
*Collector-Emitter Sustaining Voltage-
$V_{CEO(SUS)}$ = 400 V (Min) --BUV48
=450 V (Min) --BUV48A

* Collector-Emitter Saturation Voltage -
$V_{CE(sat)}$ =1.5 V (Max.) @ I_C = 10 A--BUV48
I_C = 8 A--BUV48A

* Switching Time - t_f =0.8 us (Max.) @ I_C =10 A --BUV48
I_C = 8 A--BUV48A



TO-247(3P)



PIN 1.BASE
2.COLLECTOR
3.EMITTER

DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

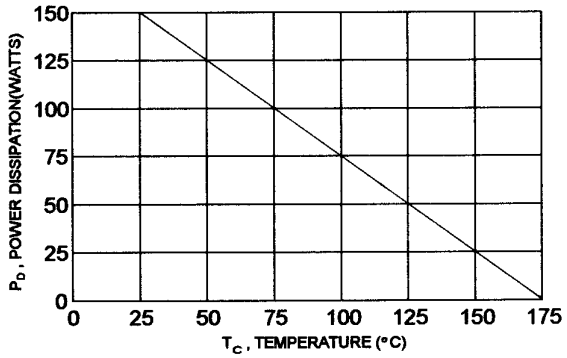
MAXIMUM RATINGS

Characteristic	Symbol	BUV48	BUV48A	Unit
Collector-Emitter Voltage	V_{CEO}	400	450	V
Collector-Emitter Voltage (V_{BE}=-2.5V)	V_{CEX}	850	1000	V
Emitter-Base Voltage	V_{EBO}	7		V
Collector Current - Continuous - Peak	I_C I_{CM}	15 30		A
Base current	I_B	4		A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	150 1.0		W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	-65 to +175		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.0	°C/W

FIGURE -1 POWER DERATING



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

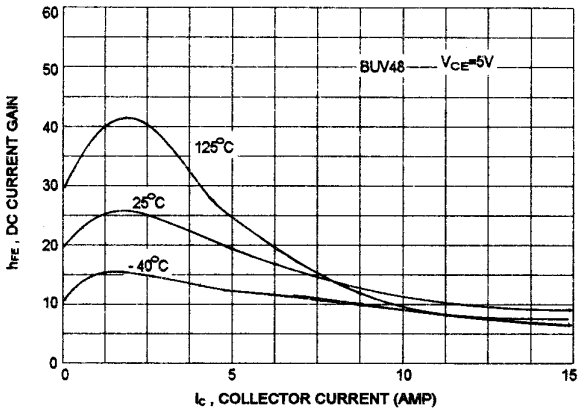
Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 200 mA, I_B = 0, L= 25 mH)	BUV48 BUV48A	$V_{CEO(SUS)}$	 400 450		V
Collector Cutoff Current (V_{CE} = V_{CEX} , V_{BE}= -2.5V) (V_{CE} = V_{CEX} , V_{BE}= -2.5V ,T_C=125 °C)		I_{CEX}		 0.2 2.0	mA
Collector Cutoff Current (V_{CE} = V_{CEX} , R_{BE}< 10 ohm) (V_{CE} = V_{CEX} , R_{BE}< 10 ohm ,T_C=125 °C)		I_{CER}		 0.5 4.0	mA
Emitter Cutoff Current (V_{EB}= 5.0 V , I_C = 0)		I_{EBO}		 1.0	mA
ON CHARACTERISTICS (1)					
Collector - Emitter Saturation Voltage (I_C =10 A, I_B = 2.0 A) (I_C =8.0 A, I_B = 1.6 A) (I_C =15 A, I_B = 3.0 A) (I_C =12 A, I_B = 2.4 A)	 BUV48 BUV48A BUV48 BUV48A	$V_{CE(sat)}$		 1.5 1.5 5.0 5.0	V
Base - Emitter Saturation Voltage (I_C =10 A, I_B = 2.0 A) (I_C =8.0 A, I_B = 1.6 A)	 BUV48 BUV48A	$V_{BE(sat)}$		 1.6 1.6	V

