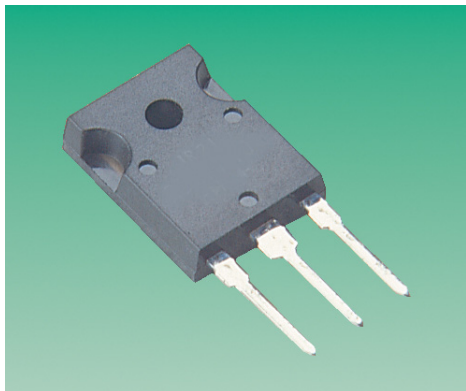


BUV48A

Power Transistor



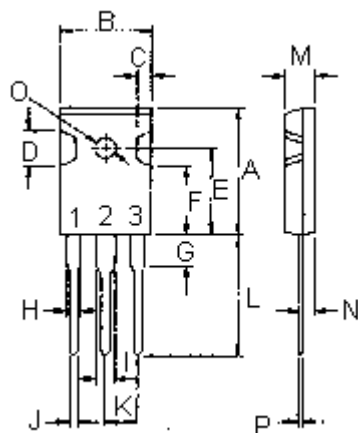
High Voltage Switching



Switchmode Series NPN Power Transistors are designed for use in high-voltage, high-speed, power switching regulators, converters, inverters, motor control system application.

Features:

- Collector-Emitter sustaining voltage - $V_{CEO(sus)} = 450V$ (Minimum).
- Collector-Emitter saturation voltage - $V_{CE(sat)} = 1.5V$ (Maximum) at $I_C = 8A$.
- Switching time $-t_f = 0.8\mu s$ (Maximum) at $I_C = 8A$.



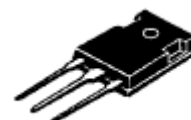
- Pin 1. Base
2. Collector
3. Emitter

Dimensions	Minimum	Maximum
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

Dimensions : Millimetres

NPN
BUV48A

15 Ampere
Power
Transistor
450 Volts
150 Watts



TO-247

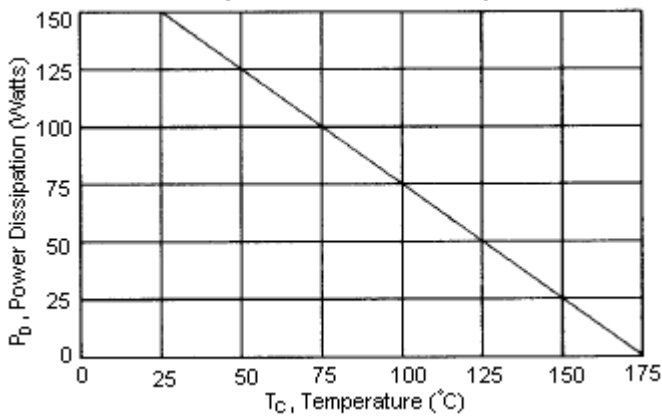
Maximum Ratings

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

Thermal Characteristics

Characteristic	Symbol	Maximum	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.0	$^\circ C/W$

Figure - 1 Power Derating



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

Characteristic	Symbol	Minimum	Maximum	Unit	
OFF Characteristics					
Collector-Emitter Sustaining Voltage (1) ($I_C = 200\text{mA}$, $I_B = 0$, $L = 25\text{mH}$)	$V_{CEO(sus)}$	450	-	V	
Collector Cut off Current ($V_{CE} = V_{CEX}$, $V_{BE} = -2.5\text{V}$) ($V_{CE} = V_{CEX}$, $V_{BE} = -2.5\text{V}$, $T_C = 125^\circ\text{C}$)	I_{CEX}	-	0.2 2.0	mA	
Collector Cut off Current ($V_{CE} = V_{CEX}$, $R_{BE} < 10\Omega$) ($V_{CE} = V_{CEX}$, $R_{BE} < 10\Omega$, $T_C = 125^\circ\text{C}$)	I_{CER}	-	0.5 4.0		
Emitter Cut off Current ($V_{EB} = 5.0\text{V}$, $I_C = 0$)	I_{EBO}	-	1.0		
ON Characteristics (1)					
Collector-Emitter Saturation Voltage ($I_C = 8.0\text{A}$, $I_B = 1.6\text{A}$) ($I_C = 12\text{A}$, $I_B = 2.4\text{A}$)	$V_{CE(sat)}$	-	1.5 5.0	V	
Base-Emitter Saturation Voltage ($I_C = 8.0\text{A}$, $I_B = 1.6\text{A}$)	$V_{BE(sat)}$	-	1.6		
Switching Characteristics					
Turn On Time	$I_C = 8\text{A}$, $I_{B1} = 1.6\text{A}$, $I_{B2} = -1.6\text{A}$	t_{on}	-	1.0	μs
Storage Time		t_s	-	3.0	
Fall Time		t_f	-	0.8	