SWITCHING CHARACTERISTICS

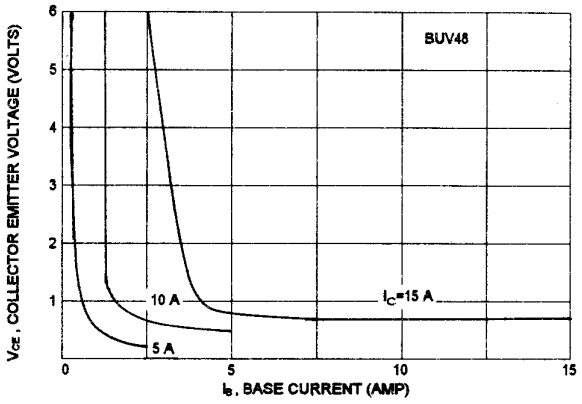
Turn On Time	I_C= 10A, I_{B1}= 2.0A, I_{B2}= -2.0A BUV48 V_{CC}= 150V I_C= 8 A, I_{B1}= 1.6A, I_{B2}= -1.6A BUV48A	t_{on}		1.0	us
Storage Time		t_s		3.0	us
Fall Time		t_f		0.8	us

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

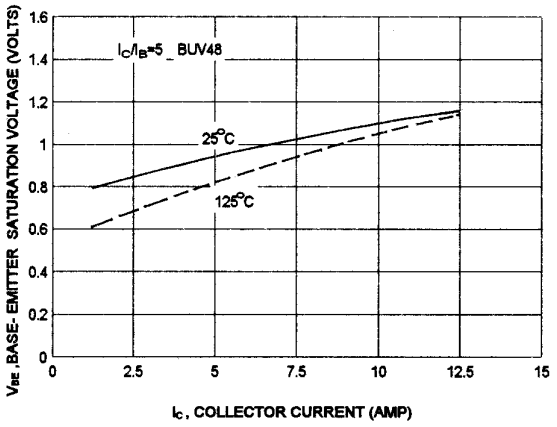
DC CURRENT GAIN



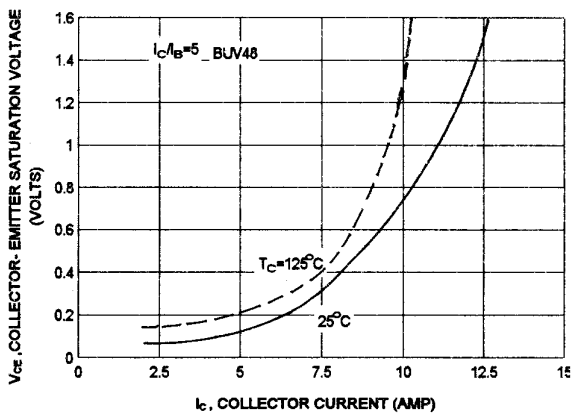
COLLECTOR SATURATION REGION



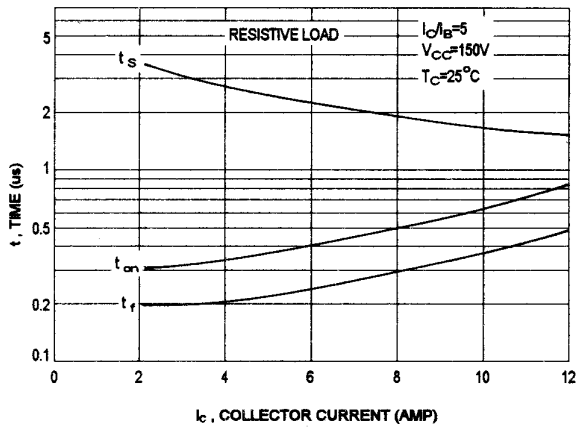
BASE-EMITTER SATURATION VOLTAGE



COLLECTOR-EMITTER SATURATION VOLTAGE



SWITCHING TIME



ACTIVE-REGION SAFE OPERATING AREA