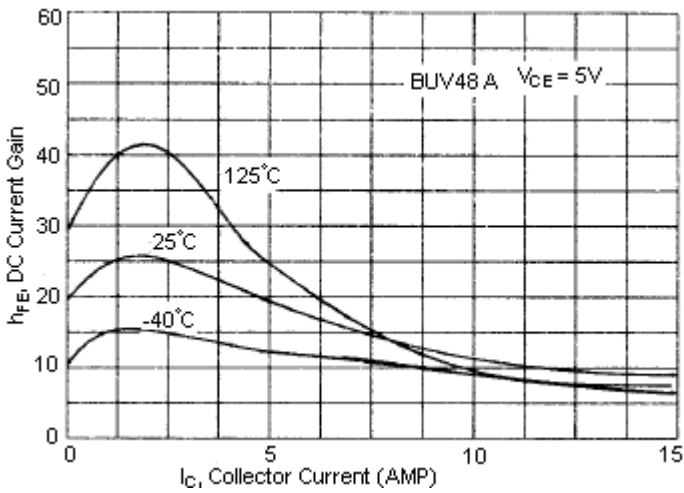
(1) Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

BUV48A

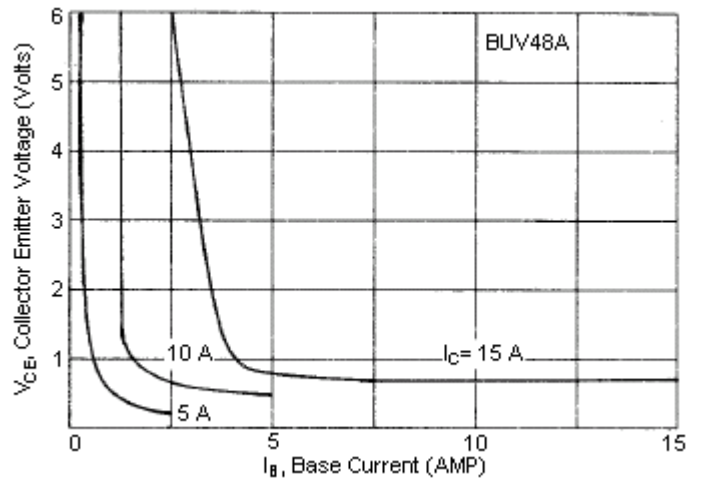
Power Transistor



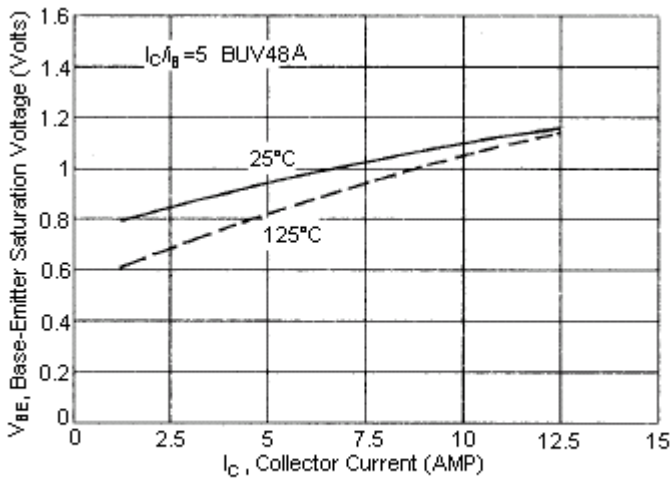
DC Current Gain



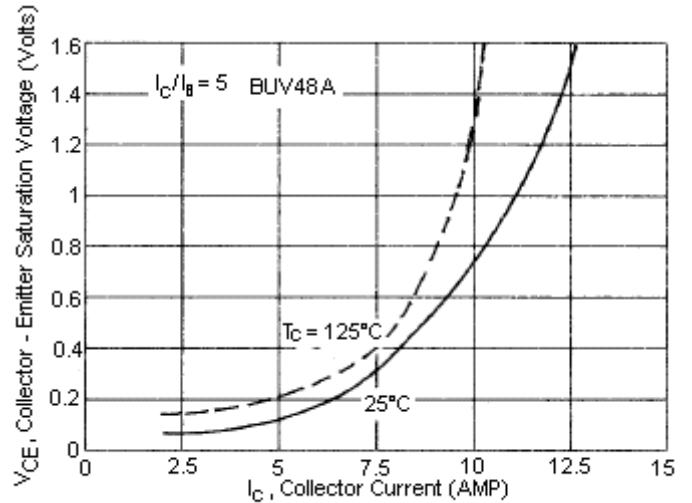
Collector Saturation Region



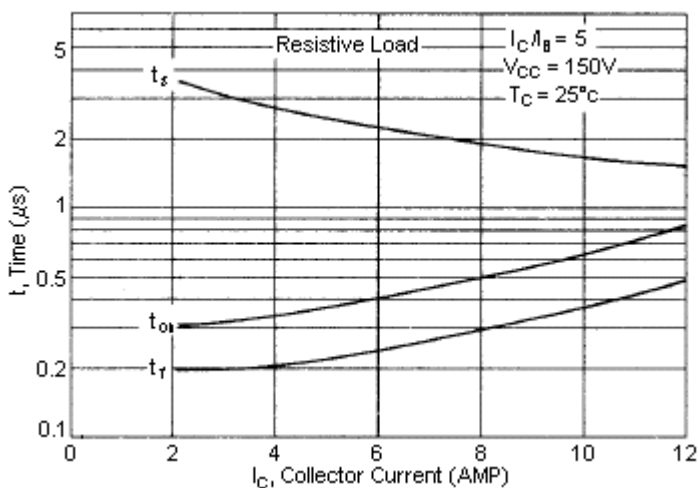
Base-Emitter Saturation Voltage



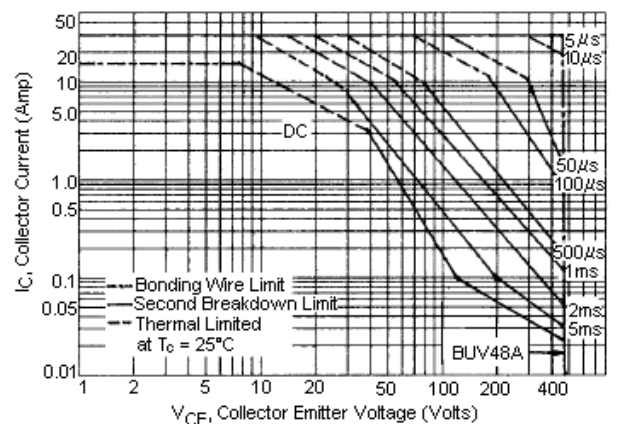
Collector-Emitter Saturation Voltage



Switching Time



Active-Region Safe Operating Area



BUV48A

Power Transistor



Specifications

$I_{C(av)}$ maximum (A)	V_{CEO} maximum (V)	V_{CEX} maximum (V)	$V_{CE(Sat)}$ (V) at $I_C = 12A$	t_f maximum (μs)	P_{tot} at 25°C (W)	Package	Type	Part Number
15	450	1000	5.0	0.8	150	TO-247	NPN	BUV48A

Notes:

